European Commission
Directorate-General for Economic and Financial Affairs

# Joint Report on Health Systems
# COUNTRY FICHES
## prepared by
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## the Economic Policy Committee (AWG)

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# Belgium

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (28900 PPS in 2008) is higher than the EU average (25075 PPS). The Belgian economy, heavily concentrated on the export of a large volume of manufactured goods, depends largely on the state of the world market and the European market in particular. Consequently, Belgium has been hit by the economic crisis with a forecasted GDP growth of -3.1% in 2009 and a slow recovery in 2010 (+1.3%) and 2011 (+1.6%).[1] One of the main consequences is a public deficit of 6% of GDP in 2009 and a high increase of the general government gross debt which should account for 101.6% in 2010. Therefore, fiscal consolidation to bring government revenues and spending in line may have consequences for the health sector.[2]

**Recent trends of expenditure**

Total expenditure[3] on health as a percentage of GDP (10.2% in 2008) is above the EU average[4] (9.6%), having increased from 8.7% in 1998. Indeed Belgium has one of the highest health care expenditure as a percentage of GDP among the 27 European Union countries. Public expenditure on health as a percentage of GDP is, however, at the EU average (7.4% in 2008), having slightly increased from 6.4% in 1998. The high ratio of total expenditure is mainly due to a lower GDP growth compared to the government's policy to allow for real spending growth on health care up to 4.5% in real terms from 2004 onwards. Despite such policy, actual spending has grown at a more moderate pace during this period: at around 3% per year, compared with an average 2.7% GDP growth rate. When looking at per capita expenditure both total (3007 PPS in 2008) and public (2182 PPS in 2008) are also higher than the respective EU average (2381 PPS and 1826 PPS) and have significantly increased since 1998 (1817 PPS and 1326 PPS).

**The role of technology**

Total expenditure on pharmaceuticals as a percentage of GDP is just slightly above the EU average (1.7% vs. 1.5% in 2008)[5] but recent trends show that the average cost of prescribed pharmaceuticals is increasing sharply. The data provided by the National Institute for Sickness and Disability Insurance show that the total cost increase of 13.6% in 2008 has two major causes: not only the extension of the coverage of the compulsory health insurance to minor risks for the self-employed, but also a significant increase in the prescription of drug types like psycho medication, anti-ulcer or anti-cholesterol. The "real growth" – i.e. without taking into account the impact of the coverage extension for the self-employed – still amounts to 7.8%. This increase is not only caused by epidemiological factors. It may be linked to increasing stress levels - caused e.g. by economic uncertainty, but also to the general tendency to "medicalise" health problems (other European countries face the general increase in the use of pharmaceuticals). There may also be financial incentives to prefer/prescribe drugs: psycho medication, for example, is covered by public health insurance, while psychotherapy is not (except when provided by a psychiatrist).

The number of MRI and PET units per 100 000 inhabitants (0.8 in 2008 and 0.1 in 2006) are respectively below and about the EU average (1 and 0.1), while the number of CTS units is much

[1] European Commission (2010), European Economic Forecast – Spring 2010.

[2] As of this writing, the growth norm is still in place, while the next federal government's plans are still unknown.

[3] Data on expenditure for Belgium is taken from Eurostat and OECD health data.

[4] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

[5] Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.

above the EU average (4.2 vs. 1.9 in 2007). Recent initiatives, based on scientific support and standards, promote a rationale use of medical goods: for example, medical imaging has to follow strict internationally validated guidelines.

**Health Status and healthy behaviour – life-styles – risk factors**

Life expectancy (82.6 for women and 77.1 for men in 2007) and healthy life years (63.7 for women and 63.3 for men in 2007) is slightly above the average in the EU (82.3 and 76.3 in 2007).[6] Mortality is mainly due to heart and vascular disorders, neoplasm, disorders of the respiratory system and unnatural causes of death.[7] Health inequalities between socio-economic groups are evident in diseases for which prevention would have a significant impact such as liver's cirrhosis, intestinal cancer, suicide and accidents[8] or dental health status.[9]

Data suggests an increase in the proportion of the population which is obese (from 12.1% in 2001 to 13.8% in 2008), although not as large an increase as in other EU countries. In comparison, alcohol consumption has decreased substantially since the mid-1980s and is now very similar to, below the EU average. Data also indicates that there has been a decrease in the share of the population that smokes regularly (31% in 2000 to 20% in 2008) but recent data show an uncertain trend with a significant increase in the number of the smokers between 2005 and 2006, and then a new decrease in 2008.[10] These values deserve attention and action since it appears that after many successful reforms like the ban on smoking in public areas (2006), effective non-smoking campaigns or tax increases on tobacco products, without any new incentives, the number of smokers tends to increase back.

## 2. Expenditure prospects: population ageing and future health status

The population is projected to increase by 1.6 million from 2008 to 2060. Life expectancy is projected to increase by 7.8 years for men and 6.6 years for women (less than the respective EU average of 8.5 and 6.9 years). The share of the old (65+) is projected to increase by 9.5 pps and the share of the very old (80+) by 5.6 pps (much less than the EU average of 13 pps thanks to relatively high net migration and not too low fertility rate) from 2008 to 2060.

Overall, projected health care expenditure increase is expected to add to the strong budgetary pressure from other age-related items of public expenditure (mainly pensions) contributing to the high risk for long-term sustainability of public finances. As a result of ageing[11], health care expenditure is projected to increase by 1.5 pps of GDP (below the average change in the EU of 1.7 pps). In Belgium, good health (translated by a constant health scenario) could reduce the projected expenditure increase by 80% (from 1.5 pps to 0.3 pps) highlighting the importance of improving health behaviour.

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[6] Data on life expectancy and healthy life years is from the Eurostat database. Data on life-styles is taken from OECD health data and Eurostat database.

[7] E.g. accidents and suicide.

[8] Bossuyt, 2001.

[9] Van Nieuwenhuysen and Carvalho 2000.

[10] 30% according to the Belgian Department of Health.

[11] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf).

# 3. Health care coverage and expenditure

The Belgian health system is mainly based on the principles of equal access and freedom of choice. All residents have to register to a Bismarckian-type of public compulsory health insurance (sickness funds) which offers a very broad benefits package (a positive list of goods and services is defined at the central level). All individuals entitled to health insurance must join a sickness fund. The choice is free[12] between available sickness funds which are mainly organised according to religious or political affiliations into five national alliances. The Belgian sickness funds have to control health expenditure in accordance with legal regulations. Belgium's health service is known for its high accessibility and quality of treatments. The coverage is almost full concerning over 99% of the population.[13] The self-employed have seen their health care coverage improve from January 2008 as authorities extended their coverage of types of risks and therefore types of care. The health care delivery is conversely mainly supplied by a private system, based on independent medical practice, free choice of service provider and predominantly fee-for-service payment.

According to his/her employment situation, his/her statute (preferential reimbursement or not[14]), the type of service requested and the amount of user charges already paid, the patient will participate in health-care financing by paying a certain fixed amount of the cost of a service, with the third-party payer covering the balance of the amount. In 2001, the maximum billing (MAF) system was introduced to cover mainly people with low income not belonging to a specific protected social category or people with chronic illness. Thanks to this scheme, each household has, according to the family's net income, an annual out-of-pocket ceiling for all necessary health care expenses. In addition, low income individuals benefit from reduced insurance contribution rates.

Around 77.4% of the population hold private voluntary health insurance (both complementary and supplementary), covering for part of the costs unsupported by the compulsory insurance and for goods and services outside public compulsory health insurance. Voluntary health insurances can be provided by either sickness funds or by private profit-making insurance companies. The high percentage of holders of private voluntary health insurance – with a very significant increase since the 1990s – can be explained by three factors: (i) private insurance of minor risks by the self-employed prior to 2008, (ii) many have some additional insurance provided by their sickness fund to cover medical costs not reimbursed by the public system (e.g. a growing demand of hospitalised patients for single-room accommodation) and (iii) a growing number of employees get supplementary hospital insurance as part of their compensation package (with an overlap between the latter two groups). Note though that private insurance has remained marginal overall in scope (around 4.5% of total health expenditure in 2008, see Assuralia, 2010).

Private expenditure (patient co-financing and voluntary private insurance) represented 27.4% of the total health expenditure in 2008[15] and is above the EU average (22.7%). The share is slightly higher than in 1998 (26.2%) but lower than that registered in 1999-2002. Out-of-pocket expenditure is about 22.2% of total health expenditure, much the same as in 1998 and again lower than in the years 1999-2002. This suggests a higher increase in expenditure on private voluntary health insurance than on out-of-pocket payments.[16]

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[12] Except for railway workers.

[13] Theoretically, even individuals not enrolled at a sickness fund are covered, provided they take the necessary steps (i.e. the theoretical coverage is 100%). If they do so, they are placed in the category "registered in the State Register" and they are covered. A small minority who fail to register are not officially insured.

[14] To qualify for preferential reimbursement the patient has to belong to a socioeconomically vulnerable group and have an income below a certain limit. In addition, patients with certain medical conditions or chronic diseases are exempted from cost-sharing.

[15] Including the out-of-pocket expenditures for accommodation in nursing homes.

[16] As a result, Belgium scores almost 6 out of 6 on the breadth, 6 in the scope and a bit less than 5 on the depth of basic coverage according to the OECD scoreboard.

# 4. Collection, pooling and allocation of financial resources

In 2006, 68% of total health expenditure funding came from federal government sources (taxes and social security contributions almost equally), about 23% from out-of-pocket and the rest mainly from voluntary private health insurance. Very small contributions to global funding are also brought by regional and local governments (3.5% in 2006).[17]

The level of taxes earmarked to health is defined by the Parliament and the federal government who also defines the level of social contributions for the basic care package. The federal government defines the total public funding for health-related spending (although a substantial part of spending is on a fee-for-service basis). Since 1993[18], a "growth norm" has been introduced to restrict the annual maximum increase in total expenditure. This limit has been set to 2.5% in real terms since 2001, and to 4.5% since 2004, although the government can introduce exceptions to this rule for specific interventions.

The sickness funds are financed via the social security budget. They are remunerated for administration costs taking into account the profile of their members and their consumption in the framework of the so-called "responsabilisation" of the sickness funds.[19] Since 1995, the funds are also held financially accountable for a proportion of any discrepancy between their actual spending and the so-called normative, i.e. risk-adjusted, health-care expenditure. This reform, which has a positive impact on cost-effectiveness and competition between funds, has been gradually implemented with 40% of the total budget allocated on a prospective basis and a maximum proportion of discrepancy of 25% since 2003. The accountability of funds in the monitoring of costs can therefore be further encouraged in the future.

While overshooting is possible, health expenditures are closely monitored during the year, and if there are major discrepancies, negotiations begin between the government (who can act unilaterally if necessary), the providers and the sickness funds to find solutions such as changes in the fee schedules and co-payments or delisting certain services.[20]

In addition, sickness funds receive subsidies to cover administrative costs and to organise and develop services and activities related to promoting the health and well-being of their members.

According to the OECD, the public expenditure on health administration and health insurance as a percentage of GDP (0.4%) and as a % of current health expenditure (3.9%) is slightly above the EU average in 2008 (respectively 0.3% and 3.1%). Still in the upper range of Member States, Belgium could continue its efforts to reduce administrative costs and improve the general management of the sector.

# 5. Providers status, referral systems and patient choice

Sickness funds organisers act collectively in their negotiations with health care providers. Providers are organised in two groups: the health institutions such as hospitals, nursing homes or laboratories and the health professionals that include physicians, dentists, nurses, and pharmacists. National

[17] Gerkens S, Merkur S. Belgium: Health system review. Health Systems in Transition, 2010, 12(5):1–266.
[18] Law Moureaux of February 15th 1993.
[19] Royal Decree of August 12, 1994.
[20] Despite the growth rule and the prospective element of the financing of sickness funds, according to the OECD, Belgium scores 2 out of 6 in the OECD scoreboard due to the not very stringent budget controls.

planning sets various targets and accreditation norms that institutions must follow. Access to such professions is regulated by law.

Primary care is provided by independent general practitioners (GPs, or "family doctors"), dentists mostly in private offices and at times in group practices. Specialist outpatient care is provided predominantly in hospital outpatient departments and at times in private group practices. Day care and inpatient treatment is provided in hospitals with 66% of total hospital acute care beds owned by private not-for-profit hospitals and 34% located in publicly owned hospitals[21]. The majority of the hospitals[22] are private (70%) but both private and public hospitals are non-profit organisations.

It is generally accepted that there is an oversupply of physicians, dentists and physiotherapists in Belgium. Indeed, the number of practising physicians per 100 000 inhabitants (402) like the number of GPs (171) is much above the EU average in 2007 and has almost doubled in the last 25 years. Nevertheless, the recent trend is a significant decrease in the figures above as a result of the introduction of the quota mechanism: for 2008, the number of practising physicians per 100 000 inhabitants is down to 297 according to the OECD.[23] In addition, 58.6% of physicians are more than 45 years of age in 2008 and therefore many of these may retire in 10-15 years. In comparison, the number of nurses per 100 000 inhabitants (640) is below the EU average[24], suggesting the need to better balance the doctors/nurses ratio which may be particularly important in the context of ageing and the need to coordinate health and social care, something the authorities wish to pursue.

High numbers of GPs provide Belgium with an advantage over other EU countries to encourage the use of good quality primary care over specialist care, allowing for timely access and choice of GP. A major issue is that the gatekeeping function in the Belgian health system is not clearly defined. In an effort to encourage it, from 2002 onwards, patients pay lower co-payments if they register with one specific GP and consult with a specialist or obtain hospital treatment following a GP referral. The co-payments for those patients who go to the specialist directly, without having seen a GP first, have increased. However, patients still have free choice of physician and hospital and can directly address specialists or hospitals.[25] This may lead to some misuse or overconsumption of unnecessary and more expensive medical care and consequently a higher health care expenditure. Authorities' efforts to strengthen the position of GPs as the preferred entrance point for health care treatment and as a coordinator of care have met with strong opposition from medical professional stakeholders. In further consolidating recent measures to encourage primary care use, authorities can improve access, quality and sustainability of care. It is, therefore, important that the supply of GPs is not dramatically reduced as a result of quotas and staff ageing. Staff supply is regulated in terms of quotas for medical students and by speciality but not in terms of the location of physicians, although there are financial incentives to practice in certain locations.

The number of acute care beds per 100 000 inhabitants (425.2 in 2008), while showing a reduction, is still well above the EU average (383.2). Hence, it appears that the efforts made so far to better organise and rationalise inpatient care supply may need to be supplemented with further measures. High capacity results in very rare waiting lists and very short waits and a high degree of subjective satisfaction with the system. However, it may lead to overemphasis on hospital including inpatient care, increasing health care expenditure. The federal government establishes quotas for the number of hospitals, number of beds, types of services and supply of high cost equipment, leaving it to

[21] OECD Survey on health system characteristics 2008-2009.

[22] Classified into acute, psychiatric, geriatric and specialised hospitals.

[23] The number of physicians has probably been overestimated because it is based on a head count of registered physicians. A recent change of definition counts only doctors that provide a certain minimum level of service (see RIZIV, Annual Report 2008).

[24] However, the count only includes self-employed nurses, not nurses employed in hospitals and nursing homes.

[25] According to the OECD, Belgium scores 5 out of 6 in terms of patients' choice of providers and 3 in terms of gatekeeping.

regional governments to plan capacities. Hospital managers have autonomy to recruit medical staff though not other health staff.

Finally, pharmaceuticals are exclusively distributed through community pharmacies and hospital pharmacies and their establishment is strictly regulated since 1973.

# 6. Purchasing, contracting and remuneration systems

Two systems of payment are implemented, the first one is a reimbursement system (for outpatient/ ambulatory care) and the second one is a third-party payer system where the patient pays only the co-insurance or the co-payment (for inpatient care and pharmaceuticals).

Most health care professionals are self-employed and are paid on a fee-for-service basis (publicly and readily available), with the patient partly reimbursed (generally at a rate of 75%) afterwards. Indeed, less than 1% of the physicians working in hospitals are employees. Nurses are mainly salaried in comparison. To avoid competition between services from hospitals or from office-based specialists, the same national negotiated fee is imposed. However, when working in hospitals, the specialists allow the institutions to retain a proportion of the fees as compensation for the space, equipment, staff and additional services. The government sets the fees for GPs and specialists every two years following a bargaining process with all the concerned parties. Only non-conventioned can set their fees freely even if conventioned can, in some specific cases like activity outside core time for example, charge higher fees. The same principle applies to dentists, pharmacists and self-employed nurses. The remuneration gap between GPs and specialists is, however, particularly large in Belgium with GPs earning three times less than specialists even if some efforts have been made recently to decrease this gap. On example is the possibility for GPs to receive bonuses for the management of chronic diseases. Doctors' consultations per capita per year are higher than the EU average (7.6 vs. 6.8 in 2007).

Inpatient care is covered by the third-party payer system. The patient pays a co-payment while the bulk of the cost is directly paid by the sickness fund to the hospitals. For the hospitals' running costs, a national budget is set annually and paid to the hospitals via the sickness funds with an aim to make the hospitals accountable for their operations by means of financial rewards or fines. Hospitals are paid on a combination of: payment per case (45%), payment per procedure (41%) and payment for drugs (14%).[26] Hospital activity is very high, with hospital inpatient discharges slightly below the EU average (15741 vs. 16231 in 2007) but more than compensated by substantially higher than average number of day case discharges (11359 vs. 6120). Day case surgery has increased significantly in the last decade and the percentage of surgical procedures conducted as day cases (42%) is now much above the EU average (28%). From 1982, the "number of days" for an inpatient stay is subject to restrictions (pathology-weighted) to discourage hospitals to extend stays for financial reasons. Thanks to that kind of control procedure, Belgium has a hospital average length of stay below the EU average (respectively, 7.3 and 8 days in 2007). Alongside efforts to reduce the average length of stay, hospitals have promoted the application of day hospitalisation for oncology, paediatric and geriatric activities and other nonsurgical interventions.

Such figures may, however, hide differences in hospital activity between hospitals and between geographic areas. In this context, and given that a link between activity and funding is already in place, public comparisons and peer reviews are other mechanisms the authorities could use to encourage activity improvements in certain hospitals and areas. Information on quantity and quality (clinical outcomes) of providers is available and could be used for that purpose. Some suggest dropping the current link between the budget and the number of beds. Home care should be also

[26] According to the OECD, Belgium scores 5 out of 6 in terms of providers' incentive to increase the volume of care.

promoted for long-term disabled patients since it appears that Belgium is above the EU average in this area.

One of the key advantages of the Belgian system is that the precise price setting (flat rate) avoids unexpected fees for the patient. However, in hospitals, the patient's out-of-pocket contribution per day of hospitalization may vary if there are additional costs for a single room, non-reimbursable products or non-conventioned physicians.

**Pharmaceuticals**
About 2500 pharmaceuticals are reimbursable in Belgium. The initial price of reimbursed drugs is based on clinical performance, economic evaluation and cost of existing treatments, and looking at the average EU price. The amount reimbursed is determined by the pharmaceutical category that reflects the social importance of the drug, pharmacotherapeutic criteria and price criteria. The patient pays only the non-reimbursable amount as a co-payment to the pharmacy. Authorities also use reference pricing whereby the reimbursement level of a drug is based on the prices of drugs that have the same active ingredient.

The sickness funds negotiate as a cartel with the drug companies on reimbursement rates under the supervision of the central government. The central government can also as an extreme measure oblige pharmaceutical firms to pay a special tax when expenditures on pharmaceutics are too high (a sort of payback system). However, the main policy instruments to stem cost increases during the last decade have been price regulation and increases in co-payments.

Since 2001, the use of generics has been stimulated by introducing lower co-payments for the users and lower reimbursement levels for branded drugs when generics are available. Generic drugs must be at least 30% cheaper than originators. Doctors are encouraged to prescribe generic medicines through prescription quotas. Pharmacists are encouraged to provide the generic drug when available. Information on generics is provided to health professionals and to the public.

Authorities promote rational prescribing by physicians through compulsory guidelines and prescription quotas, complemented with monitoring of prescribing behaviour and education and information campaigns on the prescription and use of medicines. They also promote education and information campaigns for patients.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Monitoring and data collection has been widely implemented in the Belgian health-care system. Dedicated databases like Pharmanet, NMDS[27] or CMDS[28], allow the control of the medical practice of individual physicians (volume of activity, prescription activity) and whether it complies with treatment guidelines. It also enables among other things the monitoring of health problems and the epidemiological situation or the effectiveness and quality of hospital care. The global set of data is very wide even if the collection of data about voluntary private health insurance or about care and nursing homes could be improved.

The Health Care Knowledge Centre has played a major role in conducting and gathering information on health technology assessment since 2003. Health technology assessment information has been used to define guidelines and determine coverage and level of reimbursement of new procedures, new medicines and new high-cost equipment.

[27] Nursing Minimum Data Set.
[28] Clinical Minimum Data Set.

In Belgium, the communities and partially the federal state are responsible for prevention, promotion and education on health. In 2007, public expenditure on prevention and public health services as a % of GDP (0.4%) and as a percentage of total current health expenditure (4%) is above – double – the EU average. The most recent health promotion campaigns included; healthy eating, organ donation, deadly accident prevention, abuse of antibiotics, promotion of vaccinations and breast and cervical cancer screening. Vaccination rates for polio are high (99%) and have increased (94% in 1998). Screening rates for cervical and breast cancer are relatively high and have increased through the decade: 65.3% and 59% of the target population in 2006 and 2005 respectively (compared to 59.5% and 50% in 2000 and 2001).

# 8. Challenges

The analysis above shows that a number of reforms have been implemented over the years, to a large extent successfully (e.g. the policies to control pharmaceutical expenditure; to strengthen primary care; to reduce hospital use and increase hospital efficiency; to improve data collection and monitoring; and, to improve lifestyles), and which Belgium should continue to pursue. The main challenges for the Belgian health care system are as follows:[29]

- To continue to manage the supply of professionals, improving their geographical distribution and their accountability.
- To strengthen primary care including through the general application of the Global Medical File and the use of financial incentives to enable GPs to play a more central role in the system, controlling more effectively the use of specialist and hospital care and promoting/ coordinating health care with other forms of care such as home and community care.
- To continue efforts to reduce oversupply of beds for surgery, internal medicine and paediatrics by reorienting current supply towards facilities for elderly care. To promote peer reviews and comparisons between hospitals to identify good practices and areas for improvement to further increase hospital efficiency. To continue efforts to make hospitals more accountable by extending prospective budgets, fines and rewards. To pursue more integration between financing of hospital and of medical activity.
- To continue to promote generic pharmaceuticals by extending reference pricing schemes[30] and by rewarding physicians and pharmacists to promote their use.
- To explore strategies to rationalise and simplify administrative procedures more generally to reduce public expenditure on administration and insurance and improve system efficiency and quality.
- To reduce delays between medical innovation and inclusion in the public compulsory insurance coverage by simplifying the decision-making procedure.
- To continue and enhance health promotion and disease prevention activities i.e. promoting healthy life styles and disease screening given the recent pattern of risk factors (smoking, obesity, antibiotics abuse, cancer).

[29] The OECD overall efficiency score for Belgium is slightly below its group average (2.8 years can be gained through greater efficiency in the sector compared to the group average of 2.5 years) and slightly below the OECD average (2.3 years). Areas for improvement include: reconsidering government controls on labour, equipment and compensation levels; improve priority setting.

[30] Set fixed reimbursement limits of pharmaceuticals according to the "national generic pharmaceutical".

# Statistical Annex - Belgium[31]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 8.7 | 8.9 | 9.0 | 9.1 | 9.3 | 9.3 | 10.0 | 10.3 | 10.0 | 10.2 | 10.2 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1817 | 1952 | 2157 | 2229 | 2387 | 2462 | 2628 | 2764 | 2794 | 2927 | 3007 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 6.4 | 6.5 | 6.6 | 6.7 | 6.7 | 7.1 | 7.5 | 7.4 | 7.2 | 7.3 | 7.4 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 1326 | 1424 | 1585 | 1639 | 1718 | 1823 | 1967 | 1992 | 2020 | 2110 | 2182 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 7.7 | 8.1 | 8.4 | 8.7 | 8.8 | 8.8 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 20900 | 21900 | 24000 | 24500 | 25700 | 25600 | 26200 | 26900 | 27800 | 28800 | 28900 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | : | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | 1.5 | 1.6 | 1.4 | 1.5 | 1.4 | 1.4 | 1.4 | 1.3 | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | 2.2 | 2.3 | 2.9 | 3.1 | 3.2 | 3.9 | 4.0 | 4.2 | : | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | : | : | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | : | 1.6 | 1.6 | 1.6 | 1.6 | 1.7 | 1.8 | 1.7 | 1.6 | 1.6 | 1.7 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 0.7 | 0.7 | : | : | : | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | : | 12.1 | : | : | 12.7 | : | : | : | 13.8 | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 26.5 | 29.0 | 31.0 | 28.0 | 29.0 | 27.0 | 23.7 | 20.3 | 22.0 | 22.0 | 20.0 | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 10.0 | 10.2 | 10.3 | 10.3 | 10.7 | 10.7 | 9.8 | 9.7 | 9.7 | : | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 80.7 | 81.0 | 81.0 | 81.2 | 81.2 | 81.1 | 81.8 | 81.9 | 82.3 | 82.6 | : | 82.3 | 82.3 |
| Healthy life years at birth females | 65.4 | 68.4 | 69.1 | 68.8 | 69.0 | 69.2 | 58.1 | 61.9 | 62.8 | 63.7 | : | 62.3 | 61.6 |
| Life expectancy at birth males | 74.4 | 74.4 | 74.6 | 75.0 | 75.1 | 75.3 | 76.0 | 76.2 | 76.6 | 77.1 | : | 76.3 | 75.9 |
| Healthy life years at birth males | 63.3 | 66.0 | 65.7 | 66.6 | 66.9 | 67.4 | 58.4 | 61.7 | 62.8 | 63.3 | : | 61.5 | : |
| Infant mortality | 5.2 | 4.9 | 4.8 | 4.5 | 4.4 | 4.1 | 3.8 | 3.7 | 4.0 | 4.0 | 3.4 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 99.0 | 99.0 | 99.0 | 99.0 | 99.0 | 99.0 | 99.0 | 99.0 | 99.0 | 99.0 | 99.5 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 73.8 | 72.5 | 71.8 | 71.7 | 71.2 | 74.1 | 74.8 | 75.4 | 75.9 | 73.5 | 72.6 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 22.6 | 23.4 | 23.9 | 24.0 | 24.5 | 20.6 | 19.9 | 19.3 | 18.8 | 21.3 | 22.2 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | : | : | : | : | 0.6 | 0.6 | 0.8 | 0.7 | 0.8 | 0.5 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | 5.7 | 6.3 | 7.6 | 7.4 | 8.5 | 4.8 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | : | : | : | : | 0.5 | 0.6 | 0.7 | 0.7 | 0.7 | 0.4 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | 5.1 | 5.7 | 7.0 | 6.8 | 7.6 | 3.9 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 46.9 | 54.5 | 55.9 | 48.6 | 50.2 | 51.6 | 53.5 | 55.1 | 54.0 | 57.7 | 58.6 | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 373.1 | 378.6 | 385.0 | 389.6 | 393.6 | 398.8 | 399.5 | 401.2 | 400.8 | 401.6 | 297.0 | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 555.2 | 568.1 | 583.8 | 597.6 | 608.7 | 625.7 | 644.2 | 661.1 | 674.7 | 639.4 | 659.5 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 170.8 | 173.7 | 175.1 | 177.2 | 176.2 | 176.4 | 175.9 | 173.3 | 170.3 | 170.9 | 117.0 | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 485.8 | 477.4 | 472.6 | 465.8 | 460.1 | 451.7 | 448.3 | 441.1 | 435.6 | 429.7 | 425.2 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 7.9 | 7.9 | 7.9 | 7.8 | 7.8 | 7.8 | 7.6 | 7.5 | 7.5 | 7.6 | : | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | 16252 | 16162 | 15958 | 15963 | 15922 | 16084 | 15840 | 15741 | : | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | 8943 | 9834 | 10713 | 9335 | 9979 | 10497 | 10773 | 11359 | : | 6120 | 5031 |
| Hospital average length of stay | : | : | 7.7 | 7.5 | 7.4 | 7.7 | 7.6 | 7.5 | 7.4 | 7.3 | : | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | 35.5 | 37.8 | 40.2 | 36.9 | 38.5 | 39.5 | 40.5 | 41.9 | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | : | : | : | : | 426.2 | 467.2 | 455.0 | 441.7 | 460.8 | 505.0 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 138.0 | 152.2 | : | : | : | 226.1 | 243.2 | 246.6 | 242.0 | 259.4 | 291.0 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | : | 17.3 | 17.8 | 17.2 | 16.7 | 16.3 | 16.4 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 8.4 | 8.6 | : | : | : | 8.9 | 9.2 | 9.3 | 9.1 | 9.2 | 9.7 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | : | 0.1 | 0.2 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | : | : | 0.1 | 0.2 | 0.4 | 0.4 | 0.4 | 0.3 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | : | : | 1.3 | 1.7 | 3.7 | 3.7 | 4.1 | : | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | : | : | : | 1.3 | 1.7 | 3.7 | 3.7 | 4.0 | : | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 94.0 | 96.0 | 95.7 | 95.7 | 95.7 | 95.7 | 95.7 | 97.0 | 98.7 | 98.7 | : | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | 59.5 | 63.2 | 61.0 | 61.0 | 63.1 | 62.2 | 65.3 | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | 50.0 | : | 56.0 | : | 59.0 | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[31] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Bulgaria

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

Bulgarian GDP per capita is currently the lowest in the EU with 10400 PPS compared to the EU27 average of 25075 in 2008. The level has nevertheless increased considerably over the last decade, growing from 4600 in 1998. The global financial and economic crisis has had a strong impact on the Bulgarian economy as it resulted in a strong contraction of the economic growth (from 6.2% in 2007 to 6.0% in 2008 and -5.0% in 2009).[1] However, slow but steady recovery is expected to start already in 2010, with growth reaching 0.7% in 2010, and accelerating to 3.6% in 2011.[2]

**Recent trends of expenditure**

Health expenditure[3] in Bulgaria is slightly below the average[4] amount spent in the EU. In 2008, total spending amounted to 7.3% of GDP, compared to the EU average of 9.6%. Expenditure grew from 5.2% in 1998 to 7.8% in 2003 and 2005 and fell back over the last two years. Public spending has followed a similar trend, growing from 3.6% of GDP in 1998 to 4.9% in 2003 and decreasing afterwards to 4.2% in 2007 and 2008, well below the EU average of 7.4%. When measured in per capita terms, in 2008 Bulgaria had the second lowest total expenditure (659 PPS vs. EU average of 2381) and the lowest public spending (434 PPS vs. 1826 PPS in the EU27).

**The role of technology**

Total expenditure on pharmaceuticals is well above the EU average both when measured as % of GDP (2.4% vs. 1.5% in 2007), and when calculated as percentage of total current health expenditure (35.3% vs. 17.1% in 2007). However, public expenditure on pharmaceuticals is below the EU average both when measured as % of GDP (0.5% vs. 1% in 2007), and when calculated as percentage of total current health expenditure (7.2% vs. 11.5% in 2007). This denotes a high share of private expenditure on pharmaceuticals.

While overall total and public expenditure is lower than the average when looking at diagnostic and therapeutic units, the density of CTS units (2.2 in 2008) and angiography units (0.7 in 2007) per 100000 inhabitants was respectively higher and about the EU average (1.9 and 0.7 per 100000 inhabitants). The number of MRI units (0.3 per 100000 inhabitants) is still considerably lower than the EU average (1 in 2007).[5] The numbers and their increase probably relates to a national effort to replace outdated equipment and improve the quality of care provided. However, given the size of the public health budget, it may be useful to carefully consider each further addition to the existing high-cost equipment and whether they are cost-effective.

**Health status and healthy behaviour – life-styles – risk factors**

Bulgarian population lives considerably shorter than the average European citizens. Life expectancy of both women (77 years) and men (69.8 years) is significantly below the EU averages of 82.2 and 75.8 years in 2008. Healthy life years (65.5 years for women and 61.9 years for men in 2008) are actually above (for women) and about (for men) the EU average (respectively, 62.3 and 61.5 years).

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1 European Commission (2010), European Economic Forecast – Spring 2010.

2 According to the macroeconomic framework underpinning the 2011 Budget Report.

3 Data on health expenditure is taken from WHO health data and Eurostat database. From 2003, the variables total and public expenditure used here follow the OECD definition under the System of Health Accounts and include HC.1-HC.9 + HC.R.1.

4 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

5 Data on equipment comes from Eurostat database.

However, Bulgaria has one of highest premature mortality rates[6] in the EU, and is especially high in the case of men: 215.5 deaths for females (0-64 years) and 521.5 deaths for males (0-64 years) per 100 000 inhabitants in 2008, vs. the respective EU averages of 139.2 and 293.2.[7]

In 2008, the main non-communicable diseases[8] accounted for about 84.6% of all deaths in Bulgaria (64.7% were caused by the diseases of the circulatory system and 16.4% by cancer; external causes accounted for 3.5% of the deaths). Mortality rates place Bulgaria in the upper part of the European countries. For both males and females, the largest difference in mortality rates between Bulgaria and the other EU countries is found in the youngest population, below 15 years of age. Indeed, infant mortality at 8.6‰ (2008) is still among the highest in the EU (twice as high as the EU average of 4.3‰) despite a dramatic decrease over the recent decade from 14.4‰ in 1998. Previous National Strategy Reports on social protection and social inclusion emphasise the poor health status (shorter life expectancy at birth and communicable diseases) of the Roma population.

### Behavioural Health Risk Factors[9]

#### 1. Tobacco smoking

In 2007 almost every second respondent smoked (52.4% of men and 38.1% of women). The shares of regular smokers were respectively 46.6% for men and 32.7% for women. Male regular smokers were more numerous than female ones in all age groups. Male regular smokers smoked most at the age of 35-44 years, while female smoked most at the age of 25-44 years. The shares of moderate smokers were respectively 23.2% of men and 47.2% of women. The shares of intensive smokers were 56.3% of men and 45.9% of women, while the shares of heavy smokers were 20.5% of men and 7.0% of women. Every fifth regular smoker reported elevated arterial pressure, and every second an increased BMI. The Flash Eurobarometer "Survey on tobacco - analytical report" of March 2009 indicated that the share of smokers was 38-39% of the population ranking Bulgaria second after Greece for the share of regular smokers in the population. The Eurobarometer publication of May 2010 shows no different picture – the share of smokers was 39%. The 2008 Eurostat and National Statistical Institute (NSI) European Health Interview Survey[10] shows that at the end of 2008 the shares of regular smokers were 40.5% of men and 18.9% of women. The shares of occasional smokers were 9.8% of men and 9.3% of women. The shares of non-smokers were 49.7% of men and 71.8% of women. These results and those from the 2007 Bulgarian survey show that smoking has become less prevalent among both men and women, especially among women. These data are supported by the fact that the average level of monthly cigarette consumption for 2007 was 71.2 cigarettes per capita falling to 58 in the first quarter of 2010.

#### 2. Dietary Habits

One in three people had meals once or twice daily; half of interviewees either had no breakfast or had it only. The intake of unhealthy vegetable and animal fat and salt was above the healthy limit. There was insufficient intake of milk (fresh/yogurt), milk product and meat intake, fish and vegetables. The majority of interviewees consumed white bread. Other bread brands (wholemeal, wholegrain, rye, dietetic, etc.) were rarely preferred. Every second male and every third female consumed no fresh fruits or consumed them rarely; every fourth male and female consumed no fresh vegetables or consumed them rarely. One third of interviewees were overweight and 13% obese.

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6 Defined as standardised mortality rates all causes, for those aged 0-64.

7 Data on life expectancy, healthy life years, premature mortality and infant mortality is from the Eurostat database.

8 Source: NCPHP, Health of the Nation's report, 2009.

9 2007 data in this section is reflected in the National Behavioural Risk Factor Survey Among Population Aged 25-64, 2007, Bulgarian Journal Of Public Health, Supplement,Vol.1, (1).

10 More EHIS data could be found on http://www.nsi.bg/otrasalen.php?otr=43.

### 3. Physical Activity

Over 80% of interviewees declared low physical activity in their free time. 74.6% of interviewees declared no physical exercise and only 6.4% of the interviewees reported doing exercise 2-3 times per week and predominantly younger ones. The incidence of vigorous and moderate physical activity was low throughout the week. Its duration was 31-60 minutes for barely 3.6% of the interviewees. On an average daily basis, almost every second interviewee spent sitting 120-300 minutes and more (44.3% of females and 33.9% of males), a rate that was higher in the cities. A considerable share of interviewees reported high arterial pressure and elevated serum cholesterol coupled with low physical activity during their free time. More than half of them were overweight or obese.

### 4. Alcohol Consumption

In 2007 more than 60% of respondents consumed alcohol, with a higher share among urban inhabitants. 23.2% of respondents reported being regular alcohol users were (39.5% of men and 7.3% of women). Men and women showed highest rates at the age of 35-44 years and 45-54 years respectively. Every seventh respondent declared daily alcohol consumption, with men being five times more numerous than women (19.8% vs. 3.8%). The highest alcohol consumption was registered by men aged 45-54 years in rural areas. 30.7% of men and 62.4% of women never or rarely consumed alcohol. 5.8% of men and 2.2% of women declared daily wine consumption, a behaviour more common to villages by predominantly men aged 55-64 and women aged 45-54 years. 21.5% of men (in predominantly groups up to 54 years) and 6.5% of women (mostly in the group aged 45-54) declared hazardous and high risk weekly consumption The percentage of men consuming alcohol over permissible limits was higher in villages, while of the percentage of women was higher in the cities. Hazardous and high risk weekly alcohol consumption was combined with higher arterial pressure and increased BMI. The Special Eurobarometer publication "Attitudes towards alcohol" of March 2007 reported that 25% of Bulgarians drank less than one alcoholic drink daily. The Special Eurobarometer publication "European Citizens' Attitudes towards Alcohol" of April 2010 reported that 91% of Bulgarians were likely to have consumed alcoholic drinks in the preceding 30 days. 91% of respondents were aware of the increased risk of heart diseases and 78% of the increased risk of depression resulting from drinking. The 2008 Eurostat and NSI European Health Interview Survey showed that, at the end of 2008, 69.6% of respondents consumed alcohol (83.1% of men and 56.9% of women). 37.9% of Bulgarians (43.9% of men and 23.3% of women) drank 6 or more alcoholic drinks (so-called binge-drinking). Generally, in comparison to 2007 alcohol consumption grew a little but considerably more women reported alcohol consumption.

## 2. Expenditure prospects: population ageing and future health status

The Bulgarian population is projected to shrink from 7.6 million in 2008 to 5.5 million in 2060. Life expectancy is projected to grow by 11.9 years for men and 9.8 years for women, making Bulgaria a country with one of the fastest growing longevity in Europe (compared to the EU27 average of 8.5 and 6.9 years respectively). Bulgaria is expected to be affected by the ageing process to a degree comparable with the other European countries. The share of the old population (65+) is expected to increase by 16.9% (from 17.3% to 34.2%) and the share of the very old (80+) by 9.3% (from 3.6% to 12.8%).

Driven by the change in demographic structure, public spending on health care is projected to increase by 15% or 0.7 pps of GDP, considerably less than 25% average increase in the EU (or 1.7 pps).[11] A relatively limited growth in health care spending, together with low expected increase in

[11] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).

the other age-related items of public expenditure and the relatively favourable current budgetary stance, results in low risk for the long-term sustainability of Bulgarian public finances.

# 3. Health care coverage and expenditure

A system of mandatory social health insurance (Health Insurance Act, 1998) provides coverage for the residing population. The National Health Insurance Fund (NHIF) pools the compulsory social health insurance wage-related contributions of employed individuals and the general tax revenue allocated by the government and which covers for the contributions of the non-working population (pensioners, unemployed, people taking care of disabled members of the family, people with right to social welfare, etc). The NHIF then contracts health services from general practitioners (GPs), specialists in outpatient departments and hospitals for the insured population. In addition, on the basis of general taxation, the Ministry of Health makes direct payments for hospital capital expenditures and operational and administrative costs of other public health-related facilities, national health control programmes (a defined set of life-support and life-saving drugs, vaccines and consumables for health facilities, health prevention activities and diagnostics services).

Despite the mandatory nature of social health insurance, a significant number of population (965 000 in 2008 or 12.67% of those registered with a GP[12])[13] do not benefit from health insurance, because they do not pay contributions and at the same time are not entitled to social assistance (in which case the government would pay). Health contribution compliance collection relatively improved (in 2008 it was 14.5% higher than planned). Contribution compliance collection depends on contribution revenues – with a strong link to the demographic situation, characterized by ageing and emigration – and on a limited scope of insured people – due to informal employment and the comparatively high share of informal economy.

Moreover, while the state provides free, universal access to emergency health care, private expenditure plays an important role in financing health care in Bulgaria. In 2008 it accounted for 42.2% of total health expenditure, compared to the EU average of 22.7%. Those payments cover mostly drugs and dental services. Private expenditure is mostly in the form of out-of-pocket payments (36.5% of total health expenditure), with about 5.7% of total expenditure being then financed from other private sources, including voluntary health insurance. The use of the latter is spreading comparatively slowly, with the number of voluntary health insurance companies having reached 21 in 2009.[14]

Out-of-pocket payments take three main forms: direct payments, cost-sharing and informal payments. Direct payments in Bulgaria (payments for goods and services that are not covered by any form of health insurance) include payments for specialist services without a GP referral, payments to the institutions that do not have a valid contract with the NHIF (even if the patient has been referred by a GP), or payments for services that exceed the usual benefit package (such as luxury hospital hotel services or plastic surgery). Cost-sharing happens when patients pay a flat mandatory fees for visits to a GP, a specialist or a health diagnostic laboratory covered by the NHIF (1% of the minimum monthly salary) and for hospital stay (2% of the minimum monthly salary per day of hospitalisation, up to 10 bed-days per year). Cost-sharing also applies to outpatient medicines, except for treatment of chronic diseases. Life-saving drugs and the treatment of certain diseases such as cancer, diabetes and genetic diseases are free of charge. A large number of patients (up to 50% according to some surveys) report making informal payments in order to decrease the waiting time for services, to access a specialist without a timely GP referral, or to secure better

[12] I.e. 7 615 000.

[13] Source: NCPHP, Health of the Nation's report, 2009.

[14] Source: 2009 Analysis of the Competitive Environment of the National Voluntary Health Insurance Market, Commission on Protection of Competition.

conditions or better service quality in hospitals. However, persistent informal payments (which are not adjusted to individual socio-economic characteristics) can negatively impact on access.

To ensure access to those more vulnerable, the government exempts certain groups (e.g. children, unemployed, people with salary below a given threshold and chronically ill) from the payment of such fees as well as paying for their mandatory health insurance contributions and providing a specific health benefit for hospital admission.

In general, consumer spending on health services and goods increased by 21.4% in real terms between 2004 and 2009, as incomes grew and Bulgarians faced the need to compensate for the deficiencies of state-funded healthcare. High consumer spending on healthcare takes away from potential spending elsewhere: in 2009, Bulgarians devoted 4.1% of their consumer spending to healthcare, compared to an average of 3.7% in EU countries.

# 4. Collection, pooling and allocation of financial resources

Bulgaria has a mixed system of health care financing. The Bulgarian health care system is financed from three main sources: compulsory health insurance contributions, general taxation, and household private expenditure. There is also some external funding. In 2008, public expenditure accounted for 57.8% of total health expenditure, out-of-pocket expenditure was 36.5% of total health expenditure and around 5.7% from other private sources, including voluntary private health insurance.

General taxation is non-earmarked revenue, coming from central (income tax, corporate tax, value-added tax) or municipal budget sources and a number of public agencies operating in the field of public health. The taxation revenue is pooled by the National Revenue Agency. In the area of health care taxation it is used for the direct funding of some expensive pharmaceuticals, state-funded hospitals and for the implementation of national programmes and to pay for the contributions of the non-working population.

Since 2009, income-based compulsory health insurance has amounted to 8% of the payroll divided 60:40 between the employee and the employer. The contributions are collected by the regional branches of the National Revenue Agency which pools them and allocates to the accumulation account of the National Health Insurance Fund (NHIF), which in turn distributes the funds to the Regional NHIFs. There is no resource distribution formula accounting for the needs of regions with lower income and/or poorer health status.

Over the recent decade, the share of insurance contributions in total spending has constantly grown, while that of general taxation decreased. In 1999, taxation contributed to total spending with a 58.9% share, while compulsory insurance accounted for a 6.5% share. Over 4 years, the shares equalised. In 2003, 26.4% came from taxation and 28.1% from insurance contributions. In 2007, of the 58.2% public share, the Ministry of Health financing accounted for 25%, the National Health Insurance Fund (NHIF) contributions for 60%, municipal financing for 7% and other sources for 8%.

There are regulations in Ordinances issued in accordance with the Law on the State Budget and the Law on the NHIF Budget including global budgets, sanctions and penalties for overspending, supervision on side activities, monthly and quarterly reporting requirements.

Total expenditure on administration and insurance as a percentage of GDP is below the EU average (0.1% vs. 0.4% in 2007) and so is public expenditure on administration and insurance as a percentage of GDP (0.1% vs. 0.3% in 2007). Total and public expenditure on administration and

insurance as a percentage of total current expenditure on health are also below the respective EU averages (4.6% and 3.3% in 2007). This suggests that the system is not expensive to run, despite the use of several sub-national administrative levels involved in either the collection or the purchasing of services. Nevertheless, given the size of the public budget allocated to health and the current economic situation it may be worth exploring if there are gains to be made in terms of administrative costs associated with the collection and distribution of funds.

# 5. Providers status, referral systems and patient choice

Primary care is provided by GPs working in private practices, group practices and in outpatient departments. The citizens have free choice of GPs, whom they can change once every six months. GPs are being legally assigned the function of gatekeepers, referring patients to the specialists and hospitals. The only cases when no referral is necessary are the visits of pregnant women and women with children to gynaecologists and paediatricians. The number of patient referrals to specialists is limited for each GP and predefined for a month, based on the patient lists and previous month's performance.

Facilities which provide specialized ambulatory care include individual or group practices for specialised medical care within separate medical subfields; health centres; diagnostic consultation centres (containing at least 10 physicians in various specialities); laboratory and image diagnosis centres; or individual medical and diagnostic or technical laboratories.

In 2008, the number of physicians was 27 480 half of them (50.0%) working in in-patient health establishments. The density of physicians in Bulgaria slightly exceeds the average density in the EU. In 2008 there were 361 practising physicians per 100 000 inhabitants, compared to 324.1 in EU27. However, Bulgaria has very low number of general practitioners (65.2 per 100 000 inhabitants vs. 92.2 in 2007 in the EU). The number of nurses per 100 000 inhabitants (466.5 in 2007)[15] is much below the EU average of 830. The availability and quality of health services varies across the country and needs substantial improvements in non urban areas.

Such a skill-mix and an unequal distribution of physicians across the regions, risks creating obstacles to an effective provision and use of primary care, resulting in bottlenecks and limiting the effectiveness of the system and leading to strong inequities in access to health care. Shortages of GPs can lead to high waiting times to visit GPs and therefore individuals skip the referral system and go straight to hospital, making unnecessary use of (free) emergency care. To implement a well-functioning referral system and choice requires continuing the efforts so far to change the skill mix and improve the distribution of primary care across the country and perhaps increasing the possibility to access primary care / GPs after normal office hours (although office hours are already long compared to other countries). Additional sums are disbursed by the NHIF to practitioners providing services in rural areas.

Hospital care in Bulgaria is provided by public and private health establishments. According to the law, hospitals are divided into multidisciplinary and specialized hospitals. National multidisciplinary and specialised hospitals are trading corporations owned by the State. Interregional and regional hospitals are joint-stock companies: one part is owned by the State, with the rights being exercised by the Minister of Health, and the other part by the local municipality, with the rights being exercised by the respective municipal council. Local hospitals are trading corporations owned by the municipalities.

[15] 422.0 when we exclude midwives.

Similarly to the number of physicians, hospital capacity exceeds EU averages. In 2008, the number of hospitals was 305 and the number of acute care beds was high compared to the EU (499.8 compared to 383.2 per 100000 inhabitants in the EU27 in 2008). Further reducing hospital capacity, increasing bed occupancy rates and bed turnover rates, increasing the number of day case surgery and outpatient cases, and concentrating high-tech complex care in a few facilities (centres of excellence) are perhaps areas where further improvements can be made (see further).

Public (equal to total) capital expenditure at 4.7% of total health expenditure in 2008 was slightly higher than the EU average (2.5% and 4.1% in 2008), and it shows an increase from 2003 (2.8%). These values are perhaps a result of the efforts to modernise care facilities and improve quality of care. However, for a country publicly spending a relative small percentage of their GDP on health, it may be worth to carefully consider what type of infrastructure and high-cost equipment can be cost-effective. In this view, EU funding will be mostly used for purchasing hospital equipment according to outlined health priorities.

# 6. Purchasing, contracting and remuneration systems

Bulgarian health care providers are mainly reimbursed prospectively on a per-case and per-capita basis. Actual payment rates are agreed in the contract with the NHIF beforehand.

Primary health care providers are reimbursed by the NHIF on a contractual basis according to the National Framework Contract. The contracts are based on monthly per-capita payments per insured person on the patient list. They also may include additional payments for additional procedures, such as preventive health, immunization, regular medical check-up. Moreover, those working in sparsely populated and remote areas receive an additional per-capita remuneration combined with periodic balancing. Primary care providers who do not have a contract with NHIF and those who receive patients who are not health insured or not on their lists, are paid fee-for-service, either out-of-pocket by the patients themselves (in the former case) or by the patients and/or NHIF (in the latter case).

Outpatient specialists are paid on a fee-for-service basis with different rates depending on the service provided.

Hospitals receive funding mainly through case-based payments (or payments per clinical pathway), based on a single flat rate per pathway combined with global budgets. The flat rate is calculated according to the cost of medical activities, auxiliary services provided to patients and up to two outpatient examinations following the patient's discharge. The individual hospital's contract with the NHIF defines the maximum amount for cases. These can be increased by 20% during the period of the contract, but the reimbursement per case is respectively lower for cases above the contracted threshold.

The institutions which are financed from the state budget (mainly state psychiatric hospitals and health and social care children's homes) follow different procedures and are paid per diem by the Ministry of Health.

The mechanisms for paying staff employed in inpatient care institutions vary according the type of the institution and generally the combinations of various payment methods are used. In the public inpatient sector health personnel are mostly salaried with additional performance-related bonuses. The contribution of individual doctors to hospital performance is determined using qualitative and quantitative criteria established at the institution level. However, in order to guarantee the functioning of this performance incentive and prevent hospital managers from allocating the funds

to the other purposes, the total amount of bonuses cannot be lower than a predefined proportion (set by each hospital) of the entire budget allocated to salaries in the institution.

In private hospitals, payment mechanisms are directly negotiable between the employer and the employees under labour contracts for different personnel categories. The threshold for the budget allocated for performance-related bonuses applies also for the private hospitals working under contract with the NHIF.

Hospitalization rate is 22.34%.[16] The number of hospital inpatient discharges (21665.4 per 100000 inhabitants in 2008) is higher than EU average of 16230.5 in 2007) although the average length of stay is shorter (6.7 vs. 8 days). Increasing the share of day case surgical interventions will be an important policy priority for the future.

**Pharmaceuticals**

Drugs to be reimbursed by the NHIF are listed on the Positive Drug List, grouped under the anatomical-therapeutic-chemical code. The products included in the list are both trade names and international non-proprietary names (INN) by dosage forms. The drugs are classified in three categories according to the incidence, disability and morbidity of the diseases they are treating. According to the category, they are reimbursed in 100% or in 75%. Drugs on the list are reimbursed based on reference pricing (maximum value per unit of substance). The value of a unit of substance is the lower of two possible values: either the value according to the previous National Framework Contract negotiation or the average arithmetic value covered by public health insurance funds in eight reference countries (EL, HU, LV, PL, RO, SK, SI, CZ). The maximum value per unit of active substance represents the reference price for all drugs of the same group. Until 2009 there was a widespread practice of pharmacies selling prescription medicines as over the counter (OTC) products, which was stopped by a change in the regulations, stricter controls and higher fines.

Bulgaria has no explicit legislation regarding generics, but has a policy to promote them. GPs may prescribe pharmaceuticals covered by the National Health Insurance Fund. They put a special symbol allowing pharmacists to make generic substitution. In its Healthcare Development Programme, the Bulgarian government outlines ideas for achieving balance between generic original products and innovative generic products. The authorities who decide whether an innovative product will be paid through public funds should observe certain criteria such as: recognizing the importance of the disease concerned, taking into account the degree of innovativeness of the product, etc.

# 7. Information and monitoring, use of cost effectiveness and health promotion

A system of accreditation of medical facilities is being organized by the Ministry of Health, with the participation of the NHIF, the Bulgarian physicians', dentists' and patients' associations. In addition, a system for medical audits and monitoring is being established by an executive agency, responsible for developing uniform criteria for assessing the efficiency and effectiveness of health care services. The use of information and communication technologies (ICT) is growing in the Bulgarian health system. A national health portal (www.elak.bg ) was launched in March 2009 as part of an e-health programme, allowing for patient records to be accessed online by health professionals. The government plans further e-health tools to be introduced in 2010-2012.

There is no mechanism for technology assessment although this would require additional administrative capacity and scientific know-how, which may be lacking. Therefore, cost-

[16] NCPHP, Health of the Nation's report, 2009; Statistics of the NCHI, www.nchi.government.bg.

effectiveness knowledge is used in a limited way to determine the benefit package, the extent of cost-sharing or develop treatment guidelines to harmonise and rationalise medical practices. There is no mechanism to control the introduction of new technology in the health sector. Decisions on the purchase of new equipment are left to the municipalities and other owners of health facilities. This may explain both the relatively high number of some high-cost equipment and the observed regional variation in availability.

As section 1 highlights, there are a number of risk factors to health that deserve attention and action. Nevertheless, total (0.3%) and public (0.3%) expenditure on prevention and public health as a % of GDP are respectively about and above the EU average (respectively 0.3% and 0.2% in 2007). Total (4.1%) and public (3.7%) expenditure on prevention and public health as a percentage of total current health expenditure are higher than the EU average (respectively 2.7% and 2.2% in 2007). Vaccination rates (95.8% for polio in 2008) are about the EU average (96%), but slightly lower than in 1980s.

# 8. Challenges

The analysis above shows that a range of reforms have been implemented over the years to increase the efficiency in the sector while trying to ensure the access of those more vulnerable. However, there may be room for improvements in a number of areas. The main challenges for the Bulgarian health care system are as follows:

- To guarantee the universality of health care coverage, by spreading coverage rights to the social groups previously excluded; improve regulation of the health services market to limit the size of informal health care payments and reduce the role of out-of-pocket payments in total expenditure as a highly regressive method of financing. These would contribute to reduce the inequalities in access to and quality of health care among social groups and regions.
- To improve the basis for more sustainable and efficient financing of health care in the future (e.g. considering additional sources of general budget funds), with a better balance between resources and demand, between the number of contributors and the number of beneficiaries between costs and effectiveness, costs and quality performance. This can reduce the size of private payments and reduce inequalities in the access and quality of care and its distribution between population groups and regional areas.
- To continue to enhance and better distribute primary health care services to improve effectiveness and efficiency of health care delivery. In the future, developing electronic patient records can help ensuring effective referral systems from primary to specialist care and improving care coordination between types of care.
- To increase the primary care staff supply by implementing a comprehensive human resources strategy that adjusts the training of doctors to ensure a balanced skill-mix, that avoids staff shortages and that motivates and retains staff to the sector, especially in view of migration. In addition, increase the primary care supply by establishing financial and institutional incentives for GPs based on quality indicators, performance-based reporting and payment bonuses.
- Increase the hospital care efficiency by reducing the excessive capacity of hospitals and improving hospital activity management.
- To consider additional measures to control pharmaceutical expenditure such as information and education campaigns to encourage good prescribing practices, the monitoring of prescription of drugs and a more explicit policy on generics (using legal regulations for doctors and pharmacists and financial incentives for users). Savings could help increasing

coverage of other medicines and reducing the high private expenditure and informal market in this area.

- To continue to improve the systems for data collection and monitoring of inputs, processes, outputs and outcomes so that regular performance assessment can be conducted. Promote the use of ICT in the gathering, storage, use and exchange of health information.
- To gradually increase the use of cost-effectiveness information in determining the basket of goods and the extent of cost-sharing.
- Foster public action in the area of health promotion and disease prevention on the basis of the defined public health priorities and (diet, smoking, alcohol, lack of exercise) and given the recent pattern of risk factors. Activities can include the enforcement of the adopted smoking ban and health education in schools and health centres. Taxes on tobacco, alcohol and soft drinks, stricter regulation of tobacco advertisement and labelling as well as stricter road safety measures are some of the measures that can encourage better life-styles.

# Statistical Annex - Bulgaria[17]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 5.2 | 6.0 | 6.1 | 7.2 | 7.4 | 7.8 | 7.5 | 7.8 | 7.2 | 7.3 | 7.3 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 238 | 288 | 322 | 410 | 468 | 526 | 547 | 600 | 612 | 659 | 659 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 3.6 | 3.9 | 3.7 | 4.0 | 4.4 | 4.9 | 4.6 | 4.7 | 4.1 | 4.2 | 4.2 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 165 | 187 | 196 | 228 | 278 | 306 | 332 | 366 | 355 | 396 | 434 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 4.8 | 5.0 | 5.1 | 5.4 | 5.5 | 5.4 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 4600 | 4800 | 5300 | 5800 | 6300 | 6700 | 7300 | 7800 | 8600 | 9400 | 10400 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | : | : | : | 0.3 | 0.3 | 0.3 | 0.3 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | : | : | 1.6 | 1.7 | 1.9 | 2.2 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | : | : | : | : | : | 2.8 | 2.6 | 2.6 | 2.6 | 2.4 | : | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | : | : | : | : | : | 0.8 | 0.6 | 0.6 | 0.6 | 0.5 | : | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | : | 12.4 | : | : | : | : | : | : | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | : | : | : | 32.7 | : | : | : | : | : | : | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 8.1 | 7.9 | 10.8 | 11.7 | 11.1 | 11.5 | 11.3 | 10.9 | : | : | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 74.6 | 75.0 | 75.0 | 75.4 | 75.5 | 75.9 | 76.2 | 76.2 | 76.3 | 76.7 | 77.0 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | : | : | : | : | : | : | : | 73.8 | 65.5 | 62.3 | 61.6 |
| Life expectancy at birth males | 67.4 | 68.3 | 68.4 | 68.6 | 68.8 | 68.9 | 69.0 | 69.0 | 69.2 | 69.5 | 69.8 | 76.3 | 75.9 |
| Healthy life years at birth males | : | : | : | : | : | : | : | : | : | 67.0 | 61.9 | 61.5 | : |
| Infant mortality | 14.4 | 14.6 | 13.3 | 14.4 | 13.3 | 12.3 | 11.6 | 10.4 | 9.7 | 9.2 | 8.6 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | : | : | : | : | : | : | : | : | : | : | : | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 69.1 | 65.6 | 59.6 | 56.3 | 59.2 | 62.1 | 60.8 | 60.9 | 57.0 | 58.2 | 57.8 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 30.9 | 34.4 | 40.4 | 43.7 | 39.8 | 37.0 | 38.2 | 37.9 | 41.8 | 40.6 | 36.5 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | : | : | : | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | : | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | 1.4 | 1.5 | 1.6 | 1.5 | 1.2 | : | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | : | : | : | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | : | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | 1.4 | 1.5 | 1.6 | 1.5 | 1.2 | : | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | : | : | : | : | : | : | : | : | : | : | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 346.0 | 345.0 | 337.8 | 344.5 | 352.9 | 360.6 | 353.1 | 365.0 | 365.7 | 364.9 | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | : | : | 437.0 | 421.8 | 407.1 | 424.4 | 427.6 | 449.4 | 456.1 | 466.5 | : | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | : | : | : | : | 67.5 | 68.6 | 69.1 | 67.8 | 66.8 | 65.2 | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | : | : | 586.1 | 575.3 | 518.1 | 484.3 | 471.4 | 492.6 | 475.8 | 490.6 | 499.8 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 5.5 | 5.4 | : | : | : | : | : | : | : | : | : | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | : | : | : | 19852 | 20015 | 20920 | 21665 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 6120 | 5031 |
| Hospital average length of stay | : | : | : | : | : | : | : | 8.3 | 7.5 | 7.2 | 6.7 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | : | : | : | : | : | : | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | : | : | : | : | 189.2 | 189.8 | 200.6 | 224.4 | 228.8 | : | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | : | : | : | : | : | 51.4 | 45.2 | 44.3 | 47.1 | 46.8 | : | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | : | 37.0 | 35.6 | 34.3 | 36.8 | 35.3 | : | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | : | 10.1 | 8.5 | 7.6 | 7.7 | 7.2 | : | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | : | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 | : | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | : | : | 0.3 | 0.3 | 0.2 | 0.2 | 0.3 | : | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | : | : | 3.6 | 4.0 | 3.1 | 3.5 | 4.1 | : | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | : | : | : | 3.5 | 3.6 | 2.8 | 3.1 | 3.7 | : | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 96.5 | 97.2 | 94.4 | 94.4 | 94.4 | 96.0 | 94.1 | 96.6 | 96.1 | 95.0 | 95.8 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | : | : | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[17] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Czech Republic

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

Despite a post-accession economic growth of around 6% on average between 2004 and 2007, the gap between the Czech (20200 PPS in 2008) and the EU average GDP per capita (25075 PPS) has only been slightly narrowing down over the last decade (12000 PPS vs. 17584 PPS in 1998). The adverse impact of the economic and financial crisis on the Czech economy has been very strong (with a considerable GDP growth slowdown, from 6.1% in 2007 to 2.5% in 2008 and -4.2% in 2009), and a muted but gradual recovery is expected in the years to come (1.6% in 2010 and 2.4% in 2011).[1] Whereas the 2009 trend showed some increase in social transfers, and in particular rising healthcare expenditure, the fiscal consolidation initiated in 2010 to bring government revenues and spending into line in the coming years[2] may therefore have consequences for the health sector.

**Recent trends of expenditure**

In 2008 total expenditure on health[3] in the Czech Republic amounted to 7.1% of GDP, up from 6.6% in 1998, but down from 7.4% in 2003 (peak year). This is considerably below the EU average[4] of 9.6%. The same observation can be made about the public expenditure on health care (5.9% of GDP, well below the EU average of 7.4%). Also when measured in per capita terms, both total and public health care expenditures are well below the EU average: 1456 PPS vs. 2381 PPS and 1202 PPS vs. 1826 PPS respectively in 2008.

**The role of technology**

The Czech health care sector is slightly less equipped than the other European countries in diagnostic and therapeutic units. In 2007, the numbers of MRI units (0.44), CTS units (1.3) and PET scanners (0.06) per 100 000 inhabitants were well below the EU average (0.98, 1.9 and 0.13, respectively), while only angiography units were about the EU average (0.7 vs. 0.68 per 100 000 inhabitants).

Total (1.5%) and public (0.9%) expenditure on pharmaceuticals[5] as a percentage of GDP was about the EU average in 2008, while the share of total (20.9%) and public (12.9%) pharmaceutical expenditure in total current health expenditure are somewhat higher than the EU average (respectively 16.9% and 11.2% in 2008).

**Health status and healthy behaviour – life-styles – risk factors**

The health status of the Czech population quite compares to the average EU figures. Life expectancy[6], both of women (80.5 years) and of men (74.1 years), has constantly improved over the last decade but remains below the EU average (respectively 82.2 and 75.8 years in 2008), while healthy life expectancy exceeds the EU average for women (63.2 vs. 62.3 years in 2007) and is about the EU average for men (61.3 vs. 61.5 years in 2007). Note that infant mortality of 2.8‰ (2008) is among the lowest in the EU, well below the EU average of 4.3‰.

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1 European Commission (2010), European Economic Forecast – Spring 2010.

2 The Czech Republic is indeed committed to reduce the budget deficit below 3% by 2013.

3 Data on expenditure is taken from OECD health data and Eurostat database.

4 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

5 Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.

6 Data on life expectancy and healthy life years is from the Eurostat database.

Non-communicable diseases are the leading causes of morbidity and mortality. The three most frequent causes of death are: circulatory system diseases, neoplasms and external causes resulted in 83% of all deaths.[7] The standardised death rates for the two first conditions are well above the EU averages.

The lifestyle-related risk factors are more prevalent than in the other EU countries. Percentage of obese population (17.1% in 2008), percentage of regular smokers (24.3% in 2008) and alcohol consumption (12.1 litres per capita) are all above the respective EU average numbers. These values on the health status of the population deserve attention and action to improve population life-styles, to protect their health outcomes and reduce the burden of disease.

# 2. Expenditure prospects: population ageing and future health status

The Czech population is projected to decrease by 800 000, from 10.3 million in 2008 to 9.5 million in 2060. Life expectancy is projected to grow by 9.3 years for men and 7.7 for women, i.e. somewhat faster than the EU average of 8.5 years and 6.9 years respectively. Czech Republic is expected to be strongly affected by the ageing process. The share of the old (65+) is expected to more than double (from 14.6% to 33.4%), which represents an increase of 18.7 pps, while the share of the very old (80+) is expected to increase almost fourfold, by 10 pps (from 3.4% to 13.4%). Both are above the EU expected average increases of 13 pps and 7.8 pps respectively.

As a result of ageing[8], health care expenditure is projected to increase by 2.3 pps of GDP (much above the EU average change of 1.7 pps). Good health (translated by a constant health scenario) could reduce the projected expenditure increase to 1.1 pps, highlighting further the importance of improving health behaviour. Such a large projected growth in health care spending, together with considerable expected increase in the other age-related items of public expenditure and the unfavourable current budgetary stance, results in high risk for the long-term sustainability of Czech public finances.

# 3. Health care coverage and expenditure

The Czech health care system is a compulsory social health insurance (SHI) system covering practically the entire population. Entitlement to coverage is based on permanent residence rather than SHI contributions, and each person must be covered either through a SHI, a foreign social insurance system or a private health insurance. The range of coverage is very broad and includes "any medical treatment delivered with the aim of maintaining or improving an individual's health status". In practice the benefits are rationed at the point of use by the provider, based on four factors: the negative lists of procedures and services excluded from reimbursement; the positive lists of approved pharmaceuticals, medical aids and dental aids that may be reimbursed (together with the depth of coverage); the annual negotiation process between health insurance funds and health care providers resulting in establishment of specific conditions of reimbursement attached as amendments to the existing long-term contracts between them; the List of Health Services, being a fee schedule of the rationed benefits updated annually by the Ministry of Health.[9]

The SHI system spends 78.4% of total health expenditure. Further, 7.4% of total health expenditure (2007) comes from state budgets and is financed through general taxation. This share of expenditure

[7] WHO Europe (2006), Highlights on health in Czech Republic 2005.

[8] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf).

[9] As a result, the Czech Republic scores 6 out of 6 on the breadth, 6 in the scope and 5.3 on the depth of the basic coverage according to the OECD scoreboard.

is devoted to capital investments in facilities directly managed by the Ministry of Health (teaching hospitals, specialised health care, research and postgraduate education facilities) or by regional authorities (regional and municipal hospitals), as well as to public health services (training costs of medical personnel, variety of health promotion and disease prevention, medical research, postgraduate education, etc.).

Private spending includes mainly three categories of expenditures: out-of-pocket payments for over-the-counter pharmaceuticals and some dental procedures; co-payments on medical aids and prescription pharmaceuticals, whose price exceeds the reimbursement amounts; and user fees for prescription pharmaceuticals and medical services. Private expenditure accounted for 17.5% of total health expenditure in 2008, up from less than 9.6% in 1998. In spite of a gradual increase, this amount is still among the lowest in the EU, well below the average of 22.7%. However, the share of out-of-pocket (OOP) expenditure in total health expenditure – which has always been among the lowest in the EU since 1990 – was about to reach the EU average in 2007 (13.2% vs. 14.4%), and has further increased significantly in 2008 to 15.7%. It is the result of the recent trend of the Czech Government to tackle inefficiencies by increasing cost-sharing in particular. Around 3% of the Czech population are exempted from copayment, including people living below the poverty line[10], neonates, chronically ill children, pregnant women, patients with infectious diseases, organ and tissue donors, individuals receiving preventive services, and those who have reached an upper limit for OOP payments.[11] Moreover, children up to 18 years old are now exempted from user fees for doctor visits. [12]

Although available, voluntary health insurance plays a minor role in health care financing (0.2% of health expenditure in 2007), which is mainly due to the broad range of benefits available under the SHI schemes.

# 4. Collection, pooling and allocation of financial resources

Mandatory health insurance is assured by a system of health insurance funds (in 2009 there were 9 of them, down from 27 in the mid-1990s), which are quasi-public, self-governing bodies that act as payers and purchasers of care. Patients can change their choice of a fund once every 12 months. Funds are obliged to accept all applicants and not allowed to make risk selection.

In 2009, mandatory SHI contributions account for 76% of revenues of the SHI system. The remaining 24% comes from the State contributions for certain groups of economically inactive people (children, students, women or men on parental leave, pensioners, unemployed, imprisoned and asylum seekers). SHI contributions take the form of a payroll tax split between employers and employees; self employed must contribute a fixed percentage of their profits. Contributions of employed people amount to 13.5% of gross monthly wages, with employees paying 4.5% and employers 9%. A yearly updated ceiling exists, equal to the average monthly wage over the two last years. Self-employed people pay 13.5% as well, but only on 50% of their revenues. Legally defined minimum contribution amounts to 13.5% of the minimum monthly wage calculated over the last year. The State-financed contributions represented 723 CZK in 2010 for every economically

[10] I.e. according to the poverty relief assistance, which is set by law and graded according to age and status.

[11] An annual ceiling of CZK 5000 (€200) per insured individual has been established for selected user fees (i.e., user fees for hospital stays and the use of ambulatory services outside the standard office hours are not included), as well as for copayments on prescription pharmaceuticals whose actual price exceeds the reference price in a particular group. In 2008, this ceiling was reached by only approximately 0.2% of insured individuals, but then lowered since April 2009 to CZK 2500 (€100) for children and adolescents and for people older than 65.

[12] See Bryndová L., Pavloková K., Roubal T., Rokosová M., Gaskins M. and van Ginneken E. Czech Republic: Health System Review. *Health Systems in Transition* 2009; 11(1): 1-122.

inactive person. These revenues for the Czech health system are therefore set by law; they consist in a fixed amount of money, occasionally adjusted – "valorised".[13]

Next, SHI contributions are redistributed among the funds according to a risk-adjustment scheme based on age and gender. The VZP is the largest fund, covering approximately 63% of the population in 2007. It was the first one created in 1992, covering at that time 100% of the market. However, it is supposed to have the worst risk-structure of the members, as subsequently established funds have been taking over mainly younger and healthier part of the population.

Even if the state has been decentralized (end of 1992) – and therefore competencies given to regional authorities beside the state level – the level of expenditure in administering such a system does not seem high, though its share in the total health expenditure has slightly increased in recent years. Public and total expenditure on health administration and health insurance as a percentage of GDP, both 0.2% in 2008, are both below the EU average (0.3% and 0.4% respectively). Public and total expenditure on health administration and health insurance as a percentage of current health expenditure, both 3.5% in 2008, are respectively slightly above and below the EU average (3.1% and 4.4% in 2008).

# 5. Providers status, referral systems and patient choice

Primary care is provided by physicians working in private practices or in health centres and polyclinics. Currently 95% of services are provided in private – mainly individual – practices. Health centres are generally owned by the municipalities, and primary care physicians pay a rent for the use of the facilities. Polyclinics are usually private legal entities, which additionally offer ambulatory specialist care.

Patients register with a primary care physician of their choice and can switch to a different doctor once every three months. The gatekeeper role of general practitioners (GPs) is limited. The physicians can refer patients to specialists, but the direct access to the latter is neither institutionally restricted nor economically discouraged. The patients frequently use this option in practice, circumventing the physicians and addressing directly the specialists. The referral is, however, obligatory for admissions to secondary inpatient care (except for emergency cases). Moreover, visits to the dentists and gynaecologists are always direct and without referral.[14]

Secondary care services are provided by private practice specialists, hospitals and specialised inpatient facilities. Following a series of reforms in the 1990s, formerly state-owned hospitals are currently owned and managed by a wide range of entities: ministries, regions and municipalities, private entities and churches.

In line with theoretical considerations, empirical evidence suggests a deficit of GPs and an overutilization of secondary and tertiary care in comparison with primary care. Number of practising physicians (357 per 100000 inhabitants) and nurses (849 per 100000 inhabitants) slightly exceeded the EU averages in 2007 (324 and 830 respectively). However, the number of GPs is considerably lower than the EU average (71 vs. 94 per 100000 in 2008). In this context, staff issues may be reinforced by the fact that 56.9% of all physicians were more than 45 years old in 2008 and many will retire in 10 to 15 years. Regional disparities have also been observed.

[13] Consequently, the Czech Republic scores 2 out of 6 in the OECD scoreboard due to the rather soft budget constraint.

[14] According to the OECD, the level of choice of provider in the Czech Republic has indeed a score of 6 out of 6, while gatekeeping scores 0 out of 6.

On the other hand, the figures suggest relatively easy access and possibly excessive use of hospital care. All indicators, although falling over the last years, still exceed significantly respective figures for the entire EU on average: number of acute care beds (506 vs. 383 per 100000 of population in 2008), number of hospital discharges (20624 vs. 16231 per 100000 inhabitants in 2007) and average length of stay in hospital (10.6 vs. 8 days in 2007). Those figures, together with the data on the number of beds in long-term care institutions (3.0 per 1000 inhabitants in the Czech Republic vs. 6.7 in the EU in 2007) and hospital day case discharges (378 per 100000 inhabitants in the Czech Republic vs. 6120 in the EU in 2007), may suggest an inadequate allocation of resources between acute health care on the one hand and outpatient and long-term care on the other hand, only partially explained by the reimbursement system (see below).

These elements suggest that a comprehensive human resources strategy may be necessary in order to achieve a balanced skill mix that ensures a more primary care oriented provision.

# 6. Purchasing, contracting and remuneration systems

Health insurance funds conclude long-term contracts with the providers, for five or eight years. Only the framework of such contracts is defined by law. They include necessary conditions for providing health care, general payment mechanisms, conditions for ending the contract, other rights and obligations of both sides, but do not include specific conditions of reimbursement, which are subject to annual negotiations.

GPs are paid according to a system of risk-adjusted capitation fees, accounting for age, but not gender of the patients. The number of patients per physician is subject to a limit above which the payment is reduced. This system replaced in 1997 an earlier fee-for-service payment scheme which, in the absence of cap on reimbursements, led to an overproduction of services and strong rise in expenditure. However, some services (such as preventive examinations and visits to patients' homes, accounting in 2008 for approximately 30% of physicians' income) are still paid on the fee-for-service basis.

Ambulatory care specialists are reimbursed using a degressive fee-for-service system, based on the List of Health Services. This List defines the number of points for each service and the threshold of the amount of services up to which providers are fully reimbursed. In case the limit is exceeded, the value of points is reduced. The financial value of the point is bargained annually between insurance funds and provider organizations.

Payments to hospitals are very diverse. The system of prospective global budgets is mainly used, whose level is based on the amount of services provided during the relevant period of the previous year and the sum of points from the List of Health Services. A growing number of cases are paid on the basis of diagnosis-related groups (DRGs) system: each year an updated version of the list of relative weights is published and the base rate is set. This system is supplemented with flat fees per insured person which are applied according to the thresholds based on the amount of services provided during the previous year. The current system replaced in 1997 a mixed system of points-based fee-for service (for procedures), per diem (for hospital stay) and lump-sum payment (for pharmaceuticals), which was found to stimulate excessive growth in hospital costs.[15]

[15] As a result, the OECD score for remuneration incentives to raise the volume of care in the Czech Republic is a bit more than 2 out of 6.

**Pharmaceuticals**

Pharmaceutical expenditure accounts for 20.9% of total current health expenditure, which is slightly more than the EU average (16.9% in 2008).

The pharmaceutical reimbursement system is based on reference pricing, whereby the basic reimbursement level for each reference group of substitutes is set at the price of the least expensive of those in the entire EU. Also maximum ex-factory prices for pharmaceuticals are based on international benchmarking, but the group of reference countries includes only eight EU Member States (Estonia, France, Italy, Lithuania, Hungary, Portugal, Greece and Spain). The combined maximum amount of mark-ups by pharmacies and wholesalers is set by the Ministry of Health. The system is degressive, with maximum surcharges being reduced (currently from 5% to 36%) in line with growing ex-factory prices.[16] Almost all pharmacies are run as private enterprises.

In order to constrain pharmaceutical expenditure, health insurance funds are allowed to introduce pharmaceutical budgets for each provider and impose penalties in case of overspending. In addition, regulatory fees have been implemented since 2008.[17]

# 7. Information and monitoring, use of cost effectiveness and health promotion

The information and communication technologies are still not sufficiently spread in the Czech health system. Health technology assessment of treatments and procedures is practically not available due to the lack of technical infrastructure. For the same reason, the information on patients owned by the health insurance funds is not efficiently used in practice.

The use of electronic medical records is being currently developed with a number of projects allowing physicians to share the information about patients between them and with the patients themselves. Information systems are broadly used for reimbursement and accounting purposes, and the use of web pages is being increasingly spread among health insurance funds, health care facilities and physicians.

Although the country lacks a unified system for assessing the quality of health services, the providers in some sectors of care (mainly those under direct responsibility of the Ministry of Health) are more and more frequently assessed via surveys, patient satisfaction questionnaires and accreditations.

As section 1 suggests, there are some risk factors that could translate into an important burden of disease and financial costs. This is why health promotion and disease prevention measures should be enhanced. Currently, public and total expenditure on prevention and public health services as a % of GDP (0.2% and 0.2% in 2008) are respectively the same as and slightly below the EU average (0.2% and 0.3% in 2008). The same is true for public and total expenditure on prevention and public health services as a % of total current health expenditure. If vaccination rates for children are very high, and above the EU average (99% vs. 96% in 2008), screening rates for cervical cancer were extremely low in 2002 (38.8% of the target population), as are breast cancer screening rates (42.6% in 2007).

[16] The degressive mark-up system was introduced in 2006.

[17] These newly introduced regulatory fees are also payable by patients hospitalised or visiting a physician.

# 8. Challenges

The analysis above has shown that reforms, aiming mainly at an improved efficiency of the health system via cost-containment and more market-oriented solutions, have been implemented in recent years in the Czech Republic. For example, user fees for doctor consultations, prescriptions and hospital stays that were introduced in 2008 have been successful in terms of additional savings for the healthcare system and a drop in unnecessary medical visits and in overconsumption of health services. Nevertheless, the commonly agreed-upon goals of equal access to and high quality of health care should not be left behind, in view of a comprehensive reform. The main challenges for the Czech health system are as follows:[18]

- To continue increasing the efficiency of health care spending in order to face the risk of high increase in health care expenditure over the coming decades due to demographic changes, while ensuring that out-of-pocket co-payments for services and pharmaceuticals do not constitute a barrier to health care accessibility for the least wealthy social groups by providing the adequate safety net.
- To clearly define a basic package of the healthcare services which are covered from the general insurance (i.e. to have a more explicit definition of SHI benefits).
- To develop a comprehensive human resources strategy that tackles spatial/regional disparities in health care accessibility (physicians' density, waiting times).
- To enhance primary care provision and tackle the excessive use of specialist and hospital care, in particular with a referral system to specialist care either through financial incentives (reimbursement levels higher if a referral takes place) or by making it compulsory; to promote use of GPs' services, by strengthening organisational and financial incentives for both doctors and patients; to foster the coordination of care between primary, secondary and hospital care in order to reduce redundant and duplicated medical examinations and laboratory tests, doctor visits and unnecessary drug prescriptions.
- To improve the cost-efficiency within hospitals, ensuring that care is provided in the most clinically appropriate and cost-effective way, for example by maximising the proportion of elective care provided on a day-case basis, day-of-surgery admission and reducing inappropriate lengths of stay in acute care hospitals; to consider reallocating the number of beds between acute health care (excess) and long-term care (shortage) systems. Moreover, to rethink the system of long-term care which is inefficiently allocated between the health and the social sectors.
- Beside the development of a national set of quality indicators initiated in 2009 by the Ministry of Health, to improve further data collection and use of information, especially in some crucial areas such as resources and care utilisation; to develop the patient information system, in particular about the disparities in the quality of healthcare facilities.
- To ensure a greater and more systematic use of health technology assessment to achieve decisions, for example about the SHI coverage or reimbursement rates.
- To foster health promotion and disease prevention activities for the entire population – not only for children – promoting healthy life styles and disease screening given the pattern of risk factors (smoking, alcohol, obesity, circulatory system diseases).

[18] The OECD overall efficiency score for the Czech Republic is slightly below its group average (about 2.6 years potential gain to be made through greater efficiency in the sector compared to the group – and the OECD – average of 2.3 years). Areas for improvement include: introducing some gate-keeping; assessing whether the current compensation system for out-patient care should not be reformed so as to reduce the very high number of consultations par capita and to promote high quality of care; improving availability of internationally comparable data on the quality of care.

# Statistical Annex – Czech Republic[19]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 6.6 | 6.6 | 6.5 | 6.7 | 7.1 | 7.4 | 7.2 | 7.2 | 7.0 | 6.8 | 7.1 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 793 | 812 | 854 | 929 | 1021 | 1131 | 1167 | 1235 | 1277 | 1346 | 1456 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 6.0 | 5.9 | 5.9 | 6.0 | 6.4 | 6.7 | 6.4 | 6.3 | 6.1 | 5.8 | 5.9 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 717 | 735 | 771 | 834 | 924 | 1016 | 1041 | 1078 | 1107 | 1147 | 1202 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 6.4 | 6.9 | 7.4 | 7.8 | 8.1 | 8.4 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 12000 | 12400 | 13000 | 13900 | 14400 | 15200 | 16300 | 17100 | 18200 | 19900 | 20200 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.4 | 0.5 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.7 | 0.8 | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | 0.8 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 | 1.3 | 1.2 | 1.3 | 1.3 | 1.3 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 1.5 | 1.5 | 1.5 | 1.6 | 1.7 | 1.8 | 1.8 | 1.8 | 1.6 | 1.5 | 1.5 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 1.4 | 1.2 | 1.2 | 1.2 | 1.3 | 1.4 | 1.4 | 1.4 | 1.1 | 1.0 | 0.9 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | 14.2 | : | : | 14.8 | : | : | : | : | : | 17.1 | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | : | 23.5 | : | : | 24.1 | 27.2 | 25.4 | 24.3 | 23.4 | 24.0 | 24.3 | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 11.8 | 11.9 | 11.8 | 11.8 | 11.9 | 12.1 | 11.5 | 12.0 | 11.9 | 12.1 | 12.1 | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 78.2 | 78.3 | 78.5 | 78.6 | 78.7 | 78.6 | 79.2 | 79.3 | 79.9 | 80.2 | 80.5 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | : | : | 63.3 | : | : | 59.9 | 59.8 | 63.2 | 63.3 | 62.3 | 61.6 |
| Life expectancy at birth males | 71.2 | 71.5 | 71.7 | 72.1 | 72.1 | 72.0 | 72.6 | 72.9 | 73.5 | 73.8 | 74.1 | 76.3 | 75.9 |
| Healthy life years at birth males | : | : | : | : | 62.8 | : | : | 57.9 | 57.8 | 61.3 | 61.2 | 61.5 | : |
| Infant mortality | 5.2 | 4.6 | 4.1 | 4.0 | 4.1 | 3.9 | 3.7 | 3.4 | 3.3 | 3.1 | 2.8 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 90.4 | 90.5 | 90.3 | 89.8 | 90.5 | 89.8 | 89.2 | 87.3 | 86.7 | 85.2 | 82.5 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 9.6 | 9.5 | 9.7 | 10.2 | 9.5 | 10.0 | 10.4 | 10.7 | 11.3 | 13.2 | 15.7 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | 4.0 | 3.2 | 2.9 | 2.8 | 2.8 | 2.6 | 3.3 | 3.2 | 3.2 | 3.4 | 3.5 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | 4.0 | 3.2 | 2.9 | 2.8 | 2.8 | 2.6 | 3.3 | 3.2 | 3.2 | 3.4 | 3.5 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 45.1 | 47.1 | 50.4 | 51.7 | 53.1 | 54.0 | 54.9 | 55.6 | 56.1 | 56.4 | 56.9 | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 303.1 | 308.0 | 337.1 | 345.1 | 350.4 | 352.2 | 351.3 | 354.9 | 355.7 | 357.0 | 360.0 | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 778.9 | 782.5 | 805.7 | 833.8 | 847.2 | 843.7 | 852.0 | 850.2 | 844.7 | 849.0 | 774.0 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 48.3 | 49.0 | 51.2 | 52.5 | 52.2 | 51.4 | 51.3 | 51.2 | : | : | 71.0 | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 610.3 | 585.0 | 572.9 | 569.2 | 565.2 | 556.4 | 540.0 | 533.3 | 523.7 | 515.2 | 505.7 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 12.4 | 12.3 | 12.6 | 12.7 | 12.9 | 13.0 | 13.1 | 13.2 | 13.0 | 12.6 | 11.4 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | 22065 | 22942 | 23057 | 21524 | 20799 | 20624 | : | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | 289 | 317 | 321 | 342 | 364 | 378 | : | 6120 | 5031 |
| Hospital average length of stay | : | : | : | : | 10.3 | 10.2 | 10.2 | 10.9 | 10.7 | 10.6 | : | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | 1.3 | 1.4 | 1.4 | 1.6 | 1.7 | 1.8 | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | 181.3 | 186.9 | 199.9 | 223.1 | 243.9 | 273.9 | 289.8 | 306.0 | 288.8 | 289.2 | 292.3 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 162.9 | 144.1 | 152.9 | 168.3 | 186.1 | 207.1 | 221.1 | 231.1 | 204.5 | 190.8 | 180.0 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | 25.1 | 24.1 | 24.7 | 25.0 | 25.1 | 25.2 | 25.7 | 25.7 | 23.5 | 22.2 | 20.9 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 22.5 | 18.6 | 18.9 | 18.8 | 19.1 | 19.1 | 19.6 | 19.4 | 16.6 | 14.7 | 12.9 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | 2.1 | 1.6 | 1.5 | 1.6 | 1.8 | 2.0 | 1.7 | 2.1 | 2.3 | 2.7 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | 2.1 | 1.6 | 1.5 | 1.6 | 1.8 | 1.8 | 1.4 | 1.8 | 1.9 | 2.3 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 97.0 | 98.0 | 97.4 | 97.2 | 97.1 | 96.7 | 96.4 | 95.5 | 98.0 | 100.0 | 99.4 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | 38.8 | : | : | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | 25.7 | 31.4 | 35.6 | 42.6 | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[19] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Denmark

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (30100 PPS in 2008) is well above the EU average (25075 PPS in 2008) up from 25100 in 2000. From 2000 to 2008 Denmark grew at an average rate of 1.3%. As a result of the global economic crisis, GDP growth was -4.7% in 2009 and the unemployment rate reached 6% in the same year. The response to the crisis was to implement a fiscal stimulus package to limit economic contraction and to provide support to Danish financial institutions. The economy shows signs of recovery with a forecasted economic growth of 1.6% in 2010 and 1.8% in 2011. As a consequence of the crisis and the fiscal stimulus the budget deficit reached 2.7% of GDP in 2009 and is forecasted to reach 5.5%in 2010.[1] Health is given priority by the government, but general fiscal consolidation to bring government revenues and spending into line in the coming years may also have consequences for the health sector through consolidating current measures to further improve its efficiency.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (9.9% in 2008) is slightly above the EU average (9.6% in 2008) and just slightly below the EA average[3] (10.0% in 2008). It has consistently increased from 8.3% in 1998. Public expenditure on health as a percentage of GDP is above the EU average (8.4% vs. 7.4% in 2008), having increased from 6.8% in 1998. Total (3006 PPS in 2008) and public (2552 PPS in 2008) per capita expenditure were above the EU average (2381 PPS and 1826 PPS in 2008), especially in the case of public expenditure. Per capita expenditure has consistently increased since 1998 (1864 PPS and 1529 PPS).

**The role of technology**

Total (0.8%) and public (0.5%) expenditure on pharmaceuticals[4] as a percentage of GDP were below the EU average (respectively 1.5% and 1%) in 2007. This is also the case for total (8.9% vs. 17.1% in 2007) and public (5% vs. 11.5% in 2007) pharmaceutical expenditure as a percentage of total current health expenditure. These low shares relate to a number of policies that have been put in place in this area. Nevertheless, the slight increase on pharmaceutical expenditure observed over the decade could indicate that it could be worth investigating to see if further cost-control measures in this area are necessary. The number of MRI units (1 in 2004), the number of CTS units (0.1 in 2008) and the number of PET scanners (0.1 in 2008) per 100 000 inhabitants were respectively above, the same and below the respective EU averages (0.7 in 2005, 1.9 in 2007, 0.1 in 2008) and show a small increase over time.[5]

**Health Status and healthy behaviour – life-styles – risk factors**

Life expectancy (81 years for women and 76.5 for men in 2008) is above the EU average for men and below the EU average for women (82.2 for women and 75.8 for men). Healthy life years (60.7 years for women and 62.3 years for men in 2008) are respectively below and above the EU

1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on health expenditure is taken from WHO, OECD health data and Eurostat database. The variables total and public expenditure used here follow the OECD definition under the System of Health Accounts and include HC.1-HC.9 + HC.R.1.

3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.

5 Data on technology is taken from OECD health data and Eurostat database.

average.[6] Mortality by stroke and cancer including lung cancer, breast cancer and prostate cancer is relatively high by OECD standards.[7] Indeed, the otherwise overall good performance of the health system has been questioned in Danish public debate (and in international documents) on the issue of high cancer and stroke mortality. The authorities also recognise health inequalities between socio-economic groups as a policy challenge. Data suggests an increase in the proportion of the population which is obese (from 9.5 in 2000 to 11.4% in 2005); a relatively high share of the population that smokes regularly despite a significant reduction (from 31% in 1998 to 23% in 2008) and a high per capita consumption of alcohol despite a small reduction over the last decade (from 11.6 litres in 1998 to 10.9 litres in 2008). These values deserve some attention and action.

## 2. Expenditure prospects: population ageing and future health status

The population is projected to increase by 400 000 from 2008 to 2060. Life expectancy is projected to increase by 7.4 years for women (slightly more than the EU average of 6.9 years) and 7.8 years for men (slightly less than the EU average of 8.5 years). The share of the old (65+) is projected to increase by 9.5 pps and the share of the very old (80+) by 5.9 pps (less than the respective EU average change of 13 and 7.8 pps) from 2008 to 2060.

As a result of ageing[8], health care expenditure is projected to increase by 1.2 pps of GDP (below the average change in the EU of 1.7 pps). Good health (translated by a constant health scenario) reduces the projected expenditure increase by more than half (from 1.2 pps to 0.3 pps) highlighting the importance of improving health behaviour.

## 3. Health care coverage and expenditure

A tax-based (central and local taxes), decentralised health care system provides full population coverage. The 98 local authorities are responsible for organising and funding local school health services, children dental care services, rehabilitation, health promotion and disease prevention, while the 5 Regional Authorities are responsible for hospital and psychiatric care funding as well as for establishing collective agreements with the relevant unions of general practitioners (GPs), specialists, dentists, etc. for the provision of services.

Primary, specialist and hospital care are free at the point of use. However, eyeglasses, contact lenses and dental prostheses are examples of items not funded or provided by local authorities and cost-sharing applies to dental care and pharmaceuticals. Children, senior citizens, those with certain medical conditions and disabilities and those who have reached an upper limit for out-of-pocket payments are exempted from cost-sharing. 15.5% of the population buys supplementary private insurance (to cover the services not covered by public provision/funding) and 15.5% buys complementary health insurance to cover cost-sharing. If cost-sharing is fully covered by private insurance it may lose the ability to reduce overconsumption and/or encourage some services more than others, although complementary insurance is taken by a relatively small share of the population. In 2008, private expenditure and out-of-pocket expenditure were 15.3% and 13.6% of total health expenditure, respectively below and slightly below the EU average (22.7% and 14.4%),

[6] Data on health status including life expectancy and healthy life years is from the Eurostat database. Data on life-styles is taken from OECD health data and Eurostat database.

[7] Mortality rates are based on the crude number of deaths according to selected causes in the WHO Mortality Database; they have been age-standardised to the 1980 OECD population, to remove variations arising from differences in age structures across countries and over time within each country (OECD Health at Glance 2009).

[8] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf).

having decreased from 18% and 16.6% in 1998.[9] This reduction in private expenditure may help explain part of the increase in public expenditure from 2000-2008.

In order to improve access and reduce the waiting time for hospital surgery, which was seen as a problem in Denmark, authorities have introduced a time guarantee allowing patients to use private or foreign hospitals if they had waited longer than one month for hospital non-emergency surgery. Data on waiting times for different kinds of treatment are publicly available (internet) to patients and hospitals. Additional resources have been channelled to this sector to help reduce waiting times. Waiting times have seen a reduction since these systems have been implemented.

# 4. Collection, pooling and allocation of financial resources

In 2008, 84.7% of total health expenditure funding came from public sources (taxes at central level – 80% of the financing – and local level), 13.6% from out-of-pocket payments and the rest from private insurance. The financing of the system (to pay for infrastructure, high-cost equipment and pay providers) comes from central and local taxes (regions are not allowed to levy taxes) on an 80%-20% basis. State funding is distributed to the regions via block grants. Part of the funding attributed to the regions, including local authorities funding, is activity-related, an element that came into place with the 2007 Reform. This aims to encourage local authorities to strongly focus on promotion and prevention activities so as to reduce the development of disease and therefore the need for care and therefore funding to the regions.

The budget for public spending in the health sector is decided by Parliament on the basis of (yearly) budget agreements between the government and the local authorities. The agreements are concluded in June, prior to the budget year, and the financing is included in the general budget. Resource allocation between regions is defined by the Parliament (on the basis of social and demographic indicators). The funds to be allocated to hospitals, GPs and specialist, within the agreed overall budget, are determined by the regional authorities. Funds for remuneration of medicines are earmarked. The Ministry of Health, through the National Health Board, provides guidelines and regulation (the overall legal framework) for care provision, supervises care delivery and sets public health priorities. It is, however, for hospitals to define the remuneration of other health staff, for regions to plan hospital capacity and equipment and for the regions and local authorities to pay providers for the delivery of care (regions buy curative care, local authorities pay for promotion, prevention, rehabilitation, children dental care).

Public (0.1%) and total (0.1%) expenditure on health administration and health insurance as a percentage of GDP is well below the EU average (0.3% and 0.4% respectively in 2007), as is public and total expenditure on health administration and health insurance as a percentage of current health expenditure (1.1% and 1.2% vs. 3.3% and 4.6% in 2007). Therefore, decision making appears relatively cost-efficient, probably also an effect of a simple, overall financing from taxes. The 2007 Local Administration Reform saw the merging of 15 counties into 5 regions and a reduction in the number of municipalities from 271 to 98. This rationalisation was designed to control expenditure / reduce costs, increase quality of care and reduce geographic disparities in care provision, via an increase in the population served by each region and local authority. The reduction in the number of authorities enabled the centralisation/ concentration/ specialisation in the provision of certain services (e.g. fewer and larger hospitals, centres of excellence for highly specialised services) and a higher funding ability to increase the pool of services provided. Due to lack of data post-2007 it is difficult to see the consequences of that reform in terms of expenditure savings.

[9] As a result, Denmark scores almost 6 out of 6 on the breadth of health insurance coverage, about 5.5 in the scope and a bit more than 5 on the depth of basic coverage according to the OECD scoreboard.

There are no formal procedures that take effect if the agreed regional framework/budget is not respected. However, the principle of the system of budget agreements can only exist if the agreements are overall respected.[10]

The benefit package is not explicitly defined but the health interventions provided are based on clinical effectiveness.

# 5. Providers status, referral systems and patient choice

Primary care is provided by independent general practitioners (GPs) working in private group practices and outpatient specialist care is provided in private individual practices. Although they are independent and have private practices, they receive almost all of their income from services paid by the regions. Most hospitals are owned by the regions (about 96.7% of all hospital beds are public) and hospital doctors are employees of the regions. In general, providers are paid by the regions on the basis of contractual arrangements with relevant unions.

The number of practising physicians per 100 000 inhabitants (314.4 in 2007) is at the EU average (324.1 in 2007) showing a consistent increase since 1998 (266.9). The number of GPs per 100 000 inhabitants (74.4 in 2006) is below the EU average (92.2 in 2006), though one of EU highest values. It shows an increase since 1998 (63.5) but it is lower than the values of 2004 and 2005. The number of nurses per 100 000 inhabitants (1459.3 in 2007) is well above the EU average (830 in 2007) and indeed one of the EU highest having consistently increased throughout the decade. This fits with authorities' ambitions, in recent years, of improving the supply of staff notably to compensate for the ageing of health staff: in 2007, 54.5% of all physicians were more than 45 years of age, a high proportion in Europe (EU average of 60.8%) but showing a decrease back to 52.2%, the 2000 value. The numbers above also suggest that the skill mix goes in the direction of a primary care oriented provision (which authorities wish to continue to pursue). Staff supply is regulated: there are quotas for medical students, by speciality and for the location of physicians. Nevertheless, some staff shortages in hospitals in some peripheral areas have been reported, which the authorities have tried to address by hiring foreign doctors.

Authorities have put strong efforts to use primary care vis-à-vis specialist and hospital care. Residents have to register with a GP and there is a compulsory referral system from primary care to specialist doctors i.e. GPs act like gatekeepers to specialist and hospital care. Choice of GP and specialist is allowed but limited (within 10km of a patient's home); while patients are free to choose a hospital.[11] Moreover, under the National IT Strategy for the Danish Health Care Service authorities have been introducing a number of ICT and e-health solutions to allow for nationwide electronic exchange of medical data, including the patient electronic medical records and e-prescribing to support and render the referral system and care coordination more effective, reduce medical errors and increase cost-efficiency. A system with a full overview of all medical records of a patient from GP's, hospitals etc is to be fully operational in 2011. A system with a full overview of all records of a patient is to be fully implemented in 2012.

The number of acute care beds per 100 000 inhabitants (299.2 in 2008) is below the EU average of 383.2 in 2008. It has consistently decreased in recent times (372.2 in 1998). Regional authorities decide hospital capacity and equipment capacity. Hospitals have autonomy to recruit medical staff and other health professionals, within the budget set by the regional authorities and within pay

[10] According to the OECD, Denmark scores 2 out of 6 in the OECD scoreboard due to the not very stringent budget controls.

[11] Indeed, according to the OECD, the level of choice of provider in Denmark has a score of 2 out of 6, while gatekeeping scores 6 out of 6.

scales set by the agreements between the regional authorities and the unions. Private hospitals are free to establish and expand their capacity in compliance with quality and safety requirements.

# 6. Purchasing, contracting and remuneration systems

GPs are paid a mix of a capitation and a consultation fee by the regional authorities. Outpatient and inpatient specialists are paid a salary. As said, most of physicians' income comes from services paid by the regions. Private practice is not allowed in public hospitals for salaried doctors, only for self-employed doctors. GP's performance based payment includes a variety of fees for different kinds of consultation, including advice on prevention. Health is given priority by the government, but general fiscal consolidation will, according to the latest budget agreement for 2011, also involve more focus on monitoring and control of activity and spending in private practise (GP's etc.).

Hospitals are paid a combination of prospective global budgets and activity-related payments based on DRGs (80%+20% respectively).[12] DRG weights are defined at central level with hospital remuneration methods and negotiation of rates taking place at regional level.

In relation to the level of hospital activity, inpatient discharges are slightly above the EU average (16498.4 vs. 16230.5 in 2007) while the number of day case discharges is below the EU average (4940.4 vs. 6120.1 in 2007). The proportion of surgical procedures conducted as day cases (23%) is below the EU average (28.1% in 2007). The average length of hospital stay (5.3 days in 2007) is significantly below the EU average (8 days). These figures suggest that there could be room to increase hospital throughput notably by improving the way surgical treatments are conducted (i.e. more use of day case surgery). They also suggest that as a result of some hospital inefficiency patients may, in fact, be waiting longer for elective surgery. The 2007 reform which reduced the local administration to 5 regions was aimed at concentrating /centralising hospital services to induce hospital efficiency and savings. A series of hospital mergers and closures have been observed. It is, however, not yet possible to observe the full impact of those reforms on hospital activity.

**Pharmaceuticals**

The authorities have implemented some policies to control expenditure on pharmaceuticals. There is no direct price regulation although the government and the industry have agreed on a scheme for price reductions for medicines used in hospitals. The regional authorities have also, according to the budget agreement for 2011, established a new committee to establish a better coordination between the regions on recommended use of expensive medicines in hospitals to ensure use of the most cost-effective medicines and at the same time establish a potential for lower prices through procurement.

Authorities also used a basket of countries to calculate a theoretical price on the basis of which the reimbursement share / the extent of cost sharing were defined. The authorities also apply reference pricing on reimbursed medicines, whereby the maximum reimbursement level of a medicine is the lowest price of the products in each group of products, defined on the basis of same active ingredient, form and strength and package size (with some deviation allowed). There is a positive list of reimbursed products which is based on health technology assessment information when available. Authorities promote rational prescribing of physicians through treatment guidelines complemented with monitoring of prescribing behaviour and education and information campaigns on the prescription and use of medicines. Authorities monitor the general consumption of prescribed medicines closely. There is no explicit generic policy but pharmacies are encouraged to offer the cheaper product and replace the prescription by a generic medicine if available. A public webpage indicates which products can replace each other to help pharmacists and consumers choose.

[12] The OECD score for remuneration incentives to raise the volume of care in Denmark is therefore 3 out of 6 as a result no remuneration mix for physicians but the use of activity related payment elements in hospital remuneration.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Comprehensive data, including comparable information on physician and hospital activity and care quality (clinical outcomes, use of appropriate processes) and on patient's experience and satisfaction with the care obtained through surveys is publicly available. Authorities also encourage providers' self-assessment and want to conduct regular comparisons with health care activity in other countries and develop further statistics on areas such as waiting times and choice.

The Danish Centre for Evaluation and Health Technology Assessment and various regional resource centres conduct and gather information on health technology assessment which is used to define coverage of new medicines, new high-cost equipment and new procedure as well as their level of reimbursement and respective clinical guidelines. Existing clinical guidelines and practice protocols are coupled with financial incentives and the monitoring of physician activity to encourage compliance with those guidelines.

The central government has set a number of relevant public health objectives in their National Health Plan "Healthy through life". As section 1 suggests, there are indeed a number of risk factors that can translate into an important burden of disease and financial costs. These objectives are set in terms of processes and the reduction of health inequalities and monitored by the central government. Authorities have strongly emphasised health promotion and disease prevention measures in recent years, including with the 2007 Local Administration Reform and the setting of a Committee which, in 2009, made 51 proposals to improve health promotion and disease prevention services and life-styles more generally. Promotion and prevention are seen by authorities as a means to ensure long-term sustainability of the health budget. Public and total expenditure on prevention and public health services as a % of GDP were below the EU average (0.1% and 0.1% vs. 0.2% and 0.3% in 2007). This was also the case as a % of total current health expenditure (1.5% and 1.5% vs. 2.2% and 2.7%). Vaccination rates which were about the EU average have recently decreased to well below the EU average (75% vs. 96% in 2007), while screening rates for cervical cancer are relatively high (69.4% of the target population in 2005).

# 8. Challenges

The analysis above shows that a wide range of reforms have been implemented over the years, to a large extent successfully (e.g. the policies to strengthen primary care or to reduce waiting times or to improve hospital efficiency or to improve data collection and monitoring). Denmark should continue to pursue such reforms. In this regard the main challenges for the Danish health care system are as follows:[13]

- To continue the consolidation of the administrative reform and the new decision-making structure that resulted from it, ensuring coherence of responsibilities.
- To continue to focus on a balanced mix of skills in all parts of the health sector, for instance nurses to handle tasks in private practice and acute wards, and on a clear referring system, to ensure an effective use of resources.

[13] The OECD overall efficiency score for Denmark is below its group average (more than 4 years potential gain to be made through greater efficiency in the sector compared to the group average of 2.6 years) and below the OECD average (2.3 years). Areas for improvement include: enhancing priority setting, in particular in the definition of the benefits basket and the monitoring of public health objectives, and considering additional co-payments to reduce excess demand. Ensuring more competition in care provision was also advised in the OECD Economic Survey for Denmark.

- To increase hospital output per bed (productivity). In addition, to consolidate the measures pursued in recent years to reduce duplication and improve efficiency and quality in the hospital sector (e.g. concentration and specialisation of hospitals within and between regions), there appears to be room to increase the use of day case surgery and increasing the supply of follow-up care for long-term care patients so as to reduce the unnecessary use of acute care settings for long-term care patients.
- To investigate if additional measures are necessary in order to control pharmaceutical expenditure, particularly hospital medicines, as this has grown in recent years.
- To have continued focus on health promotion and disease prevention activities i.e. promoting healthy life styles given the recent pattern of risk factors (diet, smoking, alcohol, obesity) in various settings (at work, in school).

# Statistical Annex - Denmark[14]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 8.3 | 8.5 | 8.3 | 8.6 | 8.8 | 9.3 | 9.5 | 9.5 | 9.6 | 9.8 | 9.9 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1864 | 1974 | 2072 | 2166 | 2304 | 2393 | 2571 | 2639 | 2795 | 2941 | 3006 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 6.8 | 7.0 | 6.8 | 7.1 | 7.3 | 7.8 | 7.9 | 8.0 | 8.1 | 8.3 | 8.4 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 1529 | 1623 | 1708 | 1791 | 1911 | 2008 | 2153 | 2209 | 2351 | 2485 | 2552 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 6.0 | 6.4 | 6.7 | 6.8 | 6.9 | 6.9 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 22400 | 23300 | 25100 | 25300 | 26300 | 25700 | 27200 | 27800 | 29400 | 30200 | 30100 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | 0.0 | : | 0.1 | 0.1 | 0.1 | : | : | : | : | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 0.7 | 0.7 | 0.7 | 0.8 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | : | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | : | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | 9.5 | : | : | : | : | 11.4 | : | : | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 31.0 | 31.0 | 30.5 | 29.5 | 28.0 | 28.0 | 26.0 | 26.0 | 25.0 | 24.0 | 23.0 | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 11.6 | 11.6 | 13.1 | 13.1 | 13.1 | 13.0 | 12.8 | 12.7 | 12.2 | 12.1 | 10.9 | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 79.0 | 79.0 | 79.2 | 79.3 | 79.4 | 79.8 | 80.2 | 80.5 | 80.7 | 80.6 | 81.0 | 82.3 | 82.3 |
| Healthy life years at birth females | 61.3 | 60.8 | 61.9 | 60.4 | 61.0 | 60.9 | 68.8 | 68.2 | 67.1 | 67.4 | 60.7 | 62.3 | 61.6 |
| Life expectancy at birth males | 74.0 | 74.2 | 74.5 | 74.7 | 74.8 | 75.0 | 75.4 | 76.0 | 76.1 | 76.2 | 76.5 | 76.3 | 75.9 |
| Healthy life years at birth males | 62.4 | 62.5 | 62.9 | 62.2 | 62.8 | 63.0 | 68.3 | 68.4 | 67.7 | 67.4 | 62.3 | 61.5 | : |
| Infant mortality | 4.7 | : | 5.3 | 4.9 | 4.4 | 4.4 | 4.4 | 4.4 | 3.8 | 4.0 | 4.0 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 82.0 | 82.2 | 82.4 | 82.7 | 82.9 | 83.9 | 83.8 | 83.7 | 84.1 | 84.5 | 84.7 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 16.6 | 16.1 | 16.0 | 15.9 | 15.8 | 14.6 | 14.7 | 14.8 | 14.3 | 13.8 | 13.6 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | : | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | 1.0 | 1.0 | 0.9 | 1.0 | 1.0 | 1.1 | 1.0 | 1.0 | 1.0 | 1.2 | : | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | : | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | 1.0 | 1.0 | 0.9 | 1.0 | 1.0 | 1.0 | 0.9 | 0.9 | 0.9 | 1.1 | : | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 52.0 | 52.9 | 54.5 | 56.1 | 56.3 | 56.2 | 56.6 | 56.0 | 55.2 | 54.5 | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 266.9 | 267.3 | 269.8 | 272.4 | 282.4 | 286.2 | 297.8 | 307.4 | 314.4 | 314.4 | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 1121.0 | 1172.0 | 1257.0 | 1309.4 | 1365.6 | 1378.2 | 1422.2 | 1459.4 | 1466.6 | 1459.3 | : | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 63.5 | 64.1 | 71.9 | 72.1 | 72.2 | 71.5 | 75.3 | 74.6 | 74.4 | : | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 372.2 | 356.7 | 350.8 | 343.8 | 341.1 | 328.6 | 315.9 | 306.5 | 299.9 | 289.9 | 299.2 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 6.8 | 6.6 | 7.4 | 7.6 | 7.6 | 7.9 | 8.1 | 8.3 | 8.5 | 8.7 | 8.9 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | 16316 | 16326 | 16138 | 15936 | 16421 | 16459 | 8547 | 16498 | : | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | 3311 | 3259 | 3621 | 3919 | 4261 | 4470 | 4764 | 4940 | : | 6120 | 5031 |
| Hospital average length of stay | : | : | 6.3 | 6.2 | 6.1 | 5.9 | : | : | 5.4 | 5.3 | : | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | 16.9 | 16.6 | 18.3 | 19.7 | 20.6 | 21.4 | 22.4 | 23.0 | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | 167.6 | 171.0 | 182.2 | 198.9 | 225.9 | 217.1 | 224.1 | 225.6 | 239.6 | 251.8 | : | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 81.8 | 84.8 | 88.7 | 96.8 | 111.8 | 121.4 | 126.1 | 126.0 | 133.0 | 140.6 | : | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | 9.3 | 8.9 | 9.0 | 9.5 | 10.1 | 9.5 | 9.1 | 8.9 | 8.9 | 8.9 | : | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 4.5 | 4.4 | 4.4 | 4.6 | 5.0 | 5.3 | 5.1 | 5.0 | 4.9 | 5.0 | : | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | : | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | : | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | : | : | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | : | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | : | : | 2.5 | 2.6 | 2.4 | 2.4 | 1.5 | : | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | : | : | : | 2.4 | 2.5 | 2.3 | 2.3 | 1.4 | : | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 99.0 | 96.0 | 95.0 | 97.0 | 98.1 | 96.0 | 95.0 | 93.0 | 93.0 | 75.0 | : | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | 69.7 | : | : | : | : | 69.4 | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[14] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Germany

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

German GDP per capita (29000 PPS in 2008) is one of the highest in the EU and exceeds significantly the EU average of 25075 PPS. However, the economy was hit hard by the economic and financial crisis with real GDP contracting by -5% in 2009, after following a downward trend since 2006. A rapid recovery is under way with real GDP growth projected to grow at +3.4 % in 2010 and1.8 % in 2011.[1]

**Recent trends of expenditure**

In 2008 total expenditure on health[2] in Germany amounted to 10.5% of GDP, the second highest percentage in the EU after France, and above the EU average[3] of 9.6%. However, the figure exceeded 10% of GDP in 1995 and has been broadly stable ever since. In fact, the 2007 and 2008 values are below those registered between the years 2002-2006. Also in terms of public spending on health, Germany is among the highest spenders with 8.1% of GDP in 2008. However, this figure has decreased over the recent years and is indeed one of the lowest since 1998 (8.2%). When measured in per capita terms, public spending on health in Germany ranks seventh in the EU, while total spending on health ranks fifth. Total (3057 PPS) and public spending are above the respective EU averages (2381 PPS and 1826 PPS in 2008).

Note though that the growth in health spending per capita in Germany in real terms was relatively contained: a 1.6% per year on average between 2000 and 2008. This was the smallest increase among all OECD countries during this period, much lower than the average growth rate across OECD countries of 4.2%. This was due to cost-containment policies aimed at stabilising the contribution rate, including: budget or spending caps for sectors or individual providers, introducing reference prices for pharmaceutical products and educational approaches to enhance generic and rational prescribing, reducing the number of hospital beds and restricting the number of high cots medical equipment as well as introducing co-payments (2004).

**The role of technology**

Total (1.6%) and public (1.2%) expenditure on pharmaceuticals as a percentage of GDP was slightly above the EU average (respectively 1.5% and 1%) in 2008. Total (15.6%) and public (11.9%) pharmaceutical expenditure as a percentage of total current health expenditure are respectively slightly below and about the EU average (16.9% and 11.2% in 2008). Expenditure on pharmaceuticals shows a consistent but small increase since 1998 both as a share of GDP and as a share of total current health expenditure. The density of selected diagnostic and therapeutic units in the German health care sector is in line with the average EU figures. In 2007, the number of angiography units (0.77) for example was similar to the respective EU average of 0.7.[4]

**Health status and healthy behaviour – life-styles – risk factors**

Life expectancy at birth in Germany is among the highest in the EU with men living on average 77.6 years and women 82.7 years (compared to the respective EU averages of 75.9 and 82.3). However, women and men live fewer healthy life years than the EU average (58.3 vs. 62.3 years

[1] European Commission (2010), European Economic Forecast – Spring 2010.

[2] Data on expenditure is taken from OECD health data and Eurostat database.

[3] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

[4] Data on technology is taken from OECD health data and Eurostat database.

and 58.8 vs. 61.5 years). Infant mortality at 3.5‰ is significantly below the EU average of 4.4‰. Non-communicable conditions account for over four-fifths of all deaths. About 40% are due to cardiovascular diseases, about 20% to cancer and 10% to external causes (injuries).[5] The lifestyle-related risk factors are similar to those of the other EU countries. The percentage of obese people (13.6% in 2005) is slightly below the EU average of 14.9%, while the percentage of regular smokers (23.2% in 2005) and alcohol consumption (9.9 litres per capita) do not differ considerably from the respective EU averages.[6]

# 2. Expenditure prospects: population ageing and future health status

Over the decades to come, the German population is projected to shrink significantly from 82.2 million in 2008 to 70.8 million in 2060. Life expectancy is forecast to grow by 7.6 years for men and 6.5 for women, i.e. somewhat slower than on average in the EU. With one of the eldest European societies already today, Germany is expected to be further affected by the demographic process of ageing. The share of old population (65+), as high as 20.1% in 2008, is likely to grow to 32.5% and the share of the very old (80+) to increase almost threefold (from 4.7% to 13.2%).

Driven by the change in demographic structure, public spending on health care is projected to increase by 27% or 2.0 pps of GDP, more than the average increase of 25% in the EU or 1.7 pps of GDP.[7] Good health (translated by a constant health scenario) reduces the projected expenditure increase to 12% or 0.9 pps of GDP, highlighting the importance of improving health behaviour and health outcomes. The growth in health spending due to ageing, together with limited expected increase in the other age-related items of public expenditure, a potential fall in revenues due to a shrinking labour force caused by ageing and falling birth rates and mounting public debt, results in a medium risk for the long-term sustainability of German public finances.

# 3. Health care coverage and expenditure

German health care system is a universal multi-payer system with two types of health insurance: statutory health insurance (SHI) (*Gesetzliche Krankenversicherung*, GKV) and private health insurance (*Private Krankenversicherung*, PKV). The majority of the population (89.6% in 2008) is automatically or compulsory covered by statutory health insurance (out of which 15% are insured voluntarily), while a smaller part of the population (10.4% in 2007) is covered by voluntary primary private health insurance. Since 2009, all residents have the legal obligation to hold a health insurance policy, a measure to close the last remaining gaps of coverage. This mainly applies to people who opted out from the mandatory system or lost private insurance and found themselves outside both systems without the possibility to re-enter them. Currently anyone who has lost their insurance in the past can be affiliated to the previous insurance, no matter whether statutory or private one.

The membership in the statutory health insurance is mandatory for employees with gross income not exceeding a legally defined nominal threshold. The voluntary primary private insurance plans are used by: (i) high-earners with a monthly income exceeding the threshold who may legally opt out of statutory health insurance and switch to private insurance; (ii) the self-employed who can either choose private insurance or voluntarily join statutory health insurance but choose private insurance; and (iii) civil servants who receive a partial reimbursement of their health costs (usually

[5] WHO Europe (2006), Highlights on health in Germany 2004.

[6] Data on life expectancy and healthy life years is from the Eurostat database. Data on life-styles is taken from the Eurostat database and the OECD health data.

[7] I.e. considering the "pure ageing scenario" of the projections (see The 2009 EPC/EC Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).

50% but up to 100%) from their employer (state) but are usually privately insured to cover the rest. The contributions for unemployed and people in social assistance schemes are covered by the state.

Supplementary and complementary private health insurance covered 17.5% of the German population in 2008. These types of private insurance cover cost-sharing, certain dental services, and certain hospital and outpatient services. Since 1995, long-term care is covered by a separate mandatory insurance scheme (*Pflegeversicherung*).

Until 2009, health insurance contributions used to be collected directly by the statutory health insurance funds (SHI-funds), which also had the freedom to establish their own contribution rates. To facilitate fair competition between the SHI-funds, from 1996 a risk adjustment mechanism was established to take account of diverging risk structures. Since 2009, a newly-created National Health Fund (*Gesundheitsfonds*) is responsible for pooling the income-related contributions paid at a uniform rate set by the Federal government. The risk adjustment mechanism has been refined to better reflect actual morbidity costs (morbidity oriented risk adjustment mechanism). If costs of a SHI-fund exceed the risk adjusted allocations of the National Health Fund, that sickness fund has to charge its members an additional fee.

The establishment of the National Health Fund with refined risk adjustment reduced the incentive for SHI-funds to choose the less risky members. In addition, there is an obligation for sickness funds to insure anybody who is entitled to social health insurance. Thus, they cannot "choose" or reject customers. The system is based on the solidarity principle, which guarantees identical benefits regardless of income, i.e. the amount of contributions paid, and morbidity risks. The legally defined basic benefit catalogue is the same for all statutory health insurance funds.

The responsibility for the system is shared between national and regional level (*Länder*). At the national level, the Federal Ministry of Health, the *Bundestag* and the *Bundesrat* are the key actors, responsible for setting the legal framework for both tiers of the insurance system. The *Länder* are responsible for organising undergraduate medical, dental and pharmaceutical education, planning inpatient capacities and financing capital investments in hospitals. Large sections of the German health care system are shaped through contracts between the SHI-funds and various health care providers. The national associations of physicians, hospitals and SHI-funds also form the Federal Joint Committee (*Gemeinsame Bundesausschuss, G-BA*) which decides on the benefits to be included in the statutory health insurance as well as on binding collective regulations on the quality of health care services.

The bulk of total health expenditure comes from the statutory health insurance (76.8% in 2008), but this share has fallen slightly from over 80% in 1998. Conversely, private expenditure has grown from less than 20% at the end of the 1990s to 23.2% in 2008, slightly above the EU average of 22.7%. Since 2004, patients need to provide certain co-payments to cover 10% of the costs. Co-payments (at least €5 but not exceeding €10) are mandatory for visits by adults to physicians and dentists (€10 for the first visit per quarter), outpatient medications, inpatient days and prescribed medical aids. Yet, co-payment is limited to 2% of an annual household income, respectively to 1% for the chronically ill. SHI-funds may also exempt contracted drugs from co-payment. Out-of-pocket expenditure accounts for 13% of total health expenditure below the EU average of 14.4%.[8] This relates to co-payments for benefits of health insurance systems and to direct payments for benefits not reimbursed by the schemes.

[8] As a result, Germany scores 6 out of 6 on the breadth, 6 in the scope and 5.6 on the depth of basic coverage according to the OECD scoreboard.

# 4. Collection, pooling and allocation of financial resources

The statutory health insurance system is composed of 160 (October 2010) sickness funds. Those non-profit public law corporations are under legal government supervision, but financially and organisationally independent bodies. The number of statutory health insurance funds (SHI-funds) has decreased from over 1.123 in 1992, mainly as a result of two reforms aimed at strengthening the competition among health-care insurers. The first one, from 1993, introduced free choice of sickness funds for the insured individuals. The second one, from 2007, allowed mergers between sickness funds irrespective of their type. Earlier, only the same type of funds were allowed to merge.

The contributions are calculated as percentage of gross income subject to social contributions (wages and pensions) up to a ceiling adjusted annually in line with wage developments. The unemployed contribute proportionally to their unemployment benefits, but for the long-term unemployed with a fixed low entitlement, the Federal Employment Agency pays a fixed per capita premium. The unemployed dependants are insured without any extra charge – the costs are covered by the federal tax subsidy that finances the family insurance and non-insurance-related expenditure (e.g. maternity allowance).[9]

In 2009, the government set a uniform contribution rate at 15.5% (7.3% and 8.2% paid by employers (pensioners) and employees (pension fund) respectively) so that the expected contributions and the federal subsidy would cover all the expected expenditure. However, the rate has been cut in July 2009 to 14.9% (7% and 7.9% paid by the employer and employee) as a part of the fiscal stimulus package. The resulting deficit of the National Health Fund was compensated by an increase in the federal tax subsidy.

The collected contributions are pooled and complemented by a federal tax subsidy. They are allocated then to the individual sickness funds in the form of: (i) a uniform basic lump-sum per person insured, (ii) payments adjusted for risk, gender, invalidity, age and morbidity from 80 chronic and serious illnesses; and (iii) additional funds to cover other standard expenditure (e.g. administrative costs).

If the allocations of the National Health Fund exceed the financial needs of one sickness fund, it has to impose an additional contribution on its members. So far, the surcharges may have the form of a premium or be income-related but they are limited to 1% of the assessable income. However, the insured can switch the fund in order to avoid the additional contribution. If a sickness fund generates a surplus, it may grant refunds or additional services to its members. In 2010, 15 SHI-funds had to charge additional premia.

From January 2011 onwards, the income-related contribution rate will be fixed at 15.5% by law. To cover future cost increases in health care SHI-funds have to impose an additional premium that is not income-related. When the average additional premium exceeds 2% of the assessable income of a member, the income-related contribution rates of the insured are lowered respectively.

Total (0.6%) and public (0.4%) expenditure on health administration and insurance as a % of GDP are above the EU averages (respectively, 0.4 and 0.3% in 2008). Total (5.4%) and public (4%) expenditure on health administration and insurance as a % of total current health expenditure are also above the respective EU averages of 4.4% and 3.1%. Higher expenditure on health administration and on health insurance may be partly associated with the high number of actors

[9] According to the original plans from 2007, the federal subsidy was to increase linearly to reach €14bn in 2016, which was accelerated by the increase in the subsidy as a part of the stimulus package in 2009.

involved in the sector and the need to monitor closely the sector (in terms of costs, prices, contractual arrangements, activity and quality of care and market developments).

# 5. Providers status, referral systems and patient choice

Primary care is provided by private for-profit physicians, most of whom run individual practices, and about 25% share a practice. The majority of doctors are accredited for statutory health insurance. They can also take private patients. Only a small minority of physicians resigns statutory health insurance accreditation and takes private patients only. The practice premises, equipment and personnel are financed by the physicians themselves. Depreciation of investments can be financed through reimbursement from sickness funds, private health insurers and to a small, but increasing degree, by patients directly. Traditionally, the German health-care system does not have a gate-keeping system and the patients are free to choose any doctor under a contract with their sickness fund. Typically, social health insurance in Germany operates with collective contracts covering provision by all doctors of a certain region. There is no affiliation to a single sickness funds. Additionally, there is also the option for selective contracts for a range of services or specific care models. More recently, patients are encouraged to choose a family doctor.[10]

The number of physicians has grown constantly over the recent decade: from 317.5 per 100000 inhabitants in 1998 to 356 in 2008, above the EU average of 321.6 in 2008. Over the same period of time, the number of general practitioners has declined from 108 per 100000 in 1998 to 99.2 in 2006, although still above the EU average of 92.2 in 2006. The number of nurses has increased slightly from 938.3 per 100000 in 1998 to 1090 in 2008, remaining well above the EU average (879.2 in 2008). Note though that 70.4% of those physicians are more than 45 years of age and 34.8% are more than 55 years of age.

Hospitals in Germany have traditionally focused on inpatient care, which may explain the high number of acute care beds: 564.7 per 100 000 inhabitants significantly higher than the EU average of 383.2. According to the OECD (2010), about 49% of all acute hospital beds are public, 36% are private not-for-profit and 15% are private for profit. Acute hospitals can provide outpatient emergency care, but outpatient facilities exist formally only in university hospitals. Nevertheless, the number of acute care beds decreased from 650.5 in 1998, while the number of hospital inpatient discharges per 100000 people has risen over the same period from 19585.6 to 22692.3 per 100 000 inhabitants. The number of day cases discharges several times lower than in the other EU countries: 596.1 per 100000 inhabitants compared to the EU average of 6120.1 in 2008. The average length of stay has also remained broadly constant at 10 days in recent years. This hides the fact that to OECD data indicates a substantial reduction in the ALS over the last 20 years, compared to the EU average of 7.9 days in 2008. One reason for the low number of day cases discharges is that a legal possibility has been created for hospitals in the area of outpatient care to provide outpatient services in the treatment of certain diseases.

# 6. Purchasing, contracting and remuneration systems

Physicians and other health professionals working in hospitals or institutions for nursing care or rehabilitation are paid salaries. Public and non-profit providers usually pay public service tariffs to their employees, while private, for-profit providers may pay lower or higher wages or additional payments to their employees. Services provided by the ambulatory care providers, as well as by private physicians, dentists, pharmacists, midwifes and other health professionals are subject to predetermined price schemes or price ranges.

[10] According to the OECD, the level of choice of provider in Germany scores 5.6 while gatekeeping scores 3 out of 6.

Medical billing is based on the standard schedule of fees (*Einheitlicher Bewertungsmaßstab - EBM*). It is the fee schedule that applies to outpatient care and, in the form of fees-for-service or flat rates, comprises all services that panel doctors can bill for reimbursement by the statutory health insurance funds. Since 1st January 2009, each service has been assigned not only a point value but also a fixed price in euros. The baseline value used for establishing a regional point value is the so-called guideline point value. Every year, the concrete amount it translates to is newly negotiated at the Federal level between a special committee composed of physicians and health insurance funds. For financing the panel doctor services, the statutory health insurance funds provide a morbidity-related remuneration package that is based on price and quantitative trends previously agreed on the Federal level. The morbidity-related remuneration package is the baseline value for determining and establishing panel doctor budgets. Services above the budget are remunerated on a graduated basis.

Beyond the foregoing, the health insurance funds make additional funds available for services outside the morbidity-related remuneration package for which they have to pay fixed prices. These are services that are particularly eligible for funding, such as check-ups and screenings, immunisations and outpatient surgery. Payment for these services and the morbidity-related remuneration package make up the remuneration package. Until the end of 2008, trends in the remuneration package were pegged to the trends in the aggregate assessable income of all members of the statutory health insurance system (*Grundlohnsumme*). Since 2009, it has been adjusted considering the population-based morbidity.

Patients who have opted-out from the statutory insurance system pay out-of-pocket on a fee-for-service basis – they are billed directly by the physicians and hospitals and reimbursed later by the insurance companies. Doctors may charge higher fees for private patients – based on a medical fee schedule for private patients - and it is at the insurer's discretion to refuse to cover unreasonable amounts.

Hospital expenditures are financed using two different mechanisms. Investment is financed by the regions (*Länder*), mainly through regional taxes, while recurrent expenditure (thus, mainly cost of care) is reimbursed by the SHI-funds and private health insurers. In order to be eligible for investment financing, the hospitals need to be listed in the 'hospital plans' established in each region by a trilateral committee consisting of the representatives from regional government, hospitals and sickness funds.

Recurrent expenditures of acute hospitals are reimbursed by the SHI-funds according to the Diagnosis-Related Group (DRG) system, with some exceptions, concerning in particular psychiatric care and some specific services. DRGs take into account the diagnosis and its clinical severity, co-morbidity and age of the patient, as well as the intervention performed. The relative weights for the various DRGs are determined at national level, and applied to each hospital's procedures in order to establish hospital-specific case-mix index. This index, multiplied by a uniform state-specific flat-rate price (which is negotiated annually in every region) and by the number of cases gives the total hospital reimbursement in a period. The law allows hospitals and SHI-funds to negotiate reimbursement for additional costs in the form of a certain share of the respective DRG to be added (or subtracted) from a normal payment.[11]

**Pharmaceuticals**

Germany does not regulate prices, but pharmaceutical companies so far can set prices for every new pharmaceutical that has received permission to be commercialised in Germany. Apart from over-the-counter ones, every pharmaceutical will automatically be included in the benefit catalogue and reimbursed by statutory health insurance funds, if prescribed by physicians. SHI-funds pay the price

[11] The OECD score for remuneration incentives to raise the volume of care in Germany is 4.5 out of 6 as a result of the use of activity related payment for hospital remuneration and for some physicians.

for drugs prescribed in outpatient care directly to the pharmacies. A surcharge for wholesalers and pharmacies is set by the state, so that a certain package is sold in all pharmacies at the same price.

Germany uses a number of policies to control pharmaceutical expenditure growth. Each SHI-funds can negotiate discounts on prices with pharmaceutical companies for drugs used in outpatient care. If such a contract has been established, pharmacies will be obliged to dispense the contracted generic drug for the patient enrolled in the respective health plan. Contracts are also possible for patent-protected pharmaceuticals. Incentives can be offered to physicians to follow the insurance provider's drug list.

In addition, the mechanism of reference pricing has been established, grouping medicines by therapeutic equivalence and including generic medicines. Reference prices are established for more than 70% of prescribed drugs in outpatient care. These reference prices are the share of pharmaceutical costs to be paid by the health insurance funds. If the price is higher than the reference price, the patient has to pay the additional cost. The cost-sharing is then applied as a flat-rate co-payment above the differential between the actual and reference prices. The insured are obliged to contribute to the costs of their drugs by co-payments. These co-payments for pharmaceuticals are low and amount to 10% of the pharmacy price - a minimum of € 5 per package, but not more than € 10. Under some specific conditions, low-priced drugs can be exempted from co-payments. SHI-funds may also exempt contracted drugs from co-payments. The reimbursement of generics and some patent-protected drugs in out-patient care is limited by reference prices.

Such reference price system is successful in holding the prices, but does not prevent doctors from prescribing more expensive drugs. To counteract that, pharmacists are encouraged to offer the cheapest equivalent to what is actually prescribed in the first place. In addition, the extent of cost-sharing decreases as the cost of the drug vis-à-vis the reference price decreases: e.g. generics with prices at least 30 % under reference prices are totally free from copayment. This has led to an increase in the share of total sales volume for generics.

These policies are supplemented by financial incentives and the monitoring of prescription patterns vis-à-vis prescription guidelines and prescription targets. The prescription of prescription drugs by physicians is restricted by contracts between the umbrella organizations of the health insurance providers and the physicians. These contracts limit prescriptions to a maximum average total value of prescriptions per patient. Note that patients' access to high-cost drugs, which are necessary for medical reasons, is guaranteed by law to make sure that the patient gets the necessary drugs needed for a medical recovery. These costs are exempted from the prescription limits. A new legislation addresses price-setting and reimbursement of patent-protected drugs, mainly by encouraging centralized bargaining between public health insurance funds and pharmaceuticals companies, based on cost-benefit evaluations.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Germany has comprehensive information and monitoring system of health data. Health Technology Assessment (HTA) is also increasingly used in Germany to inform health-care decision-making.[12]

A special feature in the regulation of medical services of the German health care system is the important role, alongside that of the legislature, played by the self-governing bodies of service providers and health insurance funds. In the statutory health insurance system the major decision-

[12] See http://www.ispor.org/HTAspecialissue/Fricke.pdf .

making body is the Federal Joint Committee (G-BA). It is formed by the national associations of doctors and dentists, the German Hospital Federation and the National Association of Health Insurance Funds. Since 2004, national groups representing patients were given the right to file applications and to participate in the consultations of the G-BA. It has wide-ranging regulatory powers to formulate and implement in detail which services will be provided and under which conditions. Thus, the G-BA determines the benefit catalogue of the statutory health insurance. One important area of responsibility of the G-BA is the assessment of new methods of medical diagnosis and treatment. In the sphere of ambulatory (outpatient) care in particular, a new method must gain a positive evaluation by the G-BA in terms of benefit and efficiency before it can be reimbursed by the statutory health insurance funds. The assessment of medical treatments and procedures follows a standardised procedure according to the principles of evidence-based medicine.

Quality and efficiency are two deciding factors in maintaining the performance of the German health care system. To achieve this aim, it is important to examine objectively the advantages and disadvantages of medical services for patients. This is the responsibility of two German Institutes: the German Agency for Health Technology Assessment (DAHTA), which runs the HTA information system, and the Institute for Quality and Efficiency in Health Care (IQWIG). IQWiG is an independent scientific institute that investigates the benefits and harms of medical interventions for patients. It regularly provides information about the potential advantages and disadvantages of different diagnostic and therapeutic interventions. The Institute was established 2004 as a foundation for quality and efficiency in health care.

IQWIG and DAHTA cooperate nationally with medical societies and internationally with HTA agencies, as well as with the International Network of Agencies for Health Technology Assessment (INAHTA) and the EUnetHTA Joint Action (European network for HTA Joint Action). Topics of these cooperation are, e.g., methods for producing HTA reports, as well as the exchange of these studies and the transferability of their results to national health systems.

The central Government through the Ministry of Health sets and monitors public health priorities in terms of process. As section 1 suggests, there are some risk factors that can translate into an important burden of disease and financial costs in the future. The central government has established a number of priority areas for health promotion and disease prevention. Health promotion and disease prevention activities have received more emphasis than in other countries in the EU, as seen by its pattern of expenditure and some indicators. Total and public expenditure on prevention and public health services as a % of GDP were above the EU average (0.4% and 0.3% vs. 0.3% and 0.2% in 2008). Public and total expenditure on prevention and public health services as a % of total current health expenditure were also above the EU average (3.7% vs. 2.7% and 3.2% vs. 2.1% in 2008). Vaccination rates are about the EU average (96% in 2008). Screening rates for cervical and breast cancer are relatively high (55.9% in 2002 and 54% in 2007).

# 8. Challenges

The analysis above shows that a range of reforms have been implemented in recent years for example to strengthen the use of primary care and financial encouraged referral systems, to improve hospital efficiency and to increase the equity of financing. The current health reform in Germany is particularly dedicated to reorganise the financing of the health system. By freezing the income-related contribution rate future over-proportional expenditure rises will be financed through increasing premia. Future expenditure rises will therefore no longer impose additional pressure on labour costs.

The main challenges for the German health system are as follows[13]

- improving the coordination between ambulatory and inpatient care and reducing the sectoral borders;
- extending the possibilities of hospitals to provide ambulatory and day care as well as transferring more health care services into the ambulatory sector in order to reduce the number of inpatient care treatments;
- fostering the process of modernization of and specialization among hospitals;
- enhancing competition between care providers (especially physicians) and statutory health insurance funds;
- fighting under-supply in certain areas by optimizing the need related planning and by promoting new models of health care delivery;
- expanding health services research on the particular need of the elderly and chronically ill;
- strengthening the role of health promotion and disease prevention in the overall health care system as well as in society in general.

[13] The OECD overall efficiency score for Germany is lower than its group average (about 2.8 years of potential gain to be made through greater efficiency in the sector compared to the group average of 2.1 years) and above the OECD average (2.3 years). Identified areas for improvement include: assess the current balance between extensive choice of physician and low out-of-pocket payments and reform physicians payment to reduce potential for excess activity notably via the combination of capitation and fee-for-service.

# Statistical Annex - Germany[14]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 10.2 | 10.3 | 10.3 | 10.4 | 10.6 | 10.8 | 10.6 | 10.7 | 10.6 | 10.4 | 10.5 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 2125 | 2233 | 2322 | 2402 | 2508 | 2610 | 2660 | 2804 | 2886 | 3001 | 3057 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 8.2 | 8.2 | 8.2 | 8.3 | 8.4 | 8.5 | 8.1 | 8.2 | 8.1 | 8.0 | 8.1 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 1703 | 1789 | 1852 | 1912 | 1988 | 2054 | 2048 | 2158 | 2216 | 2307 | 2347 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 7.6 | 8.1 | 8.5 | 9.0 | 9.2 | 9.2 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 20800 | 21800 | 22600 | 23100 | 23600 | 24200 | 25200 | 26300 | 27500 | 28800 | 29000 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 1.4 | 1.4 | 1.4 | 1.5 | 1.5 | 1.6 | 1.5 | 1.6 | 1.6 | 1.6 | 1.6 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 0.9 | 1.0 | 1.0 | 1.1 | 1.1 | 1.2 | 1.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | 11.5 | : | : | : | 12.9 | : | 13.6 | : | : | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | : | 24.7 | : | : | : | 24.3 | : | 23.2 | : | : | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 10.6 | 10.6 | 10.5 | 10.4 | 10.4 | 10.2 | 10.1 | 10.0 | 10.1 | 9.9 | 9.9 | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 80.8 | 81.0 | 81.2 | 81.5 | 81.3 | 81.3 | 81.9 | 82.0 | 82.4 | 82.7 | 82.7 | 82.3 | 82.3 |
| Healthy life years at birth females | 64.3 | 64.3 | 64.6 | 64.5 | 64.5 | 64.7 | : | 55.1 | 58.0 | 58.3 | 57.4 | 62.3 | 61.6 |
| Life expectancy at birth males | 74.6 | 74.8 | 75.1 | 75.6 | 75.7 | 75.8 | 76.5 | 76.7 | 77.2 | 77.4 | 77.6 | 76.3 | 75.9 |
| Healthy life years at birth males | 62.1 | 62.3 | 63.2 | 64.1 | 64.4 | 65.0 | : | 55.0 | 58.5 | 58.8 | 55.8 | 61.5 | : |
| Infant mortality | 4.7 | 4.5 | 4.4 | 4.3 | 4.2 | 4.2 | 4.1 | 3.9 | 3.8 | 3.9 | 3.5 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 99.8 | 99.9 | 99.8 | 99.8 | 99.8 | 99.7 | 99.8 | 99.8 | 99.8 | 99.8 | 99.9 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 80.2 | 80.1 | 79.8 | 79.6 | 79.3 | 78.8 | 76.9 | 76.8 | 76.7 | 76.7 | 76.8 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 11.0 | 10.9 | 11.1 | 11.2 | 11.4 | 11.7 | 13.2 | 13.2 | 13.4 | 13.3 | 13.0 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | 5.7 | 5.7 | 5.7 | 5.7 | 5.8 | 5.9 | 5.9 | 5.8 | 5.6 | 5.5 | 5.4 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | 4.3 | 4.3 | 4.3 | 4.3 | 4.4 | 4.3 | 4.3 | 4.3 | 4.1 | 4.1 | 4.0 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 59.9 | 61.0 | 62.5 | 63.8 | 65.4 | 66.6 | 67.7 | 69.4 | 69.5 | 70.1 | 70.4 | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 317.5 | 320.6 | 325.8 | 330.3 | 333.4 | 336.7 | 339.1 | 341.2 | 345.5 | 350.0 | 356.0 | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 938.3 | 948.1 | 957.9 | 977.7 | 983.8 | 988.7 | 991.5 | 995.9 | 999.8 | 1070.0 | 1090.0 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 108.0 | 106.4 | 106.6 | 106.2 | 105.1 | 104.2 | 102.4 | 97.4 | 99.2 | : | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 650.5 | 644.8 | 636.7 | 627.6 | 612.2 | 605.5 | 593.0 | 587.8 | 572.9 | 568.8 | 564.7 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 7.1 | 7.2 | 7.3 | 7.5 | 7.6 | 7.6 | 7.0 | 7.5 | 7.4 | 7.5 | 7.8 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | 19586 | 20060 | 20164 | : | : | : | 21481 | 22138 | 22692 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | 928 | 899 | 886 | : | : | : | 576 | 578 | 596 | 6120 | 5031 |
| Hospital average length of stay | : | : | 10.1 | 9.8 | 9.7 | : | : | : | 10.2 | 10.2 | 10.0 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | 4.5 | 4.3 | 4.2 | : | : | : | 2.6 | 2.5 | 2.6 | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | 288.7 | 302.7 | 315.7 | 342.5 | 361.2 | 376.1 | 369.4 | 423.2 | 428.2 | 453.2 | 460.4 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 194.2 | 215.7 | 228.5 | 252.6 | 269.5 | 281.4 | 263.0 | 311.6 | 318.7 | 344.1 | 352.7 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | 14.1 | 14.1 | 14.1 | 14.8 | 15.0 | 15.0 | 14.5 | 15.7 | 15.4 | 15.7 | 15.6 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 9.5 | 10.0 | 10.2 | 10.9 | 11.2 | 11.2 | 10.3 | 11.6 | 11.4 | 11.9 | 11.9 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | 3.1 | 3.2 | 3.2 | 3.3 | 3.3 | 3.4 | 3.4 | 3.4 | 3.4 | 3.7 | 3.7 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | 2.5 | 2.6 | 2.7 | 2.7 | 2.8 | 2.9 | 2.9 | 2.9 | 2.9 | 3.2 | 3.2 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 95.1 | 94.8 | 95.1 | 94.9 | 94.7 | 93.8 | 94.2 | 94.4 | 96.2 | 96.6 | 95.5 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | 55.9 | : | : | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | : | 54.0 | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[14] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Estonia

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (16900 PPS in 2008) is much below the EU average of 25075 PPS, although it has more than doubled since 1998 (7200 PPS). Estonia was severely hit by the crisis. Following a period of very strong growth, GDP growth was already -3.6% in 2008, and -14.1% in 2009 – then aggravated by the adverse global developments. However, it seems that the flexible nature of the Estonian economy allowed the changes in the structure of the economy to take place relatively fast, since the last quarter of 2009 already showed an emerging positive growth. The GDP growth for 2010 is therefore forecasted to be 0.9% and 3.8% in 2011, when domestic demand growth is expected to resume.[1] The negative GDP growth was coupled with a large increase in unemployment rates, but there was no sharp reduction in government revenues, although the tax revenue declined somewhat.[2] Estonia implemented a significant consolidation effort in 2009 which included a reduction in the public sector wage bill (a reduction in public sector staff numbers and their wages[3]) and an increase in direct and indirect taxes. The budget for health has been significantly affected as a result of this consolidation through reduced revenue of the Estonia Health Insurance Fund (EHIF) and changes to the sickness insurance regime.

**Recent trends of expenditure**

Total expenditure on health[4] as a percentage of GDP (6.1% in 2008) is well below the EU average[5] (9.6% in 2008), having slightly increased since 1998 (5.6%). Public expenditure on health as a percentage of GDP (4.8%) is also much below the EU average (7.4% in 2007), and the same as in 1998. The low and rather constant ratios may be partly explained by the very high GDP growth: prior to the crisis Estonia registered one the highest GDP growth in the EU reaching a double-digit output growth. Indeed, total (1033 PPS in 2008) and public (804 PPS in 2008) per capita expenditure shows a consistent increase (respectively 566 and 436 PPS in 2003), having more than doubled since 1998. However, it is still considerably lower than the EU average (2381 PPS and 1826 PPS respectively in 2008) and remains one of the lowest in the EU. Note though that the share of public expenditure in total expenditure on health is high (77.8%, slightly above the EU average of 77.6% in 2008). The Estonian Medical Association in 2007 had proposed a target for total expenditure on health of 6.5% of GDP in 2010.

**The role of technology**

Total (1.3%) and public (0.5%) expenditure on pharmaceuticals[6] as a percentage of GDP are below the EU average (1.5% and 1.0% respectively in 2008) and have been basically constant since 2003 (even since 1999, earliest available data). Total (214 PPS) and public (92 PPS) pharmaceutical expenditure per capita are among the lowest in the EU, despite an increase from 2003 to 2008. Public expenditure on pharmaceuticals as a percentage of total current health expenditure is also below the EU average (9.3% compared to 11.2% in 2008) and decreased from 10.9% in 2003, while

1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Indeed, nominal government revenue did not decrease in Estonia during the crisis (while it increased in relative terms). Tax revenue was boosted by several tax rate increases and the authorities relied on several temporary non-tax revenue sources.

3 Note though, that employment declined only in public administration, not in health and education.

4 Data on expenditure for Estonia is taken from WHO health for all database and Eurostat.

5 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

6 Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.

total expenditure on pharmaceuticals as a percentage of total current health expenditure is above the EU average (21.6% vs. 16.9% in 2008). This suggests that there is an important share of private expenditure on pharmaceuticals and that policies regarding pharmaceuticals have been fairly successful at controlling pharmaceutical expenditure.

On equipment, an increase in CTS and MRI units per 100 000 inhabitants can be observed (from 0.7 CTS units in 2005 to 1.5 in 2008 and from 0.2 MRI units in 2005 to 0.8 in 2008), due to a national effort to replace outdated equipment and improve the quality of care.[7] Concentrating care involving high technology in a few facilities has been a policy of the national authorities and may have helped to control costs while exploring economies of scale.

**Health status and healthy behaviour – life-styles – risk factors**

Life expectancy (79.5 years for women and 68.7 years for men) and healthy life years (57.2 years for women and 52.7 years for men) are much below the EU average and currently some of the lowest in the EU, especially in the case of men.[8] Gender differences in health are very high. Men's life expectancy shows a consistent increase from 1995 onwards but suffered a significant decline in the early 1990s, a period of substantial economic and political transition. Estonia has one of the highest premature mortality (defined as standardised mortality rates all causes, for those aged 0-64) in the EU, and is especially high in the case of men: 198.1 deaths for females (0-64) and 604.8 deaths for males (0-64) per 100 000 inhabitants, numbers that are considerably higher than the respective EU averages in 2008. Mortality rates associated with ischaemic heart disease and more generally, diseases of the circulatory systems are some of the EU highest, as are the death rates due to suicide, injuries and road traffic accidents. The incidence rate of tuberculosis is high as is the incidence rate of lung cancer for men. Estonia also registers one of the highest proportions of people that smoke regularly: 26.2% of adults in 2008, though the lowest since 1990, and a significant decrease in the last decade (from 29.4% in 1998).[9] Alcohol consumption has rather increased in recent years (14.8 litres in 2007, compared to 5.5 litres in 1998), except for a decrease in 2008 (14 litres), and is one of the highest in the EU. In 2008, 18% of the population was obese.[10] These values on the health status of the population deserve attention and action to protect population health outcomes and reduce the burden of disease.

# 2. Expenditure prospects: population ageing and future health status

Population – the resident population – is projected to decrease by 200 000 people from 2008 to 2060. Life expectancy is projected to increase by 12.8 years for men and 8.8 years for women, both larger increases than the average projected increases for the EU as a whole. The share of the old (65+) is projected to increase by 13.6 pps (higher than the EU average of 13 pps) and the share of the very old (80+) by 7.3 pps (slightly less than the EU average of 7.8 pps) from 2008 to 2060.

As a result of ageing[11], health care expenditure is projected to increase by 1.2 pps of GDP (below the average change in the EU of 1.7 pps). Good health (translated by a constant health scenario) reduces the projected expenditure increase from 1.2 to 0.4 pps, highlighting the importance of improving health behaviour in a country with both a low health status and low expenditure levels and fiscally constrained.

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7 Data on equipment comes from the Eurostat database.
8 Data on life expectancy and healthy life years is from the Eurostat database.
9 Data on life-styles comes from EUROSTAT and WHO health data.
10 In 2005, the International Obesity Task Force suggested a 15% figure for women and 10% for men.
11 I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf).

# 3. Health care coverage and expenditure

The Estonia Health Insurance Fund (EHIF) purchases and reimburses care for about 96% of the population based on residence and group membership (e.g. unemployed, children, pensioners, full time carers). The EHIF establishes contracts with care providers. The system is financed primarily through mandatory contributions (earmarked payroll tax on employees and self-employed) and through taxation revenues that pay for ambulance and emergency care and health promotion and disease prevention.

Despite an increase in population coverage, 4% of the population are still uninsured and have access to emergency care only. Cost-sharing applies to home and outpatient visits, hospital stays and medicines, though pensioners and children below 16 have lower out-of-pocket payment. Adult dental care is not covered by the EHIF. The share of private expenditure on health in total health expenditure (20.6% in 2008) is slightly below the EU average (22.7% in 2008), and is the lowest percentage since 2000 (22.5%). Out-of-pocket expenditure constitutes about 19.7% of total health expenditure (13.2% in 1998, 20.3% in 2003) and stands above the EU average (14.4% in 2008). From the point of view of access, a smaller share of private expenditure than that of its Baltic neighbours and the way cost-sharing is applied across services may ensure better access to basic health care services in Estonia than in Latvia and Lithuania. Out-of-pocket expenditure may still pose barriers to access to low income groups and uninsured (authorities do acknowledge socio-economic differences in the use of services). However, access to primary care is considered to be very good due to the high numbers of general practitioners (GPs), the ability to see the GP within 3 days, and a 24-hour free primary care counselling phone line. Cost-sharing also appears to encourage greater use of primary care services vis-à-vis specialist and inpatient care, which can be cost-effective. Nevertheless, different measures of the reform of the sickness insurance regime may have important, if not reverse effects in the future. For instance, EHIF compensations are only paid now from the 9$^{th}$ sickness day. Before that, the employer has to cover the costs. While some informal payments exist in the health sector, they do not appear to be widespread or significant in magnitude and are largely on the patient's own initiative.

Moreover, the authorities acknowledge long delays for specialist consultations and inpatient care. They have therefore established centrally managed waiting lists and additional resources to services with the longest lists.

# 4. Collection, pooling and allocation of financial resources

77.8% of total health expenditure funding comes from social insurance contributions (earmarked payroll tax) plus government taxation, 19.7% from out-of-pocket, a bit more than 1% from private insurance and the rest from financial contributions from the rest of the world. An issue of concern is that funding is strongly based on employment-related contributions but the share of non-contributing individuals such as children and pensioners is almost half of the insured. The authorities recognise the narrow revenue base, strongly based on wages (notably in the context of ageing). They wish to enlarge the revenue base for the sector to ensure the long-term sustainability of the sector financing.

The EHIF (which has four regional branches but acts as one purchaser of care) uses its budget to establish contractual arrangements with providers, remunerate doctors, and reimburse medicines. Total and public expenditure in administration and insurance as a % of GDP (both 0.1% in 2008) are below the EU average (respectively 0.4% and 0.3% in 2008). Total and public expenditure on administration and insurance as a % of total current expenditure on health (respectively 2.3% and 2.1% in 2008) are also below the EU average (respectively 4.4% and 3.1%).

There is an overall budget constraint defined annually for public spending on health which is quite detailed and transparent. Expenditure cannot exceed revenue. However, revenue and expenditure do not necessarily have to match in each financial year, as the EHIF has some accumulated reserves (around 1% of GDP) and could in principle use those to finance expenditure. In practice though, expenditure has indeed followed the same pattern as revenue. Therefore, when for example the budget has run out, hospitals may postpone surgical interventions for the following year or else the patient has to pay for the full cost.

# 5. Providers status, referral systems and patient choice

Provision is under private law. Primary care is provided by self-employed family practitioners (FPs) and nurses or by family practitioner group practices (owned by family practitioners). Ambulatory specialist care is provided in health care centres, hospital outpatient departments and specialists' own practices. Inpatient hospital care is provided in regional, central, general or local hospital (state or municipally owned). Outpatient and inpatient providers establish contracts with the EHIF.

The total number of practising physicians per 100 000 inhabitants (335 in 2008 vs. 306 in 1998) is about the EU average (322). Data on the physician skill/mix indicates that the number of general practitioners (GPs) per 100 000 inhabitants (105.3 in 2007) is one of the highest in the EU average as part of the authorities' long term effort to improve primary care provision. This has resulted in a relatively good access to primary care to the insured population. The number of nurses (670 in 2008) per 100 000 inhabitants is below the average but slightly higher than in 1998 (650).[12] Estonia may have suffered from staff migration to other EU countries where qualified health staff was needed and wage levels were higher. In addition, about 68% of all physicians had more than 45 years of age in 2007 which indicates that ageing can significantly affect the provision of health. To retain staff the authorities had increased wages in the sector prior to the crisis but this trend has been reversed with the economic crisis to improve fiscal balances. In the long-run this may not be sustainable from a human resources point of view and the authorities may need to reinforce their current efforts to implement a comprehensive human resources strategy to motivate and retain staff within the sector in view of possible staff shortages due to migration and ageing. Note that the authorities have put strong efforts to concentrate medical training, emphasise primary care training of doctors and nurses and bring training in line with EU law, and to start developing human resources planning in the sector.

Since the early 1990s, national authorities have made a significant and successful effort to enhance primary care provision and to strengthen the referral system from primary care to specialist doctors and the gatekeeping role of FPs (to reduce the unnecessary use of specialist and hospital care). All inhabitants have to register with a FP, who acts as family doctor and as a gatekeeper referring patients to other specialists and hospital care. Patients can choose their FP and choose the specialist after referral. This referral and coordination role is to be further enhanced through the use of ICT systems that have started to be implemented since 2005 and include electronic patient records, digital registration, digital prescriptions and digital imaging. These can help control expenditure growth in the longer run.

Estonia has seen a large reduction in the number of acute care beds per 100 000 inhabitants in the last decades, and its number is now about the EU average (385.2 vs. 383.2 in 2008). Some acute care beds and hospital facilities could be turned into long-term care beds / facilities (which are needed and can reduce unnecessary bed blocking in acute care settings). Further reducing hospital capacity, increasing bed occupancy rates and bed turnover rates, increasing the number of day case

[12] Data on health care staff comes from EUROSTAT database.

surgery and outpatient cases, and concentrating high-tech complex care in a few facilities (centres of excellence) are perhaps areas where further improvements can still be made (see further).

Public (2.7%) and total (4.2%) capital expenditure as percentage of total health expenditure in 2008 was about the EU average (2.4% and 4.1% in 2008), after a significant increase since 2007 (around the triple in 2008 compared to 2007), which is consistent with the technology trends observed in section 1 and ERDF investments to hospital buildings to concentrate acute inpatient care to fewer buildings and make provision of care more effective.

# 6. Purchasing, contracting and remuneration systems

Payments systems have evolved much over the years and consist of a mix of remuneration types. GPs receive a mix of capitation, base fee, distance fee for remote practices, fees for defined services and bonus payments for health promotion, disease prevention and disease management activities. This mixed system intends to render primary care more attractive and to provide incentives for primary care provision including some health promotion, disease prevention activities and disease management. All other staff is remunerated on a salary basis.

Hospital average length of stay (7.9 days in 2008) is the same as the EU average, having slightly decreased from 8.8 in 2000. The proportion of hospital surgery done as day cases was 16.2% in 2007, a significant increase from 4.3% in 2000 but still below the EU average of 28.1%. Further reducing the emphasis on hospital care, increasing the share of day case surgical interventions, reducing average length of stay, and increasing outpatient specialist care and primary care visits (especially family nurse visits) are still priorities the authorities wish to pursue and which could lead to more value for money in the sector. Hospitals remuneration is a mixed of activity-based payment using DRGs (diagnosis related groups), fee-for-services and bed-days. Further reliance on prospective payment on the basis of DRGs was planned. Although significantly improved and based on complex criteria, the basis for establishing contracts between the EHIF and the various providers could perhaps be further improved in the long run to favour cost-effective interventions when health technology assessment is applied more regularly.

**Pharmaceuticals**

Imported medicines now come from Western Europe rather than the former Soviet Union, which resulted in a large increase in prices. In order to control overall expenditure the authorities have implemented a large number of policies. The initial price decision is based on a) international prices, as well as b) economic evaluation and c) the cost of existing treatments. In addition, authorities implement 1) price-volume agreements, together with 2) reference pricing, whereby the maximum reimbursement level of a prescribeddrug is based on the second lowest price of existing drugs that have the same active ingredient and form, and 3) the definition of positive lists (as much as possible based on economic evaluation). The authorities also implement prescriptions guidelines and monitor prescription patterns of physicians who get feedback once a year. These policies have been very useful in controlling pharmaceutical expenditure growth. Perhaps the authorities could explore if these policies, which currently apply only to reimbursable pharmaceuticals, could be extended to non-reimbursable medicines especially in the context of high out-of-pocket payments

# 7. Information and monitoring, use of cost effectiveness and health promotion

Data has substantially improved in recent years. Information on activity and services is collected by the EHIF and the Ministry of Social Affairs on a routine yearly basis. Providers are obliged to provide annual data reports according to national standards. This information is used for contracting

purposes and allocation of funds. The Hospital Network Development Plan is used to make projections of hospital activity and future hospital capacity needs and thus hospital licensing and hospital service regulation (and helped adjusting/reducing hospital capacity over the years). There are other plans for other services.

While there is currently no systematic programme to conduct health technology assessment, there is however some assessment of new services prior to their addition to the benefits package and some assessment of the need for high-cost technologies. The authorities and professional associations are developing treatment guidelines to harmonise and rationalise medical practices.

The government has approved the Public Health Development Plan for 2009-2020 with the objective of continuously improving the health status of the population: increasing average life expectancy at birth, increasing healthy life years and reducing socio-economic inequalities in health. This plan denotes a recent much stronger concern with health promotion and disease prevention. As section 1 highlighted, there are indeed a number of risk factors to health, which deserve attention. Vaccination rates (95% for polio in 2008) are still below the EU average but have increased since 1998 (94%) and screening rates, for example for breast cancer, are good (55% of the target population in 2006) in the EU context and given the level of Estonia' expenditure on health. Total and public expenditure on prevention and public health as a % of GDP (both 0.2% in 2008) are only slightly below – or about – the EU average (respectively 0.3% and 0.2%) but higher than its Baltic neighbours. Total (2.8%) and public (2.6%) expenditure on prevention and public health as a % of the total expenditure on health are in fact higher than the EU average in 2008, denoting the authorities' emphasis to improve life-styles and disease prevention. The introduction of a smoking ban (2005 and 2007), strict regulation of tobacco advertisement, accompanied by strategies to increase the price of tobacco and alcohol are policy steps that can contribute to improving life-styles in the long-run.

# 8. Challenges

The analysis above shows that a wide range of reforms have been implemented over the years, many quite successfully (e.g. the development of a strong primary care system that patients can easily access and which can contribute to control cost and ensure the cost-effectiveness of the systems; the development of data collection and monitoring of inputs, processes, outputs and outcomes use for decision-making), and which Estonia should continue to pursue. The main challenges for the Estonian health care system are as follows:

- To improve, as acknowledged by the authorities, the basis for more sustainable and enhanced financing of health care in the future (e.g. considering additional sources of general budget funds), with a better balance between resources and demand, between the number of contributors and the number of beneficiaries and which can improve access and quality of care and its distribution between population groups and regional areas. If more resources are brought into the sector it is important that they do not remain fragmented but are pooled together, maintaining the strong pooling mechanisms in place today.
- To define a comprehensive human resources strategy to ensure a balanced skill-mix, avoid staff shortages and motivate and retain staff within the sector in view of ageing and migration.
- To continue the efforts to decrease hospital beds and average length of stay while increasing day case surgery and concentrating high-technology hospital services. Increasing insurance coverage to the uninsured population, while improving access, could also decrease the unnecessary use of emergency care services (currently the only services to which uninsured individuals have access).

- To continue the efforts to gather and make more use of cost-effectiveness information in determining the basket of goods and the extent of cost-sharing.
- To continue to work on public health priorities defined in the 2009-2020 Plan and continue to enhance health promotion and disease prevention activities, i.e. promoting healthy life styles and disease screening given the recent pattern of risk factors (diet, smoking, alcohol, lack of exercise, obesity).

# Statistical Annex - Estonia[13]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 5.6 | 5.9 | 5.3 | 4.9 | 4.8 | 5.0 | 5.2 | 5.1 | 5.1 | 5.4 | 6.1 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 406 | 444 | 454 | 447 | 497 | 566 | 639 | 696 | 792 | 911 | 1033 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 4.8 | 4.7 | 4.1 | 3.8 | 3.7 | 3.9 | 3.9 | 3.9 | 3.8 | 4.1 | 4.8 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 348 | 344 | 351 | 352 | 383 | 436 | 483 | 534 | 580 | 689 | 804 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 5.1 | 5.3 | 5.5 | 5.8 | 6.0 | 6.1 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 7200 | 7600 | 8600 | 9200 | 10200 | 11300 | 12400 | 13800 | 15400 | 17100 | 16900 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | : | : | : | 0.2 | 0.4 | 0.5 | 0.8 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | 0.4 | 0.4 | 0.5 | 0.7 | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | : | : | 0.7 | 0.7 | 1.1 | 1.5 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | : | 1.1 | 1.2 | 1.2 | 1.3 | 1.2 | 1.3 | 1.2 | 1.2 | 1.2 | 1.3 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | : | 0.5 | 0.5 | 0.6 | 0.7 | 0.5 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | : | : | : | : | : | : | : | : | 18.0 | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 29.4 | : | 29.4 | : | 28.9 | : | 28.0 | : | 29.9 | : | 26.2 | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 5.5 | 6.3 | 10.7 | 11.2 | 11.7 | 12.8 | 14.7 | 13.1 | 13.4 | 14.8 | 14.0 | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 75.4 | 76.0 | 76.2 | 76.4 | 77.0 | 77.1 | 77.8 | 78.1 | 78.6 | 78.8 | 79.5 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | : | : | : | : | 53.3 | 52.2 | 53.7 | 54.6 | 57.2 | 62.3 | 61.6 |
| Life expectancy at birth males | 63.9 | 64.7 | 65.2 | 64.8 | 65.2 | 66.1 | 66.4 | 67.3 | 67.4 | 67.2 | 68.7 | 76.3 | 75.9 |
| Healthy life years at birth males | : | : | : | : | : | : | 49.8 | 48.0 | 49.4 | 49.5 | 52.7 | 61.5 | : |
| Infant mortality | 9.4 | 9.6 | 8.4 | 8.8 | 5.7 | 7.0 | 6.4 | 5.4 | 4.4 | 5.0 | 5.0 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | : | : | : | : | : | : | 94.1 | 94.3 | 95.0 | 95.9 | 95.6 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 86.3 | 77.5 | 77.2 | 78.6 | 77.1 | 77.0 | 75.5 | 76.7 | 73.3 | 75.6 | 77.8 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 13.2 | 14.1 | 19.9 | 19.0 | 20.1 | 20.3 | 21.3 | 20.4 | 25.1 | 21.9 | 19.7 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | 3.5 | 3.7 | 4.3 | 4.5 | 3.9 | 3.6 | 3.4 | 2.7 | 2.6 | 2.3 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | 2.9 | 2.9 | 3.6 | 3.7 | 3.9 | 3.5 | 3.3 | 2.7 | 2.6 | 2.2 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | : | : | : | : | : | : | : | : | : | 68.1 | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 305.7 | 310.9 | 309.7 | 303.9 | 314.7 | 316.6 | 321.7 | 318.1 | 320.9 | 323.4 | 335.0 | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 650.0 | 644.3 | 623.1 | 617.4 | 643.4 | 652.4 | 655.0 | 663.0 | 658.7 | 665.8 | 670.0 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 64.5 | 80.8 | 88.2 | 85.4 | 92.7 | 95.5 | 100.2 | 99.8 | : | 105.3 | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 587.1 | 585.1 | 556.0 | 520.3 | 451.2 | 440.4 | 426.7 | 382.2 | 393.8 | 380.4 | 385.2 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 6.4 | 6.3 | 6.3 | 6.2 | 6.1 | 6.2 | 6.3 | 6.4 | 6.4 | 6.6 | 6.5 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | 19947 | 19319 | 18720 | 18678 | 18841 | 17923 | 18307 | 18421 | 18407 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | 891 | 1044 | 1212 | 1359 | 1656 | 2494 | 3033 | 3559 | 3716 | 6120 | 5031 |
| Hospital average length of stay | : | : | 8.8 | 8.5 | 7.9 | 7.7 | 7.5 | 7.7 | 7.7 | 8.0 | 7.9 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | 4.3 | 5.1 | 6.1 | 6.8 | 8.1 | 12.2 | 14.2 | 16.2 | 16.8 | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | : | : | : | : | 135.9 | 162.3 | 166.2 | 184.2 | 195.0 | 214.1 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | : | : | : | : | : | 61.4 | 74.8 | 73.2 | 75.7 | 83.3 | 91.8 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | 20.0 | 22.8 | 25.5 | 27.2 | 24.2 | 25.5 | 24.0 | 23.8 | 21.7 | 21.6 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | : | 8.1 | 10.2 | 13.3 | 14.0 | 10.9 | 11.8 | 10.6 | 9.8 | 9.3 | 9.3 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | 5.7 | 1.8 | 1.8 | 1.8 | 2.5 | 2.2 | 2.3 | 2.6 | 2.7 | 2.8 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | 2.0 | 1.8 | 1.7 | 1.6 | 2.2 | 1.5 | 1.8 | 1.9 | 2.2 | 2.6 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 94.0 | 91.2 | 92.5 | 97.0 | 94.2 | 94.6 | 95.1 | 95.9 | 95.2 | 95.2 | 95.0 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | : | : | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[13] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Ireland

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (33900 PPS in 2008) is higher than the EU average (25075 PPS) and having considerably increased since 1998 (20600). However, Ireland was hit hard by the economic crisis with a GDP growth of -7.1 in 2009. The recovery is projected to be slow with a negative growth of -0.9% in 2010 turning into a 3% growth in 2011.[1] Fiscal consolidation, which started in mid-2008, to bring government revenues and spending into line has and is likely to continue to have consequences for the health sector.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (8.7% in 2008) is below the EU average[3] (9.6% in 2008) having increased from 6.2% in 1998.[4] Public expenditure on health as a percentage of GDP is also below the EU average (6.7% compare to 7.4% in 2008) although it has increased from 4.6% in 1998. Hence, the rise in expenditure is probably mostly due to an increase in public expenditure. Note that GDP growth in Ireland has been high throughout the decade which may help explain the fact that the ratios are below the EU average. Indeed, both total (3102 PPS) and public (2386 PPS) per capita expenditure are significantly higher than the EU average (2381 PPS and 1826 PPS in 2008) and have significantly increased since 1998 (1263 and 947 PPS).

**The role of technology**

Total expenditure on pharmaceuticals as a percentage of GDP[5] is the same as the EU average (1.5% in 2008), having increased from 0.8% in 1998. The number of MRI, CTS and PET units per 100 000 inhabitants (0.9; 1.4; and 0.2 in 2008) is about EU average, showing a slight increase.

**Health Status and healthy behaviour – life-styles – risk factors**

Life expectancy (82.3 for women and 77.5 for men in 2008) and healthy life years (65 for women and 63.2 for men in 2008) are among the highest in the EU and show an increasing trend.[6] However, mortality by ischemic heart disease, breast cancer and prostate cancer is relatively high by OECD standards.[7] The authorities also recognise the large health inequalities between socio-economic groups as a policy challenge. Data suggests an increase in the proportion of the population which is obese (from 11% in 1998 to 14% in 2008)[8], although not as large an increase as in other EU countries. In comparison, alcohol consumption is one of the highest in the EU, despite a decreasing trend since 2002. Data also indicates that, since the mid-1980s, there has been a decrease in the share of the population that smokes regularly but this share remains one of the EU highest

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1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on expenditure for Ireland is taken from OECD health data.

3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 Note that given the large amount of profits exported by foreign companies based in Ireland, it may be interesting to consider total expenditure on health as a percentage of GNI (Gross National Income), which was 10.2% in 2008.

5 Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.

6 Data on life expectancy and healthy life years is from the Eurostat database.

7 Mortality rates are based on the crude number of deaths according to selected causes in the WHO Mortality Database; they have been age-standardised to the 1980 OECD population, to remove variations arising from differences in age structures across countries and over time within each country (OECD Health at Glance 2009).

8 Source: SLAN 2007 (Survey of Lifestyle, Attitudes and Nutrition in Ireland). More than one-third of respondents (36%) reported themselves as being overweight and 14% reported being obese, according to the body mass index (BMI). Corresponding self-reported data on obesity levels from previous SLAN reports: 11% (1998) and 15% (2002).

and may have increased in recent years (27% in 2002 to 29% in 2007). These values deserve attention and action and the smoking ban, which Ireland pioneered in 2004, has been a step in that direction.

## 2. Expenditure prospects: population ageing and future health status

Population is projected to increase by 2.3 million from 2008 to 2060. Life expectancy is projected to increase by 7.7 years for men and 7.3 years for women. The share of the old (65+) is projected to increase by 14 pps and the share of the very old (80+) by 13.6 pps (both more than the respective EU average of 13 and 7.8 pps) from 2008 to 2060.

As a result of ageing[9], health care expenditure is projected to increase by 2 pps of GDP (slightly above the average change in the EU of 1.7 pps). In Ireland, improvements in good health reduces the projected expenditure increase by half (from 2 pps to 1 pps) highlighting the importance of improving health behaviour. Overall, projected health care expenditure increase is expected to add to the strong budgetary pressure from other age-related items of public expenditure (mainly pensions) contributing to challenges for long-term sustainability of public finances.

## 3. Health care coverage and expenditure

All persons are eligible to receive public acute hospital services, subject to co-payments for those who do not qualify for a means-tested medical card[10], although some groups are exempted from co-payments (e.g. pregnant women, those suffering from certain medical conditions) and there is an annual cap on out-of-pocket payments. A medical card ensures free access to all general practitioner services, prescribed drugs[11], emergency, inpatient, outpatient, dental, eye and maternity care. Those with an income up to 50% above the income threshold for a medical card are eligible to free general practitioner services (GP visit card holders). The remainder of the population are not entitled to free GP services.[12] Non-medical card holders are not covered for eye and dental care and must also pay the first €120 each month towards prescribed pharmaceuticals; thereafter the public health system covers 100% of the cost.

In recent years, private expenditure as a percentage of total health expenditure has slightly decreased (from 25% in 1998 to 23.1% in 2008) above the EU average (22.7% in 2008). This is reflects efforts to improve access and increase service coverage via an increase in the number of medical card holders and GP visit card holders. Note also that more than 40% of the private expenditure is voluntary community-rated health insurance[13] (which 50% of the population takes up) to help cover for a) cost-sharing (complementary insurance) when not eligible for a medical card, b) the services and goods excluded from the benefit basket (supplementary) and c) the same goods and services as the primary coverage (duplicative).[14] It would be important that this type of insurance does not discourage the recourse to the most cost-effective services (e.g. more primary care than specialist care or hospital care when the latter are unnecessary). Out-of-pocket payments

[9] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).

[10] Held by approximately 1/3 of the population.

[11] A prescription charge of €0.50 per item in respect of items dispensed to medical card holders was introduced with effect from 1 October, 2010 subject to a monthly cap of €10.00 per person or family.

[12] As a result, Ireland scores a bit above 5 on the scope of basic coverage (the third lowest OECD value) and a bit below 5 out of 6 on the depth of coverage according to the OECD scoreboard.

[13] See for instance McDaid D, Wiley M, Maresso A and Mossialos E. Ireland: Health system review, Health Systems in Transition, 2009; 11(4): 1 – 268.

[14] In addition, in 2002 the Government established the National Treatment Purchase Fund to pay for the treatment in the private hospital sector of patients deemed to have been waiting for too long for surgery in the public hospital system.

remain quite stable over the last decade (14.5 in 1998) and are 14.4% of total health expenditure, a rather small share in the EU context.

Hence, general improvements in service and the increase in cost-coverage for a part of the population help explain the increase in public and total expenditure observed in the last decade.

# 4. Collection, pooling and allocation of financial resources

In 2008, 76.9% of total health expenditure funding came from government sources (taxes at central level) and from the Health Contribution Levy, about 14.4% from out-of-pocket and the rest from private insurance. The Health Levy on incomes doubled in May 2009, the lower rate rising from 2% to 4% and the higher rate from 2.5% to 5%.[15]

There has been an effort in recent years to reduce administrative costs and improve the general management of the sector. In 2005 the Health Service Executive (HSE) was created merging 11 previously separate and specialised agencies (including Health Boards).

The health reform programme underway continues to build on the establishment of the HSE to achieve a single, nationally consistent and more cost effective service delivery system.

On 1 November 2010 a voluntary early retirement (VER) scheme and a voluntary redundancy (VR) scheme for certain categories of staff in the public health service was announced. The purpose of the schemes is to achieve a permanent reduction in the numbers employed in the public health sector from 2011 onwards and to facilitate health service reform. The VER and VRS schemes are open to management and administrative staff and general support staff only but priority will be given to management and administrative grades.

As regards the funding of the HSE, the budget is determined by the Parliament. Each year the Parliament (Oireachtas) votes public monies to fund the services provided by or on behalf of the HSE. The HSE submits for the Minister for Health and Children's approval, its National Service Plan setting out the type and volume of services to be provided by the HSE that year. The HSE is required to operate within the limits of its allocation, as approved by Parliament, in delivering at a minimum, the levels of service which are provided for in the Plan. During the course of the year, detailed information related to service activity level and expenditure levels are provided to the Minister by way of monthly Performance Monitoring Reports against the Plan.

# 5. Providers status, referral systems and patient choice

The public health service is a mix of public and private provision. Primary care is delivered in public health centres and private premises of general practitioners (GPs). A recent initiative has seen development of Primary Care Centres within which both GPs and a range of primary care professionals employed by the HSE are housed. Outpatient specialist care is delivered in hospital outpatient departments. Approximately 85% of acute care beds are within the public hospital system. Persons may also decide to access services in the private hospital sector and in most such cases patients use private health insurance to meet the costs involved.

[15] Note that the OECD indicates that reliance on levies should not be the cornerstone of a rational system of taxation and thus recommends that health levy be integrated into the income tax system while broadening the income tax base. The Government has indicated that it is examining the integration of various levies, including the Health Levy.

The number of licensed physicians per 100 000 inhabitants in Ireland is below the EU average[16] in 2008 and has increased (324 in 2008 as against 219 in 1998). The number of general practitioners (GPs) per 100 000 inhabitants was 53.4[17] in 2007 and has increased slightly (51.9 in 2004).[18] The number of nurses per 100 000 inhabitants (1615 in 2008) is one of the highest in the EU and has consistently increased over time (1312 in 1998).[19] The number of primary care teams (integrated multi-disciplinary teams of general practitioners, nurses, home helps, physiotherapists, occupational therapists and others) has also increased and the authorities have pledged to reach 530 teams by 2011. In October, 2010, 294 Primary Care Teams were operating (holding clinical team meetings on individual client cases and involving GPs and Health Service Executive staff). The numbers suggests that the skill mix is improving in the direction of a more primary care oriented provision. There may still be issues of staff reallocation across skills: between different physician specialties and between types of nurses for example. About 41.2% of all physicians were aged over 45 in 2008 (below the EU average) suggesting a younger staff structure than in other EU countries. Therefore, further strengthening of primary care staff proposed by authorities appears to be in the right direction. Also, since 2008 the authorities have introduced a health staff planning instrument, which should help identify in which geographic areas or medical specialties there are staff shortages.

Medical card and GP Visit card holders are free to select any GP participating in the General Medical Services (GMS) Scheme but must continue to use this GP subject to applying to and getting approval from the Health Service Executive (HSE) for a change of GP under the GMS Scheme. The remainder of the population can choose a primary care physician but must pay the full private fee for this service. Access to specialist medical services in acute hospitals is available only on foot of a referral by a primary care physician. The delivery of specialist medical care and care utilisation is strongly centred on hospitals where most specialists work.[20] Authorities have planned the greater use of ICT and a standard approach to the use of electronic health information, which can help in implementing more effective referral systems and care coordination and as a consequence improve effectiveness and efficiency of care. Legislation is currently being drafted to enable the greater usage of such information by means of unique health identifiers and to set standards to provide appropriate confidentiality and security.

In 2007 the number of acute care beds per 100 000 inhabitants was 267.4, compared to an EU average of 388.6. A review of acute hospital bed capacity completed in 2007 concluded that given the demographic and chronic disease challenges facing the country's health services in the coming decade and beyond, the current extent of reliance on acute hospitals for service delivery was neither sustainable nor in the best interests of patients. It recommended an integrated approach to health service delivery involving substantial change in the way care is provided. Among the measures proposed were significant increases in day beds in hospitals, more long-term care beds, more rehabilitation beds, strengthening primary care and more services in community-based, non-acute hospital settings. These recommendations are informing the ongoing development and reconfiguration of acute hospital and other services in order to ensure that safe and cost-effective care is provided in the most appropriate setting.

[16] The EU average refers to those practising rather than licensed, so the real difference in figures may be wider.
[17] Excludes trainees, over 70 years old and those overseas.
[18] Source: Irish College of General Practitioners (ICGP).
[19] Information provided is the total number of active registered nurses on the Nursing Board's register. This does not necessarily mean that each nurse is active in the field of nursing. It is not possible to extract practising nurses only from this source.
[20] Indeed, according to the OECD, the level of choice has a score of a bit more than 4 out of 6, while gatekeeping scores 2 out of 6.

# 6. Purchasing, contracting and remuneration systems

GPs are paid on a capitation (per number of registered patients) basis plus a fee-per-item basis for specified services (e.g. immunisations) for medical card and GP visit card patients (i.e. 38.1% of the population as of 30 September, 2010).[21,22] However, there could be room to use performance-related payments to encourage health promotion, chronic disease prevention or disease management actions.

Historically, specialists have been permitted to engage in private fee-for-service practise in conjunction with the receipt of salary as public hospital employees. This dual practice in conjunction with the presence of duplicative private insurance (private insurance that covers the same goods and services as the primary coverage) risked inducing specialists to devote an excessive proportion of their time to private practice, with consequent negative effects of the service for public patients. As an attempt to mitigate the problem, authorities have created a new employment contract for specialists, granting that a proportion of consultants will not have any fees from private practice while those who engage in private practice are obliged to have a minimum of 80% public patients workload.[23]

Over the decade and as a consequence of the boom, Irish doctors have become some of the best paid in the EU. Public remuneration is determined by the central government and following the severe economic crisis national authorities have been strongly controlling the wages in the health sector.

Hospitals are paid on a combination of prospective global budgets and activity-related/DRG payment. Efforts continue to improve cost transparency and efficiency in the sector. These also include an increase and high proportion (higher than the EU average) of procedures conducted as day cases (respectively 54.6% of day case discharges over total discharges and 38.7% for day case surgical procedures as a % of total procedures in 2007), and a decrease in hospital average length of stay – ALOS – (6.2 days in 2007 and below the EU average of 8 days), although OECD data shows that ALOS can be high in Ireland for specific diseases. These facts may have helped controlling overall expenditure.

**Pharmaceuticals**

The initial price of all reimbursable medicines is based on clinical performance, economic evaluation, the cost of existing medicines and international prices (based on the average manufacturing price in BE, DK, FR, DE, NL, ES, UK, FI and AT). Discounts and rebates plus price freezes and cuts are measures to control expenditure directly. The authorities promote more rational prescribing by physicians and prescribing behaviour in relation to medical card holders is monitored.

An explicit generic policy has not yet been implemented but under an agreement with the industry, patent expired medicines are liable for a reimbursement price reduction of up to 61%.

The Irish Government has approved a proposal to introduce a system of reference pricing combined with generic substitution under the General Medical Services and community drugs schemes. This will promote price competition and deliver ongoing savings for both the State and for patients. Achieving greater value for money in this area of expenditure has been the focus of much recent attention while ensuring that patients can continue to access innovative and affordable medicines.

[21] The remaining 61.9% of the population must pay GPs on a private fee per visit basis.

[22] The OECD score for remuneration incentives to raise the volume of care is 3 out of 6 for Ireland as a result of this mix of fee-for-service, salary and capitation systems.

[23] Monitoring arrangements based upon measurement of activity and case-mix have been introduced.

A report of a working group setting out a proposed model for the implementation of this initiative has been published. Significant progress on the recommendations of the report in 2010 is expected, including the identification of legislative and administrative changes required to give effect to them in 2011.

More generally, an Expert Group on Resource Allocation and Financing in the Health Sector was established by the Ministers for Health and Children and Finance in 2009. The Group presented its Report in July, 2010. Detailed consideration is being given to all the recommendations which can be expected to inform further reform payment mechanisms.

# 7. Information and monitoring, use of cost effectiveness and health promotion

The Health Information and Quality Authority (Incorporating the Office of the Chief Inspector of Social Services) was established in mid 2007. It has a broad range of functions which include the setting and monitoring of service standards and health technology assessment. The Chief Inspector of Social Services currently registers residential services for older people and inspects children's services. Immediate priorities to be pursued by the Authority in the roll-out of its developing remit include the following:

- significant expansion of its standards based registration and compliance functions to include acute public and private hospitals;
- progressing the development of a number of technical standards for health information;
- undertaking Health Technology Assessments in priority areas to support investment and disinvestment decisions.

Arrangements to nationally mandate clinical guidelines do not currently apply. However, in tandem with the concerted measures currently underway to apply licensing based standards more widely within the healthcare system, a framework to operate a formal system of clinical effectiveness is being examined. This national framework will cover both clinical guidelines and clinical audit.

In 2003 (latest available data)[24] public expenditure on prevention and public health services as a % of GDP (0.2%) and as a percentage of total current health expenditure (2.5%) were respectively about and above the EU average. Vaccination rates have been increasing (93% in 2008) although they remain below the EU average (96%). Screening rates for breast cancer are relatively high, with breast screening achieving an acceptance rate of 75% among the known target population in 2008. The target for the national cervical screening programme is an 80% uptake rate.

# 8. Challenges

The analysis above shows that a wide range of reforms have been implemented over the years, some quite successfully like an increase in population health care coverage. Efforts have also been made to develop a stronger primary care system and improve hospital remuneration policies that Ireland should continue to pursue. However, some policies have met with a number of obstacles and there may be room for improvements in a number of areas. On the basis of the analysis above the main challenges for the Irish health care system are as follows[25]:

[24] Source: OECD Health Data.

[25] The OECD overall efficiency score for Ireland is about 3 additional years of life, compared to the group average of 2.5 years if efficiency of health care delivery improves and notably through the reduction of health inequalities. Areas for improvement include: reducing the emphasis on hospital and inpatient care, while improving output in the hospital

- To explore the means to improve the way private and public provision are better integrated in an overall provision framework and reconsider the current system of payment incentives which may be detrimental to public patients and the public sector.
- To consider changes in payment procedures to physicians (e.g. through the use of mixed payment schemes) to encourage health promotion, disease prevention and disease management activities in primary care and make primary care more attractive; To implement measures to prevent chronic diseases and their complications.
- To continue to enhance primary care provision by increasing the numbers and spatial distribution of primary care professionals and ensuring an effective referral system from primary to specialist care and from specialist to primary care. This could improve access to care by different population groups and reduce unnecessary use of hospital care and therefore overall costs. Recent developments include approval of a national GP messaging standard and commencement of a project to recommend standard content and processes for referrals by the end of 2010. A related challenge in streamlining patient care is the introduction of individual patient identifiers which is being addressed in a pending Health Information Bill. These improvements could be complemented with incentives, both financial and non-financial, to encourage the use of primary care versus specialist care.
- To reduce unnecessary use of specialist and hospital care and within hospitals, ensuring that care is provided in the most clinically appropriate and cost-effective way, for example by maximising the proportion of elective care provided on a day case basis, day-of-surgery admission and reducing inappropriate lengths of stay.
- To consider additional measures regarding direct pharmaceutical expenditure control, product reimbursement on the basis of cost-effectiveness information and greater use of generics vs. branded goods as well as considering incentives for good prescribing practices and the monitoring of prescription of drugs for all patients.
- To continue to enhance managerial accountability and decrease administrative costs while aligning incentives (payments, cost-sharing) with national public health goals and effectiveness and efficiency.
- To improve data collection in some crucial areas such as resources and care utilisation. Better monitoring of activity in the sector, combined with greater use of health technology assessment could be used for planning purposes and for defining the extent of cost-sharing. This could also include additional efforts to assess and publish evaluations of the quality of care provided for example.
- To further enhance health promotion and disease prevention activities i.e. promoting healthy life styles and disease screening given the recent pattern of risk factors (diet, smoking, alcohol, obesity).

sector, improving referral systems and gatekeeping, introducing additional incentives for providers to increase output, improving data collection in a number of areas including spending and setting priorities on which to base resource allocation. Better and more public information on output and prices can help support patient choice and reduce the stringency of regulation if Ireland wishes to continue to emphasise choice and private provision.

# Statistical Annex - Ireland[26]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 6.2 | 6.2 | 6.3 | 6.9 | 7.1 | 7.4 | 7.6 | 7.5 | 7.5 | 7.5 | 8.7 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1263 | 1362 | 1534 | 1777 | 2008 | 2166 | 2350 | 2449 | 2607 | 2795 | 3102 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 4.6 | 4.6 | 4.6 | 5.1 | 5.4 | 5.7 | 5.9 | 5.8 | 5.7 | 5.8 | 6.7 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 947 | 1028 | 1155 | 1353 | 1534 | 1655 | 1810 | 1877 | 1989 | 2145 | 2386 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 5.9 | 6.1 | 6.5 | 6.9 | 7.3 | 7.6 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 20600 | 22400 | 24900 | 26200 | 28200 | 29200 | 30800 | 32400 | 34400 | 36900 | 33900 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | : | : | : | : | 0.8 | 0.9 | 0.9 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | : | : | 1.0 | 1.3 | 1.4 | 1.4 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | 0.1 | 0.2 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 0.8 | 0.8 | 0.9 | 1.0 | 1.0 | 1.1 | 1.2 | 1.2 | 1.3 | 1.3 | 1.5 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 0.5 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.9 | 0.9 | 1.0 | 1.1 | 1.0 | 1.0 |
| Proportion of the population that is obese | 11.0 | : | : | : | 15.0 | : | : | : | : | 23.0 | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 33.0 | : | : | : | 27.0 | : | : | : | : | 29.0 | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 13.2 | 13.8 | 14.2 | 14.5 | 14.3 | 13.5 | 13.6 | 13.5 | 13.4 | 13.4 | 12.4 | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 79.1 | 78.9 | 79.2 | 79.9 | 80.5 | 80.8 | 81.4 | 81.8 | 82.2 | 82.1 | 82.3 | 82.3 | 82.3 |
| Healthy life years at birth females | : | 67.6 | 66.9 | 66.5 | 65.9 | 65.4 | 64.3 | 64.1 | 65.0 | 65.3 | 65.0 | 62.3 | 61.6 |
| Life expectancy at birth males | 73.4 | 73.4 | 74.0 | 74.5 | 75.2 | 75.9 | 76.5 | 77.3 | 77.4 | 77.4 | 77.5 | 76.3 | 75.9 |
| Healthy life years at birth males | 64.0 | 63.9 | 63.3 | 63.3 | 63.5 | 63.4 | 62.5 | 62.9 | 63.2 | 62.7 | 63.2 | 61.5 | : |
| Infant mortality | 5.9 | 5.9 | 6.2 | 5.7 | 5.1 | 5.1 | 4.8 | 4.0 | 3.7 | 3.1 | : | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 75.0 | 75.5 | 75.3 | 76.1 | 76.4 | 76.4 | 77.0 | 76.6 | 76.3 | 76.8 | 76.9 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 14.5 | 15.0 | 15.2 | 15.0 | 14.5 | 16.0 | 15.6 | 15.5 | 14.5 | 14.1 | 14.4 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | : | : | : | : | : | : | : | : | : | : | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | : | : | : | : | : | : | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | : | : | : | : | : | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | 2.3 | 2.2 | 2.2 | 2.1 | 2.0 | 2.1 | : | : | : | : | : | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | : | : | : | : | : | : | : | 42.3 | 41.4 | 43.6 | 41.2 | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 1312.0 | 1361.0 | 1400.0 | 1483.0 | 1534.0 | 1482.0 | 1502.0 | 1515.0 | 1546.0 | 1550.0 | 1615.0 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 48.0 | 48.0 | 48.0 | 49.0 | 52.0 | 51.0 | 62.2 | 68.3 | 69.9 | : | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 285.1 | 282.4 | 281.1 | 276.8 | 283.0 | 282.2 | 280.9 | 279.8 | 273.6 | 267.4 | : | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | : | : | : | : | : | : | : | : | : | : | : | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | 13805 | 14025 | 13715 | 13722 | 13805 | 13581 | 13678 | 13743 | 13501 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | 7182 | 8147 | 8988 | 9751 | 10470 | 10667 | 15539 | 16499 | 17423 | 6120 | 5031 |
| Hospital average length of stay | : | : | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.5 | 6.3 | 6.2 | : | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | 34.2 | 36.7 | 39.6 | 41.5 | 43.1 | 44.0 | 53.2 | 54.6 | 56.3 | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | : | : | : | : | 322.6 | 366.1 | 403.8 | 453.7 | 499.3 | 560.8 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | : | : | : | : | : | 219.2 | 255.5 | 284.4 | 325.0 | 363.4 | 417.8 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | 13.2 | 14.0 | 15.1 | 15.4 | 15.7 | 15.9 | 16.6 | 17.3 | 18.1 | 18.7 | 18.1 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 8.5 | 8.9 | 9.6 | 10.0 | 10.5 | 10.8 | 11.6 | 12.2 | 12.9 | 13.6 | 13.5 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | : | : | : | : | : | : | : | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | : | : | : | : | : | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | : | : | : | : | : | : | : | : | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | 2.2 | 2.5 | 3.7 | 4.0 | 2.6 | 2.5 | : | : | : | : | : | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 84.0 | 86.0 | 86.0 | 84.0 | 82.5 | 86.1 | 89.3 | 90.3 | 91.2 | 91.9 | 93.0 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | 70.1 | 65.5 | 60.9 | 62.2 | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | 78.4 | 79.5 | 77.1 | 76.6 | 78.1 | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[26] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Greece

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (23100 PPS) is below the EU average although showing a consistent increase since 2000 (16000 PPS). Although Greece was not so hardly hit by this economic crisis in comparison to many other Member States (GDP growth was -2% in 2009), it is currently running a very large budget deficit (13.6% of GDP in 2009) and fiscal consolidation to bring government revenues and spending into line will have consequences for GDP growth (forecasted to be -3% in 2010).[1] Fiscal consolidation can therefore have consequences for the health sector. The government has indeed agreed to a number of policy reforms and the Council has made a number of recommendations that can lead to some changes in the health care sector.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (9.7% in 2008) is about the EU average[3] (9.6% in 2008) having increased from 8.4% in 1998. Public expenditure on health as a percentage of GDP is below the EU average (5.9% compared to the EU average of 7.4% in 2008) although it has increased from 4.4% in 1998. The rise in expenditure may therefore by partly due to an increase in public expenditure. Total per capita expenditure (2293 PPS) is slightly above EU average, while public (1394 PPS) is lower than the EU average (2381 PPS and 1826 PPS respectively in 2008), and both have consistently increased and basically doubled since 1998.

**The role of technology**

Total expenditure on pharmaceuticals[4], both as a percentage of GDP and as a percentage of total current health expenditure, has shown a consistent increase over the last decade (from 1.2% in 1998 to 2.4% of GDP in 2007; from 14.5% in 1998 to 25.8% of total current health expenditure in 2007). These values are above the EU average (respectively 1.5% of GDP and 17.1% of total current health expenditure in 2007). The public share of the total expenditure on pharmaceuticals has grown from 60% to 80% in that period. Public expenditure on pharmaceuticals as a % of GDP (1.9%) and as a % of total current health expenditure (20.4%) is considerably above the EU average (1% and 11.5% respectively). These show a consistent increase since 1998 (0.8% of GDP and 10.1% of TCHE).

There is also a large number of MRI and CTS units per 100 000 inhabitants (2 and 3.1 in 2008). These numbers shows an increase over time and are above the respective EU averages (1 and 1.9 in 2007).[5] All these values are some of the highest in the EU although an important share is in owned by the private sector. The numbers warrant some investigation to see if policy improvements are needed. The increase in total and public expenditure as a % of GDP in the last decade may therefore be partly explained by increases in technology associated expenditure and pharmaceutical expenditure. In particular, there are reports of over prescription of medicines and diagnostic tests due to a lack of monitoring of doctors' behaviour by social security funds or the Ministry of Health. Indeed, recent steps to improve monitoring through e-prescription of medicines and diagnostic tests have already led to a reduction in prescribing.

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1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on expenditure for Greece is taken from OECD health data and WHO health for all databases.

3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.

5 Data on equipment comes from Eurostat database and OECD health data.

**Health status and healthy behaviour – life-styles – risk factors**

Life expectancy (82.4 years for women and 77.7 years for men in 2008) and healthy life years (65.8 for women and 65.4 for men) are currently some of the highest in the EU. Life expectancy has consistently increased up to 2006, although showing a slight reduction in 2007.[6] Healthy life years show an increase since 2004 but have seen higher values in 2006 and 2007. Mortality by lung cancer mortality and stroke is one of the EU highest. Data suggests an increase in the proportion of the population which is obese (from 10.7% in 2002 to 18.1% in 2008). It also suggests that, following a decrease from the late 1980s to 2000, the proportion of people that smoke regularly has again increase from 35% in 2000 to 40% in 2008.[7] These are some of the highest values in the EU and deserve attention and action as they can contribute to reducing population health and consequently enhance the projected increase in public expenditure over the long-run. In this context, the Ministry of health has taken measures so that a total smoking ban is being implemented and enforced efficiently.

# 2. Expenditure prospects: population ageing and future health status

Population is projected to stay more or less constant from 2008 to 2060. Life expectancy is projected to increase by 7.4 years for men and 6.1 years for women. The share of the old (65+) is projected to increase by 13 pps and the share of the very old (80+) by 20.6 pps (greater than the respective EU average of 13 and 7.8 pps) from 2008 to 2060.

As a result of ageing[8], health care expenditure is projected to increase by 1.5 pps of GDP (slightly below the average change in the EU of 1.7 pps perhaps because the population remains constant). In Greece, good health (translated by a constant health scenario) reduces the projected expenditure increase by half (from 1.5 pps to 0.7pps), highlighting the importance of improving health behaviour.

# 3. Health care coverage and expenditure

Compulsory social health insurance through public social security funds plus a National Health Service, ensure 100% population coverage since the mid-1980s. Government intervention ensures means-tested care provision to low income groups and care provision to high-risk groups. The uninsured and the needy are entitled to free access to public hospitals, public hospitals' outpatient consultations and health centres in rural areas. Note that in 2008 there were 30 social insurance funds which, following a new legal framework (law 3655/2008) have been merging and have been progressively reduced to 5 major funds and 8 minor funds. Of these, 6 social security funds with the health insurance function are under the Ministry of Labour (including IKA (employees) OAEE (self-employed) and OGA (farmers)) and one fund is under the Ministries of Health and Finance (OPAD (civil servants)). Under their planned reforms (social security law 3863/2010) the authorities are to further reduce the numbers of funds through the creation of a Consortium of funds acting as a joint purchasing agency: it currently appears to be the plan to reduce the pooling of all the social security contributions to health to that Consortium to buy care from both private and public providers.

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[6] Data on life expectancy and healthy life years is from the Eurostat database. Data on life-styles comes from Eurostat, OECD health data and OECD Health at Glance 2009.

[7] Data on life-styles comes from OECD health data.

[8] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).

Despite full population coverage, the share of private expenditure on health in total health expenditure (39.1% in 2008) is the fourth highest in the EU and considerably higher than the EU average (22.7% in 2008).[9] Out-of-pocket expenditure constitutes about 37% of total health expenditure though showing some reduction since 1998 (45.9%). Cost-sharing applies to all outpatient consultations (€3 co-payment) and pharmaceuticals (10% or 25% of the price), although some groups are exempted (those with certain medical conditions, low income and beneficiaries of social benefits and pregnant women). From the point of view of reducing moral hazard, the fact that cost-sharing for basic primary coverage schemes cannot be covered by additional private insurance means that cost-sharing can play the role of controlling overconsumption. However, it would be important to see if cost-sharing, as it currently stands, encourages the use of more cost-effective services: e.g. more use of primary care than specialist care, preventive vs. curative care when specialist or hospital care is not necessary. It is important to note that an important share of private expenditure is not solely associated with cost-sharing for publicly funded services. In fact, a large share of private expenditure refers to direct payments for care, such as in the case of dental and eye care and physiotherapy services, which are not covered by social health insurance or provided by the NHS and associated with diagnostic tests. Indeed, there are reports of lack of collection of co-payments by hospitals and health centres. Authorities are currently trying to enforce the collection, notably through improving hospital computerisation systems.

Also, in addition to the formal payments, informal (non-official) payments are frequent in Greece (OECD, 2010). Patients appear to pay them to get a doctor of their choice or a preferred timing for a surgery though not to obtain care. There is a legal and ethical framework that forbids and punishes cases of corruption and bribery but to initiate legal proceedings a formal complaint has to be launched. Informal payments do not encourage a more effective use of services and constitute an additional barrier to access as there are no exemptions for low income or high risk groups. They are a source of inefficiency and add to the inequity in the use of services (2% of the households face catastrophic health expenditures).[10]

# 4. Collection, pooling and allocation of financial resources

In 2007, 60.3% of total health expenditure funding comes from government sources (taxes earmarked annually for the sector at the central level) plus social security contributions, 37% from out-of-pocket and the rest from private insurance.

Social security funds determine the benefits they cover, the level of coverage and the contribution rates. There appears to be no pooling and then redistribution of resources across funds. The large number of insurance funds has raised some concerns by the OECD over high administrative costs and low bargaining power by many funds.[11] Additionally, many of the social security funds provided both medical care insurance and pension insurance (individuals and their employers pay a contribution rate for pensions and another for medical care). The need for pension reform and

[9] As a result, Greece scores about 4.5 on the depth of basic coverage (the third lowest in the OECD) according to the OECD scoreboard.

[10] According to Liaropoulos et al. (2008), Health Policy, using survey data (sample of 1616 households, amounting to 4738 individuals), out of the total number of those reporting treatment in public hospitals (N=336), 36% reported at least one informal payment to a doctor. Of these, 42% reported it was given because of the fear of receiving sub-standard care (if they did not pay) and another 20% claimed that the doctor demanded such a payment. None of the socio-economic characteristics of the family were related to the size of extra (informal) payments. Surgical cases had a 137% higher probability for extra payments compared to non-surgical patients.

[11] For example, there appears to be a very large number of contributory packages, a result of legislative changes over the years, causing a complex process of collecting contributions and potentially leading to contribution evasion. The OECD has called for the separation of pensions and health insurance, plus the merging of all health funds and centralised management of all public funding to decrease administrative costs and to improve coordination of health care provision.

general public administration reform has prompted authorities to reduce the number of funds and separate the pension function from the health function. The legislative change foresees a Consortium of social security funds which will act as a unique buyer of care for all those insured by the funds. It will be important to monitor the ongoing reform and its consequences for population and service coverage, pooling of funds, greater coordination / integration of care provision, etc.

Health Regions have the responsibility to implement national strategy set by the Ministry of Health. The public administration reform has also reduced their number from 17 to 7, an important measure to reduce administrative costs and ensure greater policy coherence. Their work could perhaps benefit from better definition of responsibilities and a clear budget allocation system across the 7 Health Regions and across sectors of care. Also, the institutional relationship between the Health Regions and the new insurance setting would need to be clarified. There is no data on total or public expenditure on administration and insurance making it difficult to understand whether the current system is expensive from an administrative point of view and if policies have resulted in cost savings. There is an overall budget constraint defined annually for public spending but this spending target has often been reached and resulted in budget deficit by care institutions (public hospitals and social security funds) which has been consistently paid by the government.[12]

The planned reforms attempt to ensure the pooling of all funds and to ensure a uniform/ coherence system of provision. Two Councils have been established: one to create a uniform provision framework and the other to define the framework to contract service providers. The goal is to have a common benefit package to all those enrolled in the various social security funds and have more uniform contracting procedures with providers of care, both private and public. In addition, to the points above it will be important to understand which Ministry (of Health or Labour) will be in charge of health policy and monitoring of the health sector as currently IKA is under the Labour Ministry but other health policy functions are under the Ministry of Health.

# 5. Providers status, referral systems and patient choice

Care is provided in NHS units (health centres and the large majority of hospitals), in health units owned by insurance funds (IKA) and in private sector units (physicians, clinics and hospitals) with whom the funds establish contracts. Under the planned reforms, a Council is to be established to define the smooth transfer of current provision to a uniform system of health services. Decisions are to be implemented 2 years after its establishment.

Greece has the highest number of practising physicians per 100 000 inhabitants (602 in 2008) in the EU (average 324.1 in 2007) and the OECD, having consistently increased since 1998 (412). However, data on the physician skill/mix suggests a large emphasis on specialist doctors: Greece has a substantially higher number of, for example, cardiologists, gastroenterologists, plastic surgeons or radiologists per 100 000 inhabitants than any other EU country but has one of the lowest number of general practitioners (35.5 in 2005) and the lowest number of nurses (364 in 2006) per 100 000 inhabitants (respective EU averages of 87.1 in 2005 and 821.2 in 2006) despite a consistent increase (309 nurses in 2000 and 27.9 GPs in 1998).[13] This skill mix (coupled with unequal physician location) makes it difficult for authorities to ensure an efficient primary health care sector that can improve access, quality and sustainability of care, something that authorities acknowledge and want to see changed. Hence, the adjustment in medical training to a more primary care oriented practice and a shift in staff planning to encourage a more balanced mix of skills, notably towards primary care, may prove to be an important policy step. The authorities are putting

[12] According to the OECD, existing cost controls are not very stringent and it is not clear what the consequences of expenditure overshooting are. This gives Greece a score of 2 out of 6 in the OECD scoreboard.

[13] Data on health care staff comes from EUROSTAT database and OECD health data.

forward new legislation providing for the introduction of economic and career development incentives with a view to improve the geographical distribution of practising physicians and to cover effectively the needs of the rural areas. About 42.4% of all physicians had more than 45 years of age in 1998 which indicates that ageing can also affect the provision of health.

Currently, there is no referral system from primary care to specialist doctors nor a record or follow up of patient care episodes. There is not yet a system whereby a family doctor acts as a coordinator of care and a gatekeeper to secondary care, something that authorities have acknowledged. There are some financial incentives to see certain physicians and hospitals (e.g. IKA, the biggest social insurance fund, has its local surgeries, affiliated doctors and hospitals) although it is not clear if the incentives encourage the use of primary rather than specialist care, for example, or work on the basis of a referral system.[14] However, to implement a well-functioning referral system would require/ would have to be accompanied by changes in the skill mix and in the organisation of care delivery.

Greece has a large number of acute hospital beds per 100 000 inhabitants (400 in 2008), higher than the EU average (383.2) though not one of the highest in the EU. Greece has however a low occupancy rate of acute care beds and there is a shortage of follow-up/long-term care beds which creates unnecessary and long use of acute care beds. There is limited information in terms of hospital activity to provide further analysis. Note though that the public capital expenditure appears to be low (0.8% of total health expenditure) compared to the EU average (2.5% in 2007) and has been decreasing. Private capital expenditure has been relatively larger (total capital expenditure accounts for 3.7% of the total health expenditure vs. EU average of 4.1% in 2007. This reflects an increase in public-private partnerships for new hospitals and an increase in the private sectors notably a growing number of diagnostic centres with expensive technology.

# 6. Purchasing, contracting and remuneration systems

Primary care services (which in Greece encompass a wide variety of specialties) are provided in private mostly individual practices and in public NHS and IKA health centres. Physicians in both public NHS and IKA health centres receive a salary. Private physicians with whom the social security establish (annual) contracts are mostly paid on a fee for service basis, although one of the funds (OAEE) pays physicians on a capitation basis. Specialist services and hospital services are mostly provided by public hospitals and some private clinics and hospitals. Physicians in public hospitals receive a salary while services in the private sector are mostly paid on a fee for service basis.[15] Salaries are determined by the central government, while fees for services are proposed by the National Health Council representing the various actors in the health sector. There are no performance-related payment incentives for physicians, notably for primary care physicians, which could encourage certain activities such as health promotion, disease prevention, disease management, something that could be considered in the future under health reform to render primary care more attractive to physicians

Salaried public sector NHS doctors can exercise private practice in public NHS hospitals in the same hospital in the afternoon (the so-called afternoon shift). The OECD expresses some concerns that this dual practice can induce inefficiency in the public area - reducing public activity to increase demand for their private practice - especially in the presence of fee-for-service in the private sector and duplicative private insurance (private insurance that covers the same goods and services as the primary coverage and covers 8% of the population in Greece). It can also increase

[14] Indeed, according to the OECD the level of choice has a score of a bit more than 3 out of 6, while gatekeeping scores 0 out of 6 (strong referral systems).

[15] The OECD score for remuneration incentives to raise the volume of care is 4 out of 6 for Greece as a result of high fee-for-service.

costs for the public sector depending on how production costs are shared. This situation may lead to inefficiencies and cost-ineffectiveness in the system, as well as inequity in access and differences in quality of care. However, this type of dual practice in public NHS hospitals, rather than in private offices of physicians, has provided considerable extra revenues for hospitals and an additional income for physicians. The operation of the outpatient departments in the afternoon is governed by specific provisions regulating working hours, appointments, number of patients, staff remuneration and hospital organization. Compared to private practice in private offices, the use of public hospitals may allow for better control of private activity, less informal work and therefore less tax evasion. It appears to be associated with higher patient satisfaction. Therefore, it would be interesting to explore what policies could be used to counteract the perverse incentives, while reaping the benefits of dual practice.

Hospital use is high. Hospitals are paid on a per diem basis and retrospective funding of all costs which does not necessarily provide efficiency incentives, although hospital average length of stay (8.1 days in 2005) is about the EU average (8.1 in 2006) and has slightly gone down. There is no information regarding the use of day case interventions vs. inpatient care to understand if this would be an area for improvement. It appears that primary care centres are highly dependent on hospital budgets rather than having an autonomous budget. There appears to be no stringent regulation regarding the opening of new hospitals or other institutions, the increase/decrease of hospital beds, the provision of specific types of hospital services or the supply of high cost medical equipment. Relatively high hospital capacity combined with the retrospective and the per diem payment method and no referral system pose difficulties for authorities to limit the unnecessary use of acute and emergency care settings. The law 3697/2008 enforces public units to draft budgets, define operational plans and create double entry booking systems. Authorities are currently implementing such changes to improve hospitals accountancy and budgeting procedures. The implementation of this law is important to obtain information on hospital costs and outputs. The authorities are also planning a number of related reforms to improve the monitoring of hospital activity in terms of operations, medicines etc.

**Pharmaceuticals**

The initial price of all the medicines reimbursed in the basic care package is based on a cost plus calculations for locally produced medicines and international prices (average of the three lowest manufacturing prices among EU-25 and Switzerland) for imported ones. For a medicine to be marketed in Greece it has to have been launched in at least 3 EU Member States. To control expenditure authorities had introduced a system of rebates, although rebates were never collected for lack of precise data on prescriptions by social security funds and NHS hospitals, a problem which authorities are now trying to tackle. In addition, authorities are developing a positive list of medicines using a reference pricing system whereby the maximum reimbursement level of a new drug is based on the cluster of existing drugs with the same active ingredient and form. The positive list is soon to come into force. Authorities have also implemented some monitoring of prescription patterns which is to be universal for all funds by January 2011. Legislation appears to provide for prescription guidelines, prescription ceilings and penalties but these have not work so far, something authorities want to see changed. Greece has no explicit policy on generics but the price of a generic medicinal product is currently set at 80% of the original product's price. Generics do not have better reimbursement rates or lower cost-sharing rates associated.

Compared to other countries, there may be room to explore other additional measures for product price regulation, expenditure control, good prescribing practices and generics. For example, there appears to be no use of cost-effectiveness information to establish reimbursement. Authorities are planning a number of reforms to control pharmaceutical expenditure including through an improvement in public procurement procedures, drug tenders based on their active substance, new drug’s management system in the NHS Hospitals and the establishment of hospital drug packaging.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Data is lacking in a number of areas and compared to some other EU countries there is no purposeful monitoring of physicians and hospital activity. There is no comparable information published that can be used for planning or strategic purchasing. In fact, several hospitals lack computerisation and, therefore, lack the means to gather information on their activity, something authorities are now addressing. Also there is so far only limited monitoring of prescription behaviour by physicians and although compliance to clinical guidelines is compulsory, it is not monitored. Electronic information is only very occasionally exchanged across sectors and doctors. These are areas where improvements could allow for performance measurement, could encourage providers to increase their activity and quality of care or help consumers choose providers.

A number of policies are foreseen. The completion of the procedures regarding the full implementation of Integrated Health Information Systems within 2010, particularly in regions that these systems were not in place will improve data collection and monitoring of the NHS Hospital activities. Additionally, 30 hospitals have been selected in order to develop a system of electronic procedures by the end of 2010, early 2011. This will improve the data collection, the monitoring of procedures and processes including inputs and outputs, the monitoring of the financial activity of the hospitals, the electronic patient's records and the overall information about hospital activities. For the rest of the hospitals, guidelines have been provided for the completion of the nursing and administrative procedures by the end of 2010 (possible accreditation: 2011).

Currently, there is no structure to conduct health technology assessment and cost-effectiveness knowledge is therefore used in limited terms to determine the benefit package, the extent of cost-sharing or develop treatment guidelines to harmonise and rationalise medical practices. The benefit basket is based on affordability or budget impact.

The central government has set a number of public health objectives although accountability and responsibility for the non-attainment of targets appears to be limited. However, as section 1 highlights, there are a number of risk factors to health (to which mortality by road accidents can be added) that show an increasing trend. Vaccination rates (87%) and screening rates for cervical (50.8%) and breast (44.4%) cancer are low by EU standards. There is currently no information on expenditure on health promotion and prevention and public health services to understand if this represents a significant share in total expenditure making it difficult to conduct further analysis. The recent introduction of a smoking ban (2009) complemented by proposed increases in taxation on tobacco and alcohol, which are to be introduced as part of the fiscal measures to reduce the current budget deficit, are steps to reduce the prevalence and incidence of tobacco and alcohol related diseases.

# 8. Challenges

The analysis above shows that, contrary to most EU countries, very few reforms have been implemented in Greece over the years, although a large amount of legislation to implement such reforms has been enacted. While health status may be generally high by EU standards, several risk factors have emerged which can impact negatively on health status in the coming years if timely action is not taken for example. Moreover, the current incentives present in the system are not necessarily conducive to the use of cost-effective interventions, while individuals pay a significant

share of expenditure directly out of their own pockets. On the basis of the analysis the main challenges for the Greek health care system are as follows[16]:

- To improve governance (general coherence and management) of the sector through stepping up and finalising the public administration reform. Currently, there are still many different sources of funding and both private and public provision co-exist, but, both in the case of funding and in the case of provision, they are not clearly integrated so far i.e. they are not part of an overall framework of care delivery. There are some governance issues that need to be clarified in the coming months and years such as: how many social health insurance funds are to remain - currently the plan appears to be that a Consortium will pool all social security contributions to health and act as a joint buyer of services; how the government funding will be integrated with the social security funding i.e. how all the funding will be pooled in one only institution; if the funding function will be separated from the provision function i.e. all providers (public and private) will act as independent providers with whom the Consortium establishes contracts; how the new Consortium will relate to the current regional health units, and therefore what will be the responsibility of regional units... Authorities are planning a number of legislative changes to integrate the various sources of funding, on one hand, and on the other to create a coherent and integrated framework of provision. Resource allocation, and the criteria used for allocating resources, across regions and sectors of care would also need to be better defined as there would be need for strategic purchasing.
- To enhance and better distribute primary health care services and ensure an effective referral systems from primary to specialist care to improve equity of access and efficiency of health care delivery through a more logical/rational and cost-effective use of services. This can be helped through the future implementation of electronic patient records. Currently, the system appears to focus strongly on acute hospital care while access to primary care services and its coordination with specialist and hospital services remains a challenge. Such structural change requires adjusting the scale, distribution, and scope of primary care versus other types of care.
- To adjust staff training and the staff skill mix towards having more primary care doctors and nurses. It also requires the involvement of insurance funds as they have their own units or contract private care units and hence must change their approach to care delivery. This will depend on the extent of the social health insurance reform and its final design: for example if all funds will be merged and provision will be separated from purchasing. It should be complemented with financial and non-financial incentives including the extent of cost-sharing to encourage the use of primary care versus specialist care. Relatedly, authorities should improve follow-up care so as to reduce the unnecessary use of acute care settings for long-term care patients.
- To consider changes in payment procedures to primary care physicians (e.g. through the use of mixed payment schemes) to induce cost-effectiveness in the sector and to encourage health promotion, disease prevention and disease management activities in primary care and render primary care more attractive.
- To reduce the unnecessary use of hospital care. To consider changing NHS and hospital budgeting which are currently highly dependent on an historical basis. Hospital budgets

[16] The OECD overall efficiency score for Greece is about 4 additional years of life compared to the group average of 2.3 years if it improves efficiency of care delivery. Areas for improvement include: reducing the emphasis on hospital and inpatient care, improving referral systems and gatekeeping, introducing additional incentives for providers to increase output (mixed remuneration for doctors and prospective budgets for hospitals), improving data collection in a number of areas including spending and setting priorities on which to base resource allocation, better and more public information on output and prices can help support patient choice over the various private providers and stricter budget norms.

could be made more prospective and costs made more transparent. Hospitals will also need to develop better budgeting and accounting procedures.

- To consider additional measures regarding price regulation, expenditure control, good prescribing practices and a more explicit policy on generics and the monitoring of prescription of drugs. To use cost-effectiveness information to establish positive lists and the extent of cost-sharing.
- To improve data collection and monitoring of inputs, processes, outputs and outcomes so that regular performance assessment can be conducted and used to continuously improve access, quality and sustainability of care. This includes the implementation of electronic patients' records but also efforts to assess and publish evaluations of the quality of care provided for example.
- To make more use of cost-effectiveness information in determining the basket of goods and the extent of cost-sharing to induce cost-effective behaviour.
- To enhance health promotion and disease prevention activities i.e. promoting healthy life styles and disease screening given the recent pattern of risk factors (diet, smoking, lack of exercise, obesity). To implement the proposed smoking ban and tax policies to encourage healthier life-styles, that can be complemented with measures such as stricter labelling and advertisement, stricter road safety policies and more widespread health education.

# Statistical Annex - Greece[17]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 8.4 | 8.6 | 7.9 | 8.8 | 9.1 | 8.9 | 8.7 | 9.5 | 9.7 | 9.7 | 9.7 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1184 | 1270 | 1262 | 1507 | 1680 | 1715 | 1762 | 1971 | 2122 | 2234 | 2293 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 4.4 | 4.6 | 4.7 | 5.3 | 5.3 | 5.3 | 5.1 | 5.7 | 6.0 | 5.8 | 5.9 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 616 | 679 | 757 | 915 | 974 | 1025 | 1042 | 1185 | 1317 | 1348 | 1394 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 5.1 | 5.4 | 5.7 | 6.0 | 6.3 | 6.4 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 14100 | 14700 | 16000 | 17100 | 18500 | 19200 | 20400 | 20600 | 22000 | 23100 | 23600 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | : | : | : | 1.3 | 1.6 | 1.8 | 2.0 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | 0.9 | 0.9 | 0.9 | 0.9 | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | : | : | 2.5 | 2.6 | 2.9 | 3.1 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 1.2 | 1.2 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2.0 | 2.2 | 2.4 | : | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 0.8 | 0.9 | 0.9 | 1.0 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.9 | : | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | : | : | 10.7 | : | : | : | 16.4 | : | 18.1 | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 37.6 | : | 35.0 | : | : | : | 38.6 | : | 40.0 | : | 39.7 | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 9.4 | 10.0 | 9.5 | 9.3 | 9.2 | 9.0 | 8.9 | 9.2 | : | : | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 80.3 | 80.5 | 80.6 | 81.0 | 81.1 | 81.2 | 81.3 | 81.6 | 81.9 | 81.8 | 82.4 | 82.3 | 82.3 |
| Healthy life years at birth females | 68.3 | 69.4 | 68.2 | 68.8 | 68.5 | 68.4 | 65.2 | 67.2 | 67.9 | 67.1 | 65.8 | 62.3 | 61.6 |
| Life expectancy at birth males | 75.4 | 75.5 | 75.5 | 76.0 | 76.2 | 76.5 | 76.6 | 76.8 | 77.2 | 77.1 | 77.7 | 76.3 | 75.9 |
| Healthy life years at birth males | 66.5 | 66.7 | 66.3 | 66.7 | 66.7 | 66.7 | 63.7 | 65.7 | 66.3 | 65.9 | 65.4 | 61.5 | : |
| Infant mortality | 6.7 | 6.2 | 5.9 | 5.1 | 5.1 | 4.0 | 4.1 | 3.8 | 3.7 | 3.5 | 3.5 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 52.1 | 53.4 | 60.0 | 60.8 | 58.0 | 59.8 | 59.1 | 60.1 | 62.0 | 60.3 | 60.9 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 45.9 | 44.7 | 37.8 | 36.9 | 39.7 | 38.0 | 38.7 | 37.9 | 36.0 | 37.5 | 37.0 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | : | : | : | : | : | : | : | : | : | : | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | : | : | : | : | : | : | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | : | : | : | : | : | : | : | : | : | : | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | : | : | : | : | : | : | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 42.4 | : | : | : | : | : | : | : | : | : | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 412.0 | 423.0 | 432.3 | 437.1 | 457.4 | 473.0 | 486.7 | 499.4 | 535.0 | 556.0 | 602.0 | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | : | : | 309.0 | 331.0 | 367.0 | 370.0 | 368.0 | 372.0 | 361.0 | 360.0 | 364.0 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 27.9 | 29.8 | 27.7 | 26.5 | 28.5 | 31.9 | 33.9 | 35.5 | : | : | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 391.7 | 388.3 | 387.3 | 384.8 | 379.5 | 382.2 | 380.1 | 386.9 | 390.0 | 400.0 | 400.0 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 4.3 | 4.2 | 4.3 | 4.0 | 4.0 | 4.2 | 4.2 | 3.9 | 4.0 | : | : | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 6120 | 5031 |
| Hospital average length of stay | : | : | 8.4 | 8.0 | 7.8 | 8.7 | 7.8 | 8.1 | : | : | : | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | : | : | : | : | : | : | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | 164.3 | 183.1 | 238.6 | 271.4 | 316.0 | 349.8 | 387.7 | 423.5 | 481.6 | 562.8 | : | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 115.2 | 128.4 | 150.1 | 175.4 | 212.4 | 240.6 | 275.0 | 308.5 | 364.1 | 444.7 | : | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | 14.5 | 15.1 | 19.9 | 19.1 | 19.9 | 21.4 | 23.0 | 22.3 | 23.6 | 25.8 | : | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 10.1 | 10.6 | 12.5 | 12.4 | 13.4 | 14.8 | 16.4 | 16.3 | 17.9 | 20.4 | : | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | : | : | : | : | : | : | : | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | : | : | : | : | : | : | : | : | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | : | : | : | : | : | : | : | : | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | : | : | : | : | : | : | : | : | : | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 91.0 | 87.0 | 87.0 | 87.0 | 87.0 | 87.0 | 87.0 | : | : | : | 99.1 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | : | : | : | 50.8 | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | 44.4 | : | 52.3 | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[17] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Spain

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (26200 PPS in 2007) is slightly above the EU average (24913). However, Spanish economy has been hit quite strongly by the economic and financial crisis: in 2009 the GDP contracted by 3.6%, in 2010 it is expected to shrink by another 0.4% and the growth is expected to turn positive (0.8%) only in 2011.[1] 2010 fiscal consolidation measures will have an impact on public expenditure including health expenditure. Measures that have been implemented include: a reduction in personnel costs with public salaries cuts and pharmaceutical costs restraint. Measures implemented in June and July 2010 in the area of pharmaceuticals have led to a reduction of 7.5% in all medicines outside the reference price system and an average reduction of 25% in the price of generics. These measures have resulted in significant reductions in public expenditure on pharmaceuticals and contributed to the adjustment in public health expenditure in 2010 and 2011.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (9% in 2008) has increased over the last decade (from 7.3% in 1998) but is still below the EU average[3] of 9.6% in 2008. Public expenditure has increased though to a smaller extent: from 5.3% in 1998 to 6.5% of GDP in 2008. It is also below the EU average of 7.4% in 2008. When expressed in per capita terms, total spending on health at 2374 PPS is slightly below the EU average of 2381 in 2008. So is public spending health care: 1722 PPS vs. 1826 PPS in 2008. The average annual growth of health care expenditure 2003-2007 was 8.6%. Public expenditure rose by 9.1%, while private expenditure showed less intense growth, with an annual average rate of 7.4%. In the same period GDP grew at an annual average rate of 7.6%. Therefore, the ratios of total and public expenditure on health care over GDP have increased by 0.33 and 0.31 percentage points in the period respectively. In 2008, nominal public expenditure increased 10.7% and total expenditure by 9.7%, while GDP decelerated to an annual nominal increase of just 3.4%. In per capita terms in 2008, total expenditure increased by 11.2% and public expenditure by 12.3% close to the euro area countries with available data. Real annual growth in per capita health spending, 2000-2008 was 4.7% (higher than the average 4.2% in OECD) and real annual growth in per capita GDP 2000-2008 was 1.9% (lower than the average 2.2% in OECD).

**The role of technology**

The density of diagnostic and therapeutic units is around the EU average: the number of CTS units and the number of MRI units[4] in hospital and ambulatory facilities per 100000 inhabitants are respectively 0.1 and 0.93 vs. the EU averages of 0.1 and 0.65 units per 100000 inhabitants in 2007. Total expenditure on pharmaceuticals as a percentage of GDP (1.8%) and as a percentage of total current expenditure on health (21.3%) is above the respective EU averages (1.5% and 16.9% in 2008). Public expenditure on pharmaceuticals as a percentage of GDP (1.3%) and as percentage of total current expenditure on health (15.5%) is also higher than the respective EU averages (1% and 11.2% in 2008). Nevertheless, expenditure on pharmaceuticals shows a decline in relation to the

[1] European Commission (2010), European Economic Forecast – Spring 2010.

[2] Data on health expenditure is taken from OECD health data and Eurostat database. The variables total and public expenditure used here follow the OECD definition under the System of Health Accounts and include HC.1-HC.9 + HC.R.1.

[3] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year.

[4] Data on technology is taken from OECD health data and Eurostat database.

years 2003-2005, after the implementation of rationalisation measures in 2003. These measures included changes in the reference price system and the beginning of the expansion of generics. Since 2003, the use of the reference system, a fall in the price of generics and a larger use of generics has meant a drastic fall in prices of most used medicaments and on expenditure on pharmaceuticals. The growth rate of expenditure for 2003-2008 was 6%. In 2009, the growth rate of pharmaceutical expenditure was down to 4.5% due to an increased use of generics. The 2010 measures have also led to a reduction in pharmaceutical expenditure as explained above.

**Health status and healthy behaviour – life-styles – risk factors**

Life expectancy (84.3 years for women and 78 years for men in 2008) and healthy life years (63.2 years for women and 63.7 years for men) are among the highest in the EU and well above the respective EU averages (82.3 and 75.9 years in 2008, 62.3 and 61.5 in 2007).[5] An infant mortality rate of 3.7‰ is lower than the EU average of 4.3‰ in 2008, having gradually fallen over the last decade (from 4.9‰ in 1998).

As for the lifestyle of the Spanish population, the data indicates a considerable fall in the proportion of the regular smokers (from 31.7% in 2001 to 26.4% in 2006), although the share is still high compared to the other EU countries. Over the same period the proportion of the obese in the population has increased (from 12.6% in 2001 to 17.1% in 2009), while the alcohol consumption shows a small reduction from 11.9 litres per capita in 1998 to 10 litres. As in other developed countries, cardiovascular and cerebrovascular diseases and cancer are the leading causes of mortality and morbidity in Spain, with diabetes also being an issue. There has been a drastic decline in the prevalence of cardiovascular disease, the increase in survival rates for all types of cancer (due to prevention, early detection and treatment extension) and the extension of transplant techniques together with a highly effective organ donation system (a model that has been adopted by a new EU Directive in 2010). Also, the recent decline in traffic accidents has been an important change in risk factors. Aggregated health results indicators are among the best in the EU, showing high social returns of public expenditure together with the relative lower spending. Nevertheless, the data indicates the authorities should continue their efforts to improve population life-styles.

# 2. Expenditure prospects: population ageing and future health status

According to Eurostat 2008 projections, total population in Spain is projected to increase from 45.3 million in 2008 to 51.9 million in 2060, mainly as a consequence of an expected sharp increase in fertility rate (from 1.39 to 1.56) and a lower than EU average rise in life expectancy (7.5 for man and 5.7 for women). Over the period 2008-2060, the share of elderly population (65+) is projected to increase by 15.7 pps, while that of the very old (80+) by 9.9 pps, slightly more than on average in the EU (respectively 13 and 7.8 pps).

As a consequence of demographic changes, health care expenditure is projected to increase by 1.8 pps of GDP or by 29%, higher than on average in the EU (22%).[6] However, if health status improves parallel to the increase in longevity, the projected growth in spending is expected to be almost halved (1.0 pp of GDP or 17%). Overall, significant increase in health care expenditure is expected to add to the strong budgetary pressure from the other age-related items of public expenditure (mainly pensions) contributing, together with the current unfavourable budgetary stance, to the high risk for long-term sustainability of public finances.

[5] Data on health status including life expectancy, healthy life years and infant mortality is from the Eurostat database. Data on life-styles is taken from OECD health data and Eurostat database.

[6] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).

# 3. Health care coverage and expenditure

The system is characterised by two main features: universal access and total devolution of health care to the regions. The Spanish population is almost entirely (99.5%) covered by the National Health System (NHS), while the remaining 0.5% consists of high-income, non-salaried workers who are not obliged to join the social security system. 95% of the beneficiaries of the system are covered by the common social security system and health services of the NHS, while 5% (civil servants and their dependants) are covered by their own publicly financed health insurance policies. Despite the decentralised character of the system, eligibility depends on the general regulations of the Central government. Autonomous communities are in charge of the process of accreditation of coverage which is decided in each case by the Social Security authorities dependent on Central government. All of them, respect the principle of universality of health care, in the framework of the Spanish Constitution and State General Health Care and Social Security Laws, extending it not only to the Spanish citizens contributing financially to the system, but also to temporary residents and non-residents (including illegal immigrants registered as residents in a municipality). There is also a Common Basket of services of the National Health System that has to be delivered to the whole population covered.

Being based on tax financing, the Spanish health care system assures free provision of services at the point of access. Nevertheless, private expenditure and out-of-pocket expenditure constitute respectively 27.5% and 20.7% of total expenditure on health in 2008. The share of out-of-pocket payments shows a declining path (23.2% in 1998) but remains above the EU average of 14.4%. Since primary and specialist care services are provided without cost sharing, out-of-pocket spending accounts mainly for cost-sharing in the area of pharmaceuticals, medical aids and prostheses, optical and dentist services, as well as private use of private medical and hospital services which involve a direct payment. Pharmaceutical expenditure accounted for 17% of household health expenditure in 2008.

There are mechanisms to protect vulnerable groups of people such as cost-sharing exemptions in pharmaceuticals for those with medical conditions and for senior people. As a consequence, about 24% of the population is at least partially exempted from copayments.[7] The copayment of pharmaceuticals is based on the age of an individual and type of drug. Patients under the age of 65 pay 40% of retail price of prescribed drugs. Patients over 65 years of age or disabled are exempted from co-payments. This co-payment does not apply for prescription in inpatient regime and contemplates exemptions for some patients, such us severe handicapped, and persons who have suffered occupational accidents. There is no reimbursement system; patients pay their share at the pharmacy and this one bills the rest to regional health services. Civil servants' mutual funds require co-payments of 30% of the price of pharmaceuticals from all their beneficiaries (including the retired ones). Particular groups are always exempt from the full co-payments: AIDS patients and chronic diseases (both 10%, with €2.64 ceiling).

In addition, the concerns voiced regarding the length of the waiting lists have resulted in the implementation of indicators and minimum basic and (countrywide) common requirements for waiting lists for specialists, diagnostic and therapeutic trials and surgery.

Private insurance companies have been the most dynamic sector in recent years which went from financing 18.9% of total private expenditure in 2003 to 20.8% in 2007 (6% of total expenditure). The explanation for this increase is found to a large extent in the growing number of collective policies purchased by companies. Voluntary private health insurance (mostly duplicative in nature)

[7] As a result, Spain scores 6 out of 6 on the breadth of health insurance coverage, about 5.5 in the scope and a bit more than 5 on the depth of basic coverage according to the OECD scoreboard.

covers 10% of the population and about 6% of total expenditure (2007). Both shares have been gradually rising over the recent years.

# 4. Collection, pooling and allocation of financial resources

The system is a unique combination of central, regional and local management and financing of health care. It is mostly tax-funded. Public expenditure accounts for 72.5% of total expenditure on health, out-of-pocket expenditure 20.7% and the rest is private health insurance.

The principles for the system embedded in legislation and guiding successive reforms are:

- Financial autonomy: the capacity of Autonomous Communities (ACs) to determine their expenditure and revenue level;
- Sufficiency: assurance that ACs can count on sufficient financial resources to implement the competences devolved to them;
- Solidarity: articulation of mechanisms for resource redistribution and compensation for economic imbalances across ACs.

As a consequence of the reform initiated in 1986, the Spanish health care system gradually shifted from a social insurance type system into the National Health System (NHS) based on direct state funding. The reform in 2001 marked the finalisation of the devolution process, which meant that all of the 17 ACs had complete freedom to manage their own health services. Health funding was integrated within the general financing system through tax cession; and ear-marking of funds was phased out. The new system since the 2009 reform[8] follows the same structure of ACs financing implemented in 2001 aimed at reinforcing the basic principles: elements of taxation ceded to regional administrations and assignments from the state's general budget. As a result of this reform, 90% of regional revenues stem from taxes.

- Increased fiscal autonomy through the share of major taxes partly ceded to ACs. Since the 2009 reform these shares are 50% of personal income tax and VAT and 58% of the main excise taxes (hydrocarbons, alcohol, and tobacco). The system since 2001 includes regional direct control over taxes on gifts and inheritances, properties and property transfers and gambling taxes. Also, there are certain own regional taxes.
- Fundamental Public Services Guarantee Fund, which guarantees that health care, education and social services are equally provided regardless the place of residence. It is made up of 75% of the taxes ceded to ACs plus state transfer. The basis for the calculation of the participation of ACs from this fund are population, extension, dispersion, insularity (as before) plus the *equivalent protected population* (split into subgroups by age).
- Global Sufficiency Fund, which guarantees ACs enough resources to finance all their competences. It is fully financed by the central government. Consequently, ACs count with the remaining 25% of ceded taxes plus this State fund to meet their competences.
- And finally, in order to promote economic convergence and development of those ACs with lower income per capita, the system relies on two new Convergence Funds fully financed by state's budget transfers (Competitiveness Funds and Cooperation Funds), over which the central administration holds more discretion.

At central level the Ministry of Health is responsible for: general coordination and basic health legislation; definition of benefits package guaranteed by the NHS; pharmaceutical policy and medical education, while the Inter-territorial Council of the NHS has a coordination role. At regional level, the ACs hold health planning powers and the capacity to organise their own health

[8] Law 22/2009 that regulates the financing system of Autonomous Communities of common regime and Cities with Autonomic Statute.

services in their regions. As said, spending by ACs accounted for 90.6% of total public health spending in 2007. Marginally, local governments own and finance the health care networks[9] (although most of their management and personnel have been transferred to the ACs), as well as participate in the governance of the system at regional level, mainly with advisory functions. Decentralisation of the system allows for a more precise planning and strategizing of services with reference to the needs and preferences of individual communities' populations but, on the other hand, may constrain economies of scale and cost effectiveness, especially in case of some modern, costly technologies.

The description suggests a complex system of collection and redistribution of funds and with both central and decentralised decision making processes involved, within a nationally agreed framework. However, the level of expenditure in administering such a system is not high. Public and total expenditure on health administration and insurance as a percentage of GDP (0.1% and 0.3%) are below the respective EU averages (0.3% and 0.4% respectively in 2008). So are public (1.5%) and total (3.3%) expenditure on health administration and health insurance as a percentage of total current health expenditure (EU averages of 3.1% and 4.4% in 2008).

Budget control is the same as any other public institution. However, in the public health sector the usual tool for management is that of contract-programmes or management contracts. In the health system these contracts have the following general characteristics: they define the quantitative and qualitative objectives, the budget and the evaluation system. The time period referred to in the contracts tends to be one year. The contracts are made between the Regional Ministries and the Health Services, and between the Health Services governing bodies and the health care areas or facilities.[10]

# 5. Providers status, referral systems and patient choice

The Spanish health care system is focused on primary and ambulatory care. Primary health care (PHC) is an integrated system composed of PHC centres and multidisciplinary teams providing personal and public health services in well equipped centres. PHC is provided by general practitioners (GPs) and primary health care paediatricians, who play an important role as gatekeepers and referral points to specialists. These in turn refer patients to hospital care. Single-handed practices are restricted to small villages and to the private sector. PHC is to a great extent publicly funded and run.[11] Inpatient care is provided in hospitals which are mostly publicly owned. The NHS also contracts services from private non-profit providers.

The number of practicing physicians per 100000 inhabitants (352.2 in 2008) is above the average in the EU (324.1 in 2007). In Spain, GPs are a type of specialist (Family and Community Medicine) and they represent 38% of total specialists.[12] There are about 84 GPs per 100 000 inhabitants, the seventh highest value in the EU. As said, PHC also includes Paediatricians in Spain. In PHC, the average number of people assigned per professional is 1410 for each GP/ family doctor, 1209 for

[9] Health Care Networks are the networks of health care entities which existed prior to the inception of the social health insurance system and which include public health, previously existing networks for monitoring and treatment of infectious diseases, the charity-based system, most health promotion and prevention activities, the previous network for rural primary care, psychiatric care and some community care programmes. These networks were integrated after the General Law on Health being completed by mid 90s. Marginally some municipalities in Catalonia, Madrid, Malaga have kept their services but in concert with the regional authority.

[10] According to the OECD, Spain scores about 2 out of 6 in the OECD scoreboard due to not so stringent budget controls, although public expenditure has risen more slowly than total expenditure and is below the EU average.

[11] The only public-private mix is the formula of health associations used in Catalonia by delegating powers to private companies within certain geographic areas.

[12] Patricia Barber Pérez, Beatriz González López-Valcárcel. Supply and need of Specialist physicians in Spain. Oferta y necesidad de especialistas médicos en España (2008-2025).

each paediatrician, 1663 for each nurse and 3102 for each auxiliary administrative staff member. These figures show a rather high volume of PHC doctors. However, the average number of consultations per inhabitant per year (frequentation)[13] is also high, at 5.65.

The number of nurses at 815.8 per 100 000 inhabitants in 2008 shows a significant and consistent increase (615.8 in 2008) and is the nine highest value in the EU, though still slightly lower than the EU average (average of 830 in 2007).The supply of medical staff may become a challenge in the close future as the proportion of physicians older than 45 was as high as 54.2% in 2008 (EU average of 60.8% in 2007) and the potential for replacing retiring doctors using the pool of licensed physicians 472.5 per 100000 in 2008) is lower than in other EU countries.

Given two-stage referral procedure (GP-specialist-hospital) access to inpatient care is efficiently controlled. This has allowed authorities to reduce capacity and activity of hospitals over the last decade. In the period 2000-2007 beds per 1000 inhabitants decreased by 12.8% while day-hospital places per 100000 inhabitants increased by 68.5%. In 2008 overall capacity of hospitals was considerably lower than in most other EU countries, with 250.8 acute hospital beds per 100000 inhabitants, compared to the EU average of 383.2 beds. Not surprisingly, both the total number of hospital discharges (10659 inpatient discharges plus 4381.6 day case discharges per 100000 inhabitants in 2008) and the average length of stay (7 days in 2008) were well below the EU average (16231 inpatient plus 6120 day case discharges and 8 days respectively in 2007) and constantly falling. Consequently, inpatient care in 2006 accounted for just 27.2% of total health care costs, 7.6% less than on average in the EU.

This is a reflection of the progressive shift towards ambulatory specialised care, which is resulting in procedures being performed without overnight stay that previously required admission to the hospital. Such an increase in day-hospital places is found in both absolute numbers and in rates per 100000 inhabitants. Note that in terms of hospital activity 29.1% of all discharges are day case discharges, slightly above the EU average of 28.1% in 2007.

Although saving resources, the referral system has two main risks. First, two stages of care may be not well coordinated, which leads to a duplication of procedures, diagnoses and clinical records. If GPs did not act as gate-keepers this problem would be worse but in Spain GPs appear to have fully taken up this role, and as such they effectively coordinate their patients' care.[14] The wider use of ICT including electronic patient medical records can support PHC doctors in their role as care coordinators. Second, a large share (over 60%) of hospital admissions accounts for accident and emergency admissions (the percentage has increased considerably over recent years) which generates considerable inefficiencies. This behaviour tries to avoid waiting periods or limited opening hours in PHC and waiting periods in ambulatory specialised care. However, it should be noted that surveys show a high degree of satisfaction in primary care and their frequentation rates are above international standards.

# 6. Purchasing, contracting and remuneration systems

Primary health care staff are paid a salary plus a capitation component (amounting to 15% of the total), which takes into account the demographic structure and the geographical dispersion of the population covered by their services. Hospital doctors and specialists in ambulatory care units, who have the status similar to civil servants, are almost exclusively paid a salary. Both GP and hospital doctors have an additional component for professional development (professional career). Most of

[13] National Health System of Spain Annual Report 2008, page 81; http://www.msc.es/organizacion/sns/planCalidadSNS/pdf/equidad/informeAnual2008/annualReportSNS2008ING.pdf

[14] Indeed, according to the OECD, the level of gatekeeping in Spain scores 6 out of 6, while the choice of provider scores about 1 out of 6.

them have also a component of productivity which is paid every year according to their performance (but rather low). Also other health care professions (nurses, midwives, social workers and public health professionals) are paid by salary. The basic salary is regulated by the national government, although each autonomous community has the right to vary some additional components and they do so. Such payment system, as much as the 'civil servant' status and tenure of 'jobs for life' in the public sector do not properly reward efficient activity or improve quality and health outcomes. On the other hand, the salary-based system allows authorities to control the labour costs, at the price of frequent dissatisfaction from the part of physicians. The salary based system has another advantage as it reduces incentives to overprescribe consultations, diagnostic tests, surgery, etc. The salary system is tempered by some of its components as capitation, geographical dispersion, professional career and productivity linked to performance.[15] Contrary to the dominant public sector, salaries of the physicians working for non-public hospitals are subject to individual or collective negotiations.

Public hospital funding is generally carried out prospectively through negotiation of a contract programme between the hospital and the regional authority third-party payer, setting out the objectives (in quantity and quality) to be achieved by the hospital and assigning financial resources to these objectives. The purchaser institution then monitors the contracts according to the agreed timetable. Until the 1990s a traditional retrospective reimbursement with no prior negotiation was a routine mechanism. Then, from 1991 first aggregate measures of activity (e.g. weighted health care unit) were defined which enabled comparison among hospitals. Over recent years some attempts have been made to develop a more sophisticated prospective payment system based on diagnosis-related groups or Patient Management Categories. Some elements have been adopted in a few autonomous communities so far, but no general trend can be specified. Public hospitals are also allowed to have another, albeit minor, source of financing, by providing services to people or schemes not covered by the NHS. On the other hand, hospitals functioning outside the NHS may provide services to the public system, which are specifically regulated by individual agreements or contracts.

**Pharmaceuticals**

The Spanish pharmaceutical market is the fifth largest in the EU-27 and tenth in the world by value. Pharmacy sales are growing at a slower rate compared to hospital sales, but they still represent about three quarters of the market at manufacturers' prices. The sales of prescription-only medicines (POM) are the main item and do not depend on the economic situation, as most of them are prescriptions for the elderly and therefore subsidised. Sales of over-the-counter (OTC) medicines, on the contrary, are much more volatile, affected by the economic fluctuations and increasing competition between pharmacies (OTC are not available in other establishments than pharmacies).

The pharmaceutical market is dominated by the state which is the main actor, responsible for regulating and authorising clinical trials, controlling the advertising of drugs, regulating the quality and manufacturing of pharmaceutical products, fixing the price of drugs, setting co-payments and establishing the list of publicly financed medicines. Once authorities decide on which products are to be reimbursed, they regulate the price of reimbursed products. The initial price decision is based on clinical performance, the cost of existing treatments, cost-plus calculations and international prices. International price referencing is based on ex-factory prices of all EU countries. Spain also uses reference pricing for reimbursement: the reimbursement level is the lowest price, calculated by cost of treatment/day for all the drugs of the same group.[16] The reference pricing mechanism in Spain tries to give a signal to the market by the regulator, aiming at manufacturers adapting their

[15] The OECD score for remuneration incentives to raise the volume of care in Spain is a bit more than 1 out of 6 as a result of limited use of activity related payment in the remuneration of physicians.

[16] Royal Decree Law 4/2010, March 26th

prices. In Spain patients do not pay the difference in fact. Some other regulations (profit and commercial margins, limited operating hours) have been adopted to contain costs increase. Discounts and price freezes and cuts are some mechanisms used to directly control expenditure. [17]Generic medicaments have been quickly developed in recent years since the regulation regarding the reference pricing system was adopted in 2003 (8.8% in 2003 to 23.8% in 2009 of total prescriptions) which meant important public savings.

Pharmaceutical regulation is an exclusive responsibility of the national administration, though the role of autonomous communities in modulating consumption is paramount, given their full responsibility for pharmaceutical management (through programs to improve prescription's quality, and the relationship with pharmacists). ACs have implemented several measures to promote generics prescription among physicians. In spite of a 25% annual average increase in generics prescription, the generic market remains less developed than in other EU countries.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Health planning is a competence of the regional health departments and as such, each one develops their regional health 4-5 yearly plans (HPs). They are the principal instrument for identifying intended courses of action and planning resources towards the achievement of previously defined health goals. All share the purpose of responding to identified health needs and offering strategies for health systems action, inspired by "WHO's Health for All" and HEALTH21 strategies. These plans in turn materialize in regional strategic plans, infrastructure plans, regional health strategies and health programmes.

In HPs published in recent years (known as "second-generation plans"), more realistic objectives are being proposed, both in number and in scope, along with more refined indicators and some evaluation systems. HPs generally deal with high-prevalence diseases and chronic care, which normally take the form of specific programmes to be implemented by the regional health service; mental health and drugs abuse programmes can be found in most regional HPs; women- and children-specific programmes are also very frequent.

The passage in 2003 of Spanish Law 16/2003 on Cohesion and Quality in the National Health System paved the way for the Quality Plans. The Quality Plan for the National Health System (NHS) is designed to benefit citizens and promote high quality health care focused on patients and their needs. It also supports health care personnel in the promotion of clinical excellence and in the adoption of best practices based on the best scientific knowledge available.

It should be underlined that Health Technologies Assessment (HTA) is present both at national and regional level. They were conceived to provide a quick response to local questions regarding the introduction of new technologies and the appropriate use of existing ones. The recent creation of the platform of HTA agencies, AUnETS has marked a turning point in the direction of fostering coordination and synergies.

The regulation of the inclusion of new items in the NHS common benefits basket explicitly requires as a previous step the appraisal by the National HTA agency in cooperation with AUnETS. Therefore, HTA is likely to gain more weight in policy making and this might become an incentive to boost close coordination.

[17] See "Analysis of differences and commonalities in pricing and reimbursement systems in Europe", Jaime Espin and Joan Rovira, 2007 for DG Enterprise and Industry.

The National Agency for Quality of the NHS includes under its umbrella the Institute of Health Information, the Quality and Planning Office of the NHS and the Observatory of the NHS. This agency concentrates the functions of assessment and monitoring at national level and also manages the discretional funding linked to the development of the National Quality Plan.

Health information systems have been developed and trying to improve coordination among regions. The Institute of Health Information is the repository of administrative databases and basic health-related statistics for the ACs, managing the project REBECA. This ambitious project, started in 2008, gathers a large repertoire of data produced at the regional level, including determinants of health, population, health status, health care system (quality and outcomes, catalogue of services and accessibility, promotion, protection and prevention, health care resources and utilization), health care expenditure, medicines and medical devices and consumers' rights. In addition, the Institute compiles the national minimum data set for hospital discharges, the national catalogue of hospitals, the national catalogue of primary care centres and the national statistics for inpatient centres; it also manages the National Health Survey, the Health Care Barometer and the National Mortality Register. All these sources of information have allowed for the building of the Set of Key Indicators for the SNS (INCLASNS); the chosen indicators cover demographics, health status and its determinants, health care resources supply, activity, quality, expenditure and citizens' satisfaction [18].

At consultation level, ICTs are improving coordination with the implementation of electronic medical records (currently implemented within the regions; there are pilot projects across the regions[19]) and improving cost savings with the electronic prescription of medicaments (better follow- up of patients and avoiding misuse).

In terms of public intervention on lifestyle patterns, Spain has been quite successful in introducing anti-tobacco law (strict regulation of advertising and places to smoke) and enacting stricter rules on occupational health and accident prevention and in results regarding diminishing traffic accidents (through campaigns and legislation). In the area of pharmaceuticals' consumption, education is being improved by anti self-medication campaigns and the new adaption of packages to dose prescription.

# 8. Challenges

Over the years, with a lower share of GDP allocated to health compared to other European countries, the Spanish NHS has shown the ability to yield sustained good results measured in different dimensions of performance:

- Population health status parameters and health care amenable outcomes.
- Coverage, access and financial equity parameters.
- Health care quality and safety.
- Users' satisfaction and system legitimated by the population.

Despite this positive achievement, the NHS is still striving to overcome some of the challenges rooted in its own goals:[20]

[18] The statistic portal of National Health System is publicly available in http://www.msps.es/estadEstudios/estadisticas/sisInfSanSNS/home.htm

[19] ICT in the National Health System Ed. 2010 http://www.ontsi.red.es/articles/detail.action?id=4559&request_locale=en

[20] The OECD overall efficiency score for Spain is slightly higher than its group average (about 1.8 years potential gain to be made through greater efficiency in the sector compared to the group average of 2.6 years) and higher than the

- Alignment of providers' incentives with the system's quality and efficiency objectives throughout the system (different levels of management, health professionals, non-health professionals, external providers …). For example, staff incentives could be improved and adaptation to chronic diseases and changes in demand
- Transition from an acute care-driven model to the management of chronic diseases, including mental disorders.
- Improve the integration of the different levels of care, increasing the resolution capacity of GP by boosting their case manager's role.
- Shifting to a user-centred model in a predominantly public provision structure, staffed mainly by civil servants and statutory personnel. It is necessary a cultural change aimed to increase the productivity of specialized facilities, such as hospitals, medical image equipments, and so on, in order to reduce the waiting list for ambulatory consultations and diagnostic test and to cope with patient's expectations.
- The issue of ageing workforce should be tackled, as in the rest of the EU, through the promotion of the medical education and more flexible salary regulation rewarding quality and efficient work.

OECD average (2.3 years). There are nevertheless areas for improvement including through better sharing of experience and improving information on the quality of services across regions.

# Statistical Annex - Spain[21]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 7.3 | 7.3 | 7.2 | 7.2 | 7.3 | 8.2 | 8.2 | 8.3 | 8.4 | 8.5 | 9.0 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1184 | 1255 | 1338 | 1405 | 1492 | 1705 | 1791 | 1899 | 2052 | 2207 | 2374 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 5.3 | 5.3 | 5.2 | 5.2 | 5.2 | 5.7 | 5.8 | 5.9 | 6.0 | 6.1 | 6.5 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 855 | 903 | 957 | 1000 | 1063 | 1201 | 1263 | 1340 | 1462 | 1585 | 1722 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 5.6 | 5.9 | 6.3 | 6.8 | 7.1 | 7.2 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 16200 | 17200 | 18500 | 19400 | 20600 | 20900 | 21900 | 22900 | 24700 | 26200 | 25700 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | 0.4 | 0.5 | 0.5 | 0.6 | 0.6 | 0.7 | 0.8 | 0.8 | 0.9 | 0.9 | : | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | : | 0.1 | 0.1 | : | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 1.5 | 1.6 | 1.5 | 1.5 | 1.6 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 1.1 | 1.1 | 1.1 | 1.1 | 1.2 | 1.4 | 1.4 | 1.3 | 1.3 | 1.3 | 1.3 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | : | 12.6 | : | 13.1 | : | : | 14.9 | : | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | : | : | : | 31.7 | : | 28.1 | : | : | 26.4 | : | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 11.9 | 11.7 | 11.5 | 11.5 | 11.2 | 11.7 | 10.4 | 10.0 | 10.0 | : | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 82.4 | 82.4 | 82.9 | 83.2 | 83.2 | 83.0 | 83.7 | 83.7 | 84.4 | 84.3 | 84.3 | 82.3 | 82.3 |
| Healthy life years at birth females | 68.2 | 69.5 | 69.3 | 69.2 | 69.9 | 70.2 | 62.5 | 63.1 | 63.3 | 62.9 | 63.2 | 62.3 | 61.6 |
| Life expectancy at birth males | 75.3 | 75.3 | 75.8 | 76.2 | 76.3 | 76.3 | 76.9 | 77.0 | 77.7 | 77.8 | 78.0 | 76.3 | 75.9 |
| Healthy life years at birth males | 65.2 | 65.6 | 66.5 | 66.0 | 66.6 | 66.8 | 62.5 | 63.2 | 63.7 | 63.2 | 63.7 | 61.5 | : |
| Infant mortality | 4.9 | 4.5 | 4.4 | 4.1 | 4.1 | 3.9 | 4.0 | 3.8 | 3.8 | 3.7 | 3.5 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | : | : | : | 98.9 | : | 99.5 | : | : | 98.3 | : | : | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 72.2 | 72.0 | 71.6 | 71.2 | 71.3 | 70.5 | 70.6 | 70.6 | 71.3 | 71.8 | 72.5 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 23.2 | 23.3 | 23.6 | 23.9 | 23.7 | 22.7 | 22.6 | 22.4 | 21.4 | 21.0 | 20.7 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | 2.4 | 2.2 | 2.6 | 2.6 | 2.6 | 3.4 | 3.2 | 3.3 | 3.3 | 3.4 | 3.3 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | 1.8 | 1.7 | 1.9 | 1.9 | 1.8 | 1.8 | 1.6 | 1.6 | 1.6 | 1.6 | 1.5 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 32.2 | 33.3 | 35.8 | 44.2 | 42.4 | 45.0 | 48.9 | 49.0 | 53.9 | 51.0 | 54.2 | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 287.3 | 308.5 | 331.8 | 311.0 | 305.1 | 328.3 | 340.1 | 379.9 | 365.4 | 368.3 | 352.2 | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 617.3 | 652.7 | 658.2 | 681.4 | 742.6 | 756.3 | 749.8 | 747.7 | 737.2 | 761.1 | 815.8 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | : | : | : | : | : | 83.0 | 86.0 | 85.0 | 86.0 | 84.0 | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 292.6 | 290.3 | 284.9 | 279.0 | 273.2 | 265.2 | 263.0 | 259.7 | 255.1 | 255.5 | 250.8 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | : | : | : | 8.7 | : | 9.5 | : | : | 8.1 | : | : | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | 11243 | 10904 | 10944 | 11017 | 10826 | 10780 | 10712 | 10659 | 10567 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | : | : | : | : | 3026 | 4382 | : | 6120 | 5031 |
| Hospital average length of stay | : | : | 8.8 | 7.7 | 7.7 | 7.7 | 7.2 | 7.1 | 7.0 | 7.2 | 7.0 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | : | : | : | : | 22.0 | 29.1 | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | 249.0 | 269.3 | 284.4 | 297.2 | 325.2 | 395.8 | 407.0 | 424.6 | 446.2 | 464.2 | 474.2 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 179.9 | 194.9 | 209.7 | 219.4 | 240.1 | 289.7 | 295.9 | 305.5 | 322.3 | 337.3 | 345.9 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | 21.7 | 22.1 | 22.0 | 21.9 | 22.7 | 24.0 | 23.4 | 23.1 | 22.4 | 21.8 | 21.3 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 15.7 | 16.0 | 16.1 | 16.2 | 16.7 | 17.6 | 17.0 | 16.6 | 16.2 | 15.8 | 15.5 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | 0.9 | 1.0 | 1.2 | 1.2 | 1.3 | 2.3 | 2.3 | 2.4 | 2.4 | 2.5 | 2.4 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | 0.9 | 1.0 | 1.2 | 1.2 | 1.3 | 2.2 | 2.2 | 2.2 | 2.3 | 2.4 | 2.3 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 94.0 | 95.0 | 95.0 | 95.0 | 96.4 | 98.2 | 96.7 | 96.2 | 97.9 | 96.4 | 96.9 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | : | : | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[21] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# France

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (27100 PPS in 2008) in France is higher than the EU average (25075 PPS). The country has been hit by the economic crisis with a forecasted GDP growth of -2.2% in 2009 and a slow recovery in 2010 (+1.3%) and 2011 (+1.5%).[1] France is however one of the first European countries to officially exit recession by posting a +0.3% in second quarter 2009 and, compared to many neighbouring countries, the recession has not been as deep. Nevertheless, the combination of a sustained domestic demand, relatively dynamic imports, and declining market shares could lead to increasing external balances and a sluggish recovery. This could have a major impact on public finances since deficits have been increased (8.3% of GDP in 2009) through the massive state interventions taken. The debt-to-GDP ratio is expected to rise to 85.2% in 2010 and approach 90% in 2011.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (11.2% in 2008) is well above the EU average[3] (9.6% in 2008) but has not increased much since 2000 (+1.1%). France is the country that spends the most on health care as a percentage of GDP among all 27 EU countries. Public expenditure on health as a percentage of GDP is also above the EU average (8.7% compared to 7.4% in 2008). The evolution in expenditure results from growth in the volume and price of care provided, which is in turn linked to general inflation since, on average, the health care price index has developed at a similar pace to the general price index. However, the growth in hospital prices has been higher while the growth in the price of drugs was slower. When looking at per capita expenditure both total (3023 PPS) and public (2351 PPS) are also significantly higher than the EU average (2381 PPS and 1826 PPS) in 2008 and have significantly increased since 2000 (from 2221 and 1764 PPS).

**The role of technology**

Total expenditure on pharmaceuticals[4] as a percentage of GDP is slightly above the EU average (1.8% vs. 1.5% in 2008) and has not so much changed over the last decade, even though France has the second highest consumption of medicines per capita after Greece.[5] France's high volume of consumption of pharmaceuticals may be linked to relatively low level of prices since the State concludes long-term agreements with pharmaceuticals firms. Nevertheless, public expenditure as a % of GDP is slightly above the EU average (1.2% vs. 1.0% in 2008) and has slightly increased over the decade (1.1% in 2000), with a slight decrease in 2008, for the first time since the 1990s. The number of PET and angiography units[6] per 100 000 inhabitants (around 0.1 and 0.8) are about the EU average while, in comparison, the number of CTS and MRI units[7] (around 1.1 and 0.6 respectively in 2008) are below the EU average. This relatively low technology supply in France compared to its European neighbours and its uneven territorial distribution can be explained by the fact that the assessment of new or existing technologies in France was only partial, and much of the initiative for assessment was left to professionals and institutions. However, supervision and

1 European Commission (2010), European Economic Forecast – Spring 2010.
2 Data on expenditure for France is taken from Eurostat and OECD health data.
3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.
4 Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.
5 OECD Health Data 2010.
6 Eurostat 2010, data for hospitals only.
7 Eurostat 2010, data for hospitals only.

evaluation of technologies, particularly for the most expensive ones, has improved since specific agencies based on rigorously acquired scientific expertise like the AFFSAPS[8] or HAS – the French National Authority for Health – have got a role in conducting and gathering health technology assessment. The HAS has been set up by the French government in August 2004 in order to bring together under a single roof a number of activities designed to improve the quality of patient care and to guarantee equity within the healthcare system.

**Health Status and healthy behaviour – life-styles – risk factors**

Life expectancy (84.9 for women and 77.8 for men in 2008) and healthy life years (64.2 for women and 62.4 for men in 2008) are slightly above the average in the EU.[9] However, the increase in the number of expected healthy life years is less clear, less steady than for the life expectancy. Mortality is mainly due to cardiovascular diseases (32.3%), cancer (27.6%), accidents (i.e. external causes, poisoning) and disorders of the respiratory system. Mortality by cancer, particularly lung and breast cancer is relatively high by OECD standards.[10] The health inequalities between socio-economic groups remain substantial and there are noticeably higher mortality rates in the northern part of the country which may be partly explained by risks factors such as higher alcohol consumption. Data shows an increase in the proportion of the population which is obese (from 7% in 1995 to 11.2% in 2008), although this is not as large an increase as in other EU countries. In comparison, alcohol consumption has decreased substantially since the 80s (-7 litres per inhabitant at 12.6 litres in 2007) but is still above the EU average (11 litres per inhabitant in 2007) and remains problematic in some socio-economic groups and the young population. Data also indicates that there has been a slight decrease in the share of the population that smokes regularly (27% in 2000 to 26% in 2007). These values indicate that compared to the EU average, the same tendency is observed but the extent of improvement is smaller. It shows that there is room for more effective health promotion and disease prevention notably targeted at more vulnerable groups.

# 2. Expenditure prospects: population ageing and future health status

Population is projected to increase by 9.9 million from 2008 to 2060. As a consequence of decreasing rates of fertility and increasing life expectancy, France's population is ageing. Life expectancy is projected to increase by 7.7 years for men and 5.8 years for women though less than the EU average (8.5 years for men and 6.9 years for women). The share of the old (65+) is projected to increase by 9.4 pps and the share of the very old (80+) by 5.8 pps (well below the EU average of 13 pps, thanks to the highest fertility rate among European Union countries) from 2008 to 2060.

Overall, projected health care expenditure is expected to increase, adding to the strong budgetary pressure from other age-related items of public expenditure (mainly pensions) contributing to the high risk for long-term sustainability of public finances. As a result of ageing[11], health care expenditure is projected to increase by 1.4 pps of GDP (below the average change in the EU of 1.7 pps). Good health (translated by a constant health scenario) could reduce the projected expenditure increase by 70% (from 1.4 pps to 0.4 pps) highlighting the importance of improving health behaviour.

[8] Agence française de sécurité sanitaire des produits de santé (created by 1998 law).

[9] Data on life expectancy and healthy life years is from the Eurostat database.

[10] Mortality rates are based on the crude number of deaths according to selected causes in the WHO Mortality Database; they have been age-standardised to the 1980 OECD population, to remove variations arising from differences in age structures across countries and over time within each country (OECD Health at Glance 2009).

[11] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf).

# 3. Health care coverage and expenditure

A social health insurance system in which all legal residents have to register with the public health insurance program (sickness insurance funds) provides universal population coverage. The universal coverage is given, first, on the professional/ occupational basis and secondly, since 2000, on the basis of residence. The system is based on the principles of solidarity and the guarantee of financial protection against life's contingencies for everyone. The basic (though comprehensive in scope) social health insurance system had three dominant schemes – the general health insurance scheme, the agricultural scheme and the national insurance fund for self-employed non-agricultural workers – brought together under the National Union of Sickness Insurance Funds (UNCAM) since 2004. These funds are not allowed to define the benefit basket, the level of coverage or premiums, and risk-equalisation is in place. In addition to the basic social insurance scheme (financed by social security contributions and taxation), more vulnerable households (i.e. with a yearly income below €7,611 for a single person in 2010, €13,700 for a 3-person household[12]) benefit from free complementary sickness insurance – "Complementary Universal Health Coverage" (CMUC), an effort by authorities to improve access to health insurance and therefore to health care by those more vulnerable groups. In order to avoid a threshold effect, if the income exceeds the threshold to the limit of 20%, the government finances a part of the premium paid by the insured for complementary insurance. More and more people are also covered by private voluntary health insurance. This kind of insurance has gained in popularity since the State has been inclined in the 1990's to reduce the level of reimbursement from the compulsory social health insurance - although keeping 100% coverage for long-term illnesses. 88.4% of the population is covered by complementary (to cover for patients' cost-sharing for public goods and services) and supplementary (to cover the services not covered by public provision/ funding) voluntary health insurance by individual initiative (60%) or in the context of employment (40%).

Cost-sharing applies to most goods and services, especially primary care and specialist consultations, laboratory tests, pharmaceuticals, eyeglasses and contact lenses, dental care and dental prostheses. Pregnant women, those with certain medical conditions, those with an income below a defined threshold, those on social assistance, and those victims of accidents at work are exempted from cost-sharing. The private voluntary complementary health insurance increases the rate of reimbursement, reducing the discrepancy between the actual amount paid by patients and the amount they are reimbursed by their social health insurance fund. Prostheses, drugs and dental care are types of care for which the use of voluntary insurance decreases the most this discrepancy. In doing so, complementary health insurance reduces the ability of cost-sharing to control overconsumption as it renders users less cost-aware. As a result, the authorities implemented a ticket, and a "deductible" that are not covered by complementary health insurance. According to the ticket system implemented in 2005 the patient has to pay €1 for each physician visit and each biomedical analysis. The so-called medical deductible has been implemented since 2008. The patient has to pay €0.50 per drug box, €0.50 on each paramedical procedure and €2 for each medical transport.

Private expenditure (patient co-financing and voluntary private health insurance) represented around 22.2% of the total health expenditure in 2008, i.e. an increase since 2007 (21%) and a figure which has now reached about the EU average (22.7% in 2008). Until 2007, the tendency was that the part of private expenditure remained stable and evolved in line with public expenditure growth. Out-of-pocket spending accounts for a small part of private expenditure (7.4% of total health spending which is a small share in the EU context – EU average of 14.4% in 2008) and having

[12] See the official website of the French Administration: http://www.service-public.fr.

registered a small reduction since 2000 (7.1%) – though it has increased from 6.8% in 2007.[13] Further, in the National Health Accounts, out-of-pocket as a share of health care consumption (Consommations de soins et biens médicaux, CSBM) has increased regularly since 2004 (from 8.3% in 2004 to 8.6% in 2006 and 9.4% in 2008).

# 4. Collection, pooling and allocation of financial resources

In 2008, 77.8% of total health expenditure funding came from public sources, about 7.4% from out-of-pocket and the rest mainly from private voluntary health insurance. The public sources are composed of employers and employees social security contributions, on the one hand, and by personal income taxes on the other hand. The contribution of each beneficiary is mainly related, since 1997, to a tax on income – or "household resources", broader than simply on earned income, with those having an income below a certain level entitled to a free coverage (around 1.8% of the population in 2009). Since 2001, salaried workers and self employed have similar schemes.

The Parliament and the central government set the level of taxes to be earmarked to health care while the Parliament sets the level of social contributions to social health insurance. The Parliament also sets the total public budget for health and by type of care. The central government determines resource allocation across the regions and the payment methods of hospitals. Employers and union federations jointly control the social health insurance funds under the State's supervision. Both entities set the remuneration methods of physicians. While the State plays the steering role in administering the system, some decentralisation has been introduced during the 1990's to give more responsibilities to regional authorities in the planning and financial resource allocation for hospitals.

This system involves a strong collaboration between the entities of the system. The legitimacy of the social partners in the management of the health insurance funds and their role with regard to the role of the state was, for example, one of the questions that have been raised often in the past. Over time, the balance tends to shift towards increasing state intervention. However, the division of responsibilities between the central government and the regions remains unclear in certain areas and could, therefore, benefit from further clarification to avoid conflict relations between the state authorities and the health insurance funds and improve the efficiency in running the health sector. The number of actors involved in decision making may partly explain why public expenditure on health administration and health insurance as a percentage of GDP (0.5%) and as a % of current health expenditure (4.3%) is above the EU average (respectively 0.3% and 3.1%), being respectively the highest and the second highest of the Union in 2008. This shows that there is perhaps scope to reduce administrative costs and improve the general management of the sector. The setting up of the Regional Health Agency (ARS), this year 2010, can certainly contribute to enhance the efficiency in running the health sector. For instance, the ARS aims at improving care coordination between outpatient and inpatient care and at optimizing the regional health care supply.

Every year, the State sets an unconstrained target for social health insurance spending for the following year (systematically exceeded over the last few years).[14] As a consequence, increases in user fees or delisting certain services have taken place. Recently, the State has tried to set the target depending on new rules such as diagnosis-related payments instead of a per diem rate for funding hospitals. This principle to set a target on expenditure remains, however, strongly opposed by professional organisations. A "regional mechanism" has also been set in place for public hospital expenditure with the aim of reducing regional inequalities by allowing higher growth to the less

[13] As a result, France scores 6 out of 6 on the breadth, 6 in the scope and a bit more than 5 on the depth of basic coverage according to the OECD scoreboard.

[14] According to the OECD, France scores 2 out of 6 in the OECD scoreboard due to the low stringency of budget controls.

favoured regions in term of supply, mortality index and hospitals' productivity. Since the 1990's, targets for limiting the expenditure are negotiated with laboratories, private for-profit hospitals and freelance nurses. Refunds can be charged in case of non-compliance with budget targets. However, it has never been applied so far. Price-setting of pharmaceuticals is part of large agreements with the drugs producers, which include targets for the volume of prescribed drugs and a reduction in advertising expenditure.

# 5. Providers status, referral systems and patient choice

The French system is strongly characterized by freedom of choice and unrestricted access for patient, and by free practice of professionals on the basis of accreditation. The primary and secondary health care delivery relies then on an abundant and easily accessible combination of public and private supply. Providers are organised in two groups: the health institutions that include hospitals, nursing homes and laboratories, which provide most of the inpatient care and employ mainly salaried health professionals[15]; and the generally self-employed professionals such as general practitioners (GPs – often called family doctors), specialists, dentists, nurses, and pharmacists who provide outpatient care. Primary care is provided by self-employed physicians and other professionals mostly in private individual practices. This is also the case for specialist outpatient services, although sometimes these also work in private clinics. Day case and inpatient care is provided in hospitals. Hospitals are organised in two categories: the public sector accounting for 66% of total beds and the private, profit-making (25% of beds) or not-for profit (9% of beds), sector mainly concentrated on surgical procedures.

In 2008, the number of practising physicians per 100 000 inhabitants (334) like the number of general practitioners (163) or the number of practising nurses (about 800) is slightly above the EU average but has not increased much during the last 25 years (+10%). Nevertheless, it is expected to decrease in the near future, depending on an increased numerus clausus and demographic changes (72.3% of the physicians are aged 45+, a share that is significantly higher than the EU average of 63.5% in 2008). According to Attal-Toubert and Vanderschelden (2009), the ratio of practising physicians will reach a minimum in 2020 (276 per 100 000 inhabitants), and will then increase to 292 per 100 000 inhabitants in 2030.[16] In addition, there are differences in the supply of physicians across regions as, while total supply is regulated, the location of physicians is not. The numerus clausus system has been introduced in 1971 in order to regulate access to health professions. Indeed, a ministerial decree sets annually the number of places available for each health qualification and research units. This policy has resulted in the stabilisation of doctors' numbers but, today, some specialities implying high responsibilities and obligations suffer a lack of resources, such as anaesthesiology, gynaecology or obstetrics. The same problem, which might become more severe in the near future, concerns other specialities and nurses working in hospitals. Specific incentives could be developed to promote and encourage staff to work in some specialities currently in shortage on the one hand and to decrease geographical disparities on the other hand and more generally, the human resources strategy needs to tackle staff and population ageing in the future. In this view, some tax benefits have been granted since 2006 to physicians who settle in areas where there is a lack of supply of physicians.

The lack of coordination between primary and specialist and hospital care has been one major problem of the health care system, potentially leading to unnecessary use of specialist and hospital care and the duplication of procedures resulting in higher expenditure. To improve the situation, the figure of a referring family doctor and provider networks have been put in place from July 2005.

[15] The net salary of a full-time employed doctor in hospital is very close to the one earned by a self-employed GP.

[16] Attal-Toubert, K. and Vanderschelden M. "La démographie médicale à l'horizon 2030: de nouvelles projections nationales et régionales", DREES, Etudes et résultats, n°679, février 2009.

Practically, the patient chooses and registers his general practitioner at the social health fund. The patient is free to change to another general practitioner but has to report any change. If necessary, the GP plays the role of gatekeeper[17] and sends his patient to a specialist who will report, with the authorization of the patient[18], any relevant information to the GP in order to follow-up and coordinate the care. The procedure is not compulsory (even if considered as mandatory by 82% of French[19]) but the patient has to face financial penalties applied to the reimbursement rate by the national sickness fund if he/she doesn't designate his/her preferred family doctor and does follow a referral procedure. Around 80% of the insured patients have designated a preferred doctor so far. Patients are also free to choose a specialist and a hospital. Each patient has his own medical card called "Carte Vitale" which transmits all the transactions to the health fund where he is registered. However, outlines to put on the card prescriptions and reimbursements, as well as information about the health status, have not been implemented. Therefore, it does not contain any medical information and could not be used for care coordination. The creation of an individualized medical record (Dossier medical personnalisé, DMP) is currently under discussion.

The central government via the National Authority for Health (HAS) evaluates the best medical practices and promotes compulsory life-long medical education. It sets a package of recommendations and targets in consultation with funds and professionals such as for drug prescriptions (generics, right prescription) that each physician has to follow. Blames could be issued if non-compliance to the recommendations is frequent, serious or costly for the health system. Such procedures must have had a positive effect on doctors' prescribing behaviour and efforts should continue in that direction.

France has a number of acute care beds per 100 000 inhabitants (347.6 in 2008) slightly below the EU average (383.2 in 2008). These results reflect efforts made during the 1980's and 1990's to reduce the number of hospitals beds as well as the average hospital length of stay (see further). However, it appears that they are considerable discrepancies in bed numbers across regions. In 2001, there were variations from 2.5 to 6 beds per 1000 inhabitants, Paris excluded (9.8).[20] In 2009, variations go from 2.4 to 4.4 beds, with 3.3 for the region Ile de France (including Paris). This may be due to the fact that decisions regarding bed capacity have been delegated to the regions. Geographical supply in beds could be somewhat improved by a better distribution. From 1996, provider networks at local level have been set in place to improve coordination between ambulatory care and hospital care by stimulating creativity and new forms of organisation.

Finally, in 2009 pharmaceuticals are exclusively distributed through 23200 pharmacies and their establishment is regulated by a numerus clausus taking into account the size of the population and a distance factor.

# 6. Purchasing, contracting and remuneration systems

In 2009, the most costly services as share of total spending were: the hospital budget (44%) covering accommodation's costs, nursing care and equipment; physicians' fees (25%); and pharmaceuticals (20%).[21] Two systems of payment have been implemented, the first one is a reimbursement system (ambulatory care) and the second one is a third-party payer system where the patient pays only the co-insurance or the co-payment (inpatient care and pharmaceuticals).

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17 The service of gynaecologists, ophthalmologists and dentists are covered by the state without a referral by a GP.

18 Some specialists don't need authorization to pass relevant information to care, such as gynaecologists, ophthalmologists and psychiatrists.

19 IRDES, ESPS 2006.

20 IRDES, DREES, 2001 (in Health Care Systems in Transition, WHO 2004).

21 Source: National Health Account.

Outpatient primary and specialist care doctors are self-employed and paid on a fee-for-service basis paid by the patient at the consultation and partly reimbursed at a later stage by their social health insurance. The fees are fixed and negotiated between physicians' unions and the public health insurance funds under agreements signed for every four or five years. If 97% of the practitioners signed the convention with public health insurance fund, only 86% of general practitioners and 61% of specialists conform to this fee. 14% of general practitioners and 39% of specialists with extra-qualifications or experience can charge for an extra fee. Medical practitioners and clinics non-conventioned have to display their prices. No reimbursement is given by the statutory health insurance to patients visiting non-conventioned professionals.

Hospital inpatient doctors are mostly salaried employees of the hospitals, with the salary scale defined at central level. For hospital day case or inpatient care, a third-party payer system is generally used whereby the patient pays only the co-insurance or the co-payment.

The amount paid by the patient and not taken in charge by the compulsory insurance is called "ticket modérateur". An average of 70% of the cost of a visit to a GP is thereby refunded, from 80% to 95% for a surgery, 95% for childbirth, 70% for x-rays, dental care and nursing at home among others. Under certain conditions such as some chronic disease or care requiring hospital stay of at least 30 days or beneficiaries of the CMUC, individuals could be entitled to a 100% reimbursement of medical and hospital costs. Hospitals are remunerated on a payment per case/ DRG basis.[22] Hospitals are legally autonomous and manage their own budgets. Since the HPST law, they have autonomy to recruit their own medical staff. The so-called "Hôpital, Patient, Santé et Territoires" (Hospital, Patient, Health and Territories / HPST) Law was enacted in 2009 in order to modernize hospitals, enhance health care access and increase health promotion.

The number of inpatient discharges is a bit below the EU average (16146 vs. 16231 per 100 000 inhabitants in 2007) but this is related to many policies that have been put in place over the last decade in order to encourage methods of providing care that are alternative to hospitalization such as day care surgery or hospitalization at home. Among others, extension of hospital's capacity via a theoretical exchange rate of one acute bed for two "non-acute" beds is possible. Day case has increased significantly in the last decade and the percentage of surgical procedures conducted as day cases (36.8%) is now well above the EU average (28.1% in 2007). Hospital average length of stay (5.8 days in 2008) has been slightly decreasing (6 days in 2000) and is lower than the EU average of 7.9 days in 2008. An interesting policy would be to exploit the existing room of manoeuvre to progress further with these efforts. In addition, occasionally long-term care patients undergo an extended use of acute care beds while awaiting appropriate long term care facilities. This indicates that improvements in the provision of long-term care facilities, as currently pursued by authorities, may allow for further increases in hospital efficiency.

**Pharmaceuticals**

The central government regulates the production and distribution of pharmaceuticals and any drug must obtain a formal authorisation to be sold. International price reference is used and based on manufacturing price in DE, ES, IT, and UK. Initial price is also based on the clinical performance and cost of existing treatments. About 4500 pharmaceuticals are reimbursable in France which represents approximately one half of the drug presentations available. The list of reimbursable drugs is established by ministerial ordinance and will contain only drugs having a sufficient medical service rendered (SMR).[23] The amount reimbursed will depend on various criteria such as the effectiveness, the side effects, the place in the therapeutic process, the seriousness of the condition, the properties of the drug and its importance for public health. According to the SMR, the

[22] The OECD score for remuneration incentives to raise the volume of care in France is about 4.5 out of 6 as a result of the use of activity related payment elements in physician and hospital remuneration.

[23] For a period of five years before revaluation.

reimbursement rate for prescribed drugs is chosen between four rates (100%, 65%, 35%, and 15%). In order to control final spending on reimbursable products, the central government sets the prices on producer's side, after bargaining with the drug's committee and the laboratory involved. Generally speaking, for such reimbursed pharmaceuticals, 64% of the sales revenue returns to the producer, 4% to the wholesaler and 26% to the pharmacist. In order to promote the use of generic drugs, the pharmacists have been financially encouraged to offer their clients generic drugs where this is possible. In such cases, an equivalent profit margin is guaranteed. Generics also face a fast-track registration and lower registration fees. Authorities promote rational prescribing of physicians through prescription guidelines, complemented with monitoring of prescribing behaviour and feedback, and education and information campaigns on the prescription and use of medicines. They also promote education and information campaigns for patients. Physicians receive feedback on their prescription behaviour in comparison with that of colleagues and in relation to some sort of national contract/ priorities established between the doctors and the social health insurance funds. Doctors are visited by delegates of the social insurance, who provide them with information on rational prescribing.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Quality of care, especially in hospitals, is a major matter of concern to public French authorities. To improve it, from 1996, the State decided that all health care institutions must be accredited to provide treatment by the HAS. An evaluation procedure is then done on several dimensions such as quality of care, information given to the patient, medical records, general management and risk prevention strategies. The HAS publishes afterward the accreditation reviews. Perhaps performance monitoring in the sector could be further improved by publishing more routine and comparable information on the activity and quality of providers (clinical outcomes, use of appropriate processes, patients' satisfaction and patient experience), which can support choice of provider while help identifying good practices and areas for improvement through peer reviews for example.

Health technology assessment information has been used to define guidelines and determine coverage of new procedures, new medicines and new high-cost equipment, the level of reimbursement of new procedures and new medicines, and to develop guidelines for high-cost equipment. The benefits package is defined on the basis of clinical effectiveness.

The Ministry of Health, on the basis of the overall framework established by the parliament, is responsible for defining priority areas for national programmes in the field of health promotion and disease prevention. The main priorities include cancer, pain control and anti-smoking campaigns. Public health objectives are set in terms of process, outcomes and the reduction of health inequalities. Public expenditure on prevention and public health services as a % of GDP (0.1%) and as a percentage of total current health expenditure (1.4%) are below the EU average in 2008. Vaccination rates are slightly above the EU average (98% vs. 96% in 2008) and screening rates for cervical cancer are relatively high (72.4% of the target population in 2006) though a bit lower for breast cancer (49.9% of target population).

# 8. Challenges

The analysis above has shown that a range of reforms have been implemented in recent years to a very large extent successfully, which France should continue to pursue. For example, improvements in access to health insurance for those more vulnerable, improvements to hospital efficiency, improved data collection and monitoring and better control pharmaceutical expenditure, greater use

of primary care and improvements in care coordination from primary to secondary care. The main challenges for the French health care system are as follows:[24]

- To reinforce human resources strategies to avoid a shortage of physicians in the future as a result of staff and population ageing. This can be done by pushing up numerus clausus ceilings according to projected needs. To improve geographical access to doctors especially between urban and rural areas through incentives system directed at doctors, especially primary care staff.
- To continue efforts to implement cost-containment policies in a system characterised by fee-for-service payment of doctors, retrospective reimbursement and unrestricted freedom of choice for patients. These include continuing to encourage a more rational and coordinated use of care through greater use of primary care and more effective referrals from family doctors to steer demand to other types of care and organise appropriate and cost-effective channels of treatment. Even if patient financial contributions have already been implemented, it may also be worth exploring if cost-sharing can be further adjusted to encourage the use of more cost-effective interventions.
- To continue to promote generic pharmaceuticals by extending reference pricing schemes[25] and by rewarding physicians and pharmacists when encouraging their use.
- To continue to improve the general governance of the system, through strategies to rationalise administrative procedures, therefore enhancing the global system efficiency and quality. Possible areas include: increasing the financial responsibility of the funds, clarifying responsibilities of the various actors in the system, and improving accountability, perhaps through greater use of systems of rewards and fines.
- To improve data collection and comparability in order to evaluate more sorely the activity and quality of providers and the overall system. Possible indicators include preventable hospitalisations, readmission rates, mortality post-hospital, complication during and post operation, prescription mistakes (recommended by OECD[26]). Public comparisons and peer reviews can help providers identify areas for improvement and good practices.
- To enhance health promotion and disease prevention activities i.e. promoting healthy life styles and the reduction of antibiotics overconsumption/ abuse (too high prescription rate and consequently high resistance of bacteria).

[24] The OECD overall efficiency score for France is above its group average (about 1.6 years potential gain to be made through greater efficiency in the sector compared to the group average of 2.5 years) and above the OECD average (2.3 years). Areas for improvement include: explore the main causes of health inequities notably in relation to the role of the complementary private insurance; give a greater role to gatekeeping; improving public and comparable information on the quality of health care services across providers; reconsider government controls on labour and equipment; explore options to reduce administrative costs including the consolidation of social security funds.

[25] Set fixed reimbursement limits of pharmaceuticals according to the "national generic pharmaceutical".

[26] Millar J, Mattke S and the members of the OECD Patient Safety Panel (2004), Selecting indicators for patient safety at the health systems level in OECD countries, Health Technical Papers, no. 18, Oct. 2004, OECD, Paris.

# Statistical Annex - France[27]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 10.1 | 10.1 | 10.1 | 10.2 | 10.5 | 10.9 | 11.0 | 11.1 | 11.0 | 11.0 | 11.2 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1981 | 2080 | 2221 | 2341 | 2506 | 2524 | 2623 | 2767 | 2852 | 2981 | 3023 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 8.1 | 8.1 | 8.0 | 8.1 | 8.4 | 8.7 | 8.7 | 8.8 | 8.7 | 8.7 | 8.7 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 1575 | 1652 | 1764 | 1859 | 1996 | 2004 | 2080 | 2193 | 2257 | 2355 | 2351 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 8.2 | 8.6 | 8.9 | 9.2 | 9.3 | 9.4 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 19500 | 20400 | 22000 | 22900 | 23700 | 23200 | 23800 | 24900 | 25700 | 27000 | 27100 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 1.6 | 1.6 | 1.7 | 1.7 | 1.8 | 1.8 | 1.9 | 1.9 | 1.8 | 1.8 | 1.8 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 1.0 | 1.1 | 1.1 | 1.2 | 1.2 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.2 | 1.0 | 1.0 |
| Proportion of the population that is obese | 8.2 | : | 9.0 | : | 9.4 | : | 9.4 | : | 10.5 | : | 11.2 | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 28.0 | 28.0 | 27.0 | 27.0 | 26.0 | 25.4 | 23.4 | : | 25.9 | : | 26.2 | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 14.9 | 14.5 | 14.0 | 14.2 | 13.9 | 13.4 | 13.1 | 12.7 | 13.0 | 12.6 | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 82.6 | 82.7 | 83.0 | 83.0 | 83.0 | 82.7 | 83.8 | 83.7 | 84.4 | 84.8 | 84.9 | 82.3 | 82.3 |
| Healthy life years at birth females | 62.8 | 63.3 | 63.2 | 63.3 | 63.7 | 63.9 | 64.1 | 64.3 | 64.1 | 64.2 | 64.2 | 62.3 | 61.6 |
| Life expectancy at birth males | 74.8 | 75.0 | 75.3 | 75.5 | 75.7 | 75.8 | 76.7 | 76.8 | 77.3 | 77.6 | 77.8 | 76.3 | 75.9 |
| Healthy life years at birth males | 59.2 | 60.1 | 60.1 | 60.5 | 60.4 | 60.6 | 61.2 | 62.0 | 62.7 | 63.0 | 62.4 | 61.5 | : |
| Infant mortality | 4.8 | 4.4 | 4.5 | 4.6 | 4.2 | 4.2 | 4.0 | 3.8 | 3.8 | 3.8 | 3.8 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 99.4 | 99.9 | 99.9 | 99.9 | 99.9 | 99.9 | 99.9 | 99.9 | 99.9 | 99.9 | 99.9 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 79.5 | 79.4 | 79.4 | 79.4 | 79.7 | 79.4 | 79.3 | 79.3 | 79.1 | 79.0 | 77.8 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 7.1 | 7.2 | 7.1 | 7.2 | 7.0 | 6.8 | 6.7 | 6.8 | 6.8 | 6.8 | 7.4 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | 8.0 | 8.1 | 8.0 | 7.9 | 7.6 | 7.5 | 7.3 | 7.4 | 7.2 | 7.1 | 7.0 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | 5.4 | 5.4 | 5.3 | 5.2 | 5.0 | 4.9 | 4.6 | 4.7 | 4.5 | 4.4 | 4.3 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 53.0 | 55.7 | 57.9 | 60.4 | 62.9 | 64.9 | 67.1 | 68.8 | 70.3 | 71.2 | 72.3 | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 326.3 | 325.8 | 327.2 | 330.0 | 332.3 | 333.7 | 335.6 | 336.1 | 335.5 | 335.0 | 334.0 | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 639.2 | 647.8 | 688.6 | 707.3 | 724.3 | 743.5 | 764.3 | 787.6 | 807.3 | 798.9 | : | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 161.3 | 159.6 | 161.1 | 162.0 | 162.8 | 163.8 | 164.5 | 164.6 | 164.1 | 163.0 | 163.0 | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 424.0 | 416.1 | 404.8 | 393.9 | 385.4 | 375.9 | 369.0 | 363.7 | 357.9 | 354.0 | 347.6 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 6.6 | 6.6 | 6.9 | 7.6 | 7.5 | 7.4 | 7.3 | 7.2 | 7.0 | 7.0 | 6.9 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | 18397 | 17937 | 17517 | 16664 | 16525 | 16445 | 16367 | 16146 | 16075 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | 7074 | 7545 | 7842 | 8224 | 8722 | 9647 | 10224 | 9378 | 9321 | 6120 | 5031 |
| Hospital average length of stay | : | : | 6.0 | 6.0 | 6.1 | 6.0 | 5.9 | 5.9 | 5.8 | 5.8 | 5.8 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | 28.4 | 30.3 | 31.7 | 33.1 | 34.6 | 37.0 | 38.6 | 36.8 | 36.8 | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | 305.6 | 331.7 | 364.9 | 395.5 | 419.4 | 421.8 | 440.5 | 462.3 | 464.0 | 485.1 | 498.0 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 196.6 | 216.4 | 244.5 | 268.3 | 288.1 | 291.9 | 304.9 | 321.0 | 321.7 | 336.5 | 331.0 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | 15.9 | 16.4 | 16.9 | 17.3 | 17.2 | 17.2 | 17.3 | 17.2 | 16.8 | 16.8 | 16.9 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 10.2 | 10.7 | 11.3 | 11.8 | 11.8 | 11.9 | 12.0 | 12.0 | 11.7 | 11.7 | 11.2 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | 2.2 | 2.2 | 2.2 | 2.2 | 2.1 | 2.1 | 2.1 | 2.0 | 2.0 | 2.0 | 2.0 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | 1.5 | 1.5 | 1.5 | 1.5 | 1.4 | 1.5 | 1.4 | 1.4 | 1.4 | 1.3 | 1.4 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 97.0 | 98.0 | 98.0 | 98.0 | 98.0 | 97.0 | 97.0 | : | : | 96.0 | 98.0 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | 54.0 | : | : | : | 74.9 | : | 72.4 | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | 40.8 | 47.1 | 49.9 | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[27] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Italy

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (25600 PPS in 2008) is above the EU average (25075 PPS in 2008) up from 22300 in 2000. From 2000 to 2007 Italy grew at an average rate of 1.1%. As a result of the global economic crisis, GDP growth was -5% in 2009 and the unemployment rate reached 7.8% in the same year. The response to the crisis was to implement a fiscal stimulus package to limit economic contraction. The economy shows signs of recovery with a forecasted economic growth of 0.8% in 2010 and 1.4% in 2011.[1] As a consequence of the crisis and the fiscal stimulus, the budget deficit reached 5.3% of GDP in 2009 and is forecasted to reach 5.3% in 2010. As just announced by the government, fiscal consolidation to bring government revenues and spending into line in the coming years will have consequences for the health sector through the reduction in pharmaceutical expenditure and the freezing of the wage bill.[2]

**Recent trends of expenditure**

Total (public plus private) expenditure[3] on health as a percentage of GDP (9.1% in 2008) is slightly below the EU average[4] (9.6% in 2008) and below the EA average (10% in 2008). It has increased from 7.7% in 1998. Public expenditure on health as a percentage of GDP is also below the EU average (7% vs. 7.4% in 2008), having increased from 5.4% in 1998. Total (2248 PPS) and public (1812 PPS in 2008) per capita expenditure were about the EU average (2381 PPS and 1826 PPS in 2008), having consistently increased since 1998 (1571 PPS and 1105 PPS), though at a much lower rate after 2005. The significant slowdown of the increase in the public health care expenditure has been achieved due to the governance regulations and procedures implemented in the last years, namely the Health Pact between State and Regions, the monitoring of the fulfilment of the budget objectives and the activation of the Deficit Reduction Plan procedure for those regions not complying with the agreed budget rules. As a result, public health care expenditure has grown by an annual average of 2.9% in nominal terms over the four-year period 2006-2009, against the 7.3% of the previous five-year period[5].

**The role of technology**

Total (1.7%) and public (0.8%) expenditure on pharmaceuticals as a percentage of GDP was about and below the EU average (respectively 1.6% and 1%) in 2008. Total (19.2%) and public (9%) pharmaceutical expenditure as a percentage of total current health expenditure is respectively slightly above and below the EU average (16.9% and 11.2% in 2008). Expenditure on pharmaceuticals has been more or less constant throughout the decade and shows a decrease starting from 2006. The policy priority is to keep under control the dynamics of public pharmaceutical expenditure by fixing appropriate ceilings as a share of the financing level of the National Health Service (*Servizio Sanitario Nazionale* – SSN) contributed by the State[6]: any expenditure overrun is therefore considered inappropriate and a waste of resources.

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1 European Commission (2010), European Economic Forecast – Spring 2010.

2 In particular, decree law 78/2010, converted into law 122/2010, states: a) wages in the public sector being kept frozen at the level in 2010, over the period 2011-2013; b) measures for containing the level of the expenditure for pharmaceutical products directly provided by hospitals.

3 Data on expenditure is taken from OECD health data.

4 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

5 Istat (2010) "Conto economico consolidato della Sanità – Istituzioni delle amministrazioni pubbliche" http://www.istat.it/dati/dataset/20100430_00/

6 For the details, see section 6.

The number of MRI units (1.9), the number of CTS units (3) and the number of PET scanners (0.2) per 100 000 inhabitants in 2007 are all above the respective EU average (0.9; 1.7; 0.1 in 2007) and show consistent increases over time.[7] According to the 2009 HiT on the Italian health system (European Observatory on Health Systems), reporting on a survey by the Ministry of Health (*I numeri della Sanità*) these types of equipment are not uniformly available across the country. However, the governance settings recently implemented is supposed to lead to a more even distribution of high cost equipment amongst regions.

**Health Status and healthy behaviour – life-styles – risk factors**

Life expectancy (84.2 years for women and 78.5 years for men in 2006) is above the EU average (81 and 74.4 years in 2006) and the EA average. Healthy life years (62 years for women and 62.8 for men in 2007) are above the EU average for men.[8] Mortality by cancer notably lung and breast cancer are, however, relatively high by OECD standards.[9] Data shows a small increase in the proportion of the population which is obese (from 8.6% in 2000 to 9.9% in 2007), but a small reduction in the share of the population that smokes regularly (from 24.4% in 2000 to 22.4% in 2007) and a slight decrease in per capita consumption of alcohol (from 9 litres in 2000 to 8.1 litres in 2003) although data is limited in relation to the latter. All in all health inequalities across socio-economic groups, measured in terms of either age of death dispersions or practising physicians across regions, are at the lower level in the OECD area.[10]

# 2. Expenditure prospects: population ageing and future health status

Population is projected to increase by 260 000 units from 2008 to 2060. Life expectancy is projected to increase by 5.8 years for women (slightly less than the EU average of 6.9 years) and 6.9 years for men (less than the EU average of 8.5 years). The share of the old (65+) is projected to increase by 12.6 pps and the share of the very old (80+) by 9.4 pps (respectively about the same and more than the EU average change of 13 pps and 7.8 pps) from 2008 to 2060.

As a result of ageing, health care expenditure is projected to increase by 1.2 pps of GDP (below the average change in the EU of 1.7 pps).[11] Good health (translated by a constant health scenario) reduces the projected expenditure increase to 0.5, highlighting the importance of improving health behaviour.

# 3. Health care coverage and expenditure

A regionally based National Health Service (NHS), with a division of responsibilities between the central government and the regional governments (set by the 2001 Constitutional Amendment), and funded mainly by taxation, provides full coverage of resident population.[12] On the basis of national

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[7] Data on technology is taken from OECD health data and Eurostat database.

[8] Data on life expectancy and healthy life years is from the Eurostat database. Data on life-styles is taken from the Eurostat database and the OECD health data.

[9] Mortality rates are based on the crude number of deaths according to selected causes in the WHO Mortality Database; they have been age-standardised to the 1980 OECD population, to remove variations arising from differences in age structures across countries and over time within each country (OECD Health at Glance 2009).

[10] OECD (2010) "Health Care Systems: Efficiency and Institutions", Economics Department Working Papers No. 769, p. 11, box 1.

[11] I.e. considering the "pure ageing scenario" of the projections (see The 2009 EPC/EC Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).

[12] Including foreign citizens, and their dependent relatives, who are in one of the following positions: a) employed; b) enrolled in the employment lists; c) had applied for a renewal of the permit of stay. As for dispositions concerning non-EU citizens, see law 40/1998, articles 32-34.

legal provisions, clinical guidelines and a defined catalogue of benefits (*Livelli Essenziali di Assistenza*-LEA), the 20 regions are responsible for providing or funding a wide range of health related services (including primary, specialist outpatient and hospital care, health promotion, disease prevention and rehabilitation, long-term nursing and psychiatric care) for their residents. They do so under the supervisory role of the Government, through the Ministry of Health, who defines general objectives and national policy priorities. A committee (so-called *Comitato LEA*) is in charge of monitoring the provision of LEAs, which is composed of representatives of the ministries concerned (Health and Economy and Finance), the Department of Regional Affairs (within the Presidency of the Council of Ministers) and Regions[13]. Regions may choose to provide extra LEA benefits, and some do, but the relative costs should be covered through their own financial resources.

Primary care and hospital inpatient care are free at the point of use. Outpatient specialist consultations that follow a referral from a general practitioner (GP – family doctor), diagnostic procedures involve a small fee as do pharmaceuticals prescribed by a physician in those regions who have chosen to use a fee. Unwarranted visits to emergency departments also involve a fee. Dental care is guaranteed for specific groups of the populations (children, vulnerable groups such as disabled, people with HIV and those with rare diseases) and in emergency cases, while others purchase dental care out-of-pocket (2009 HiT). Eyeglasses and contact lenses and dental prostheses are not funded or provided by regions (OECD, 2010). Current cost-sharing design appears to encourage a greater use of more cost-effective services e.g. by encouraging primary care vs. specialist care and vs. emergency care when these are not necessary, and is coupled by a referral system from primary care. Patients visiting a physician without a referral or buying over-the-counter medicines have to pay for the full cost of care out of their pockets. Children below 6, and elderly (65+) individuals with an income below a certain threshold, pregnant women and people with certain medical conditions are exempted from cost-sharing. According to the OECD (2010) 15.6% of the population buys duplicative private insurance (to cover for the same services covered by public provision/ funding). In 2008, private expenditure was 22.8% and about the EU average (22.7%), while out-of-pocket expenditure at 19.5% was above the EU average (14.4%). The share of private and out-of-pocket expenditure was lower in 2008 than in 1998 (respectively 29.6% and 26.7%)[14]

Waiting times and lists for specialist consultation and hospital surgery are considered long by the population and there are important regional variations in the waiting time, which are seen as a problem in Italy. To reduce waiting times, the Conference of State, Regions and Autonomous Provinces agreed on maximum waiting times for specialists' visits and hospital surgery for a number of conditions[15]. In addition, patients are allowed to obtain hospital care in other regions and there is a system of interregional compensation whereby regions paid for the patients they send away and receive the payments of those who come into the region to receive treatment. The interregional mobility is directly related to the right of citizens to choose health care treatments, for example by accessing high specialized health structures located out of their own region. However, it could also reflect inefficiencies for some regional health care systems to deal with "health demand"

[13] Such a committee was first established in 2005, according to article 9 of the Health Pact of 23rd March 2005.

[14] As a result, Italy scores 6 out of 6 on the breadth, about 5.5 in the scope and a bit more than 5 on the depth of basic coverage according to the OECD scoreboard.

[15] For further information, see: Conference of State, Regions and Autonomous Provinces No. 1387 of February 14th 2002 available in the web site: http://www.mattoni.salute.gov.it/mattoni/paginaInternaMenuMattoni.jsp?id=9&menu=mattoni, and Ministry of health (2009), "Rapporto nazionale di monitoraggio dei livelli essenziali di assistenza – 2005-2006", IR_62 available in the web site: http://www.salute.gov.it/imgs/C_17_pubblicazioni_1072_allegato.pdf .

of their own citizens. Some regions publish, on permanent basis, data on waiting times in their own web site, concerning access to both hospital services and specialist' visits[16].

# 4. Collection, pooling and allocation of financial resources

In 2008, 77.2% of total health expenditure funding came from earmarked public sources, including regional tax on production activities (corporation tax on the value added of companies and on the salaries of public sector workers - IRAP), regional surcharge on income tax and a share of VAT revenue. 19.5% came from out-of-pocket payments and the rest mostly from private insurance. The level of resources yearly guaranteed to Regions for financing health care provisions, according to the *LEA*s, which must be equally guaranteed over the national territory, is set on the basis of the following two-step procedure:

1) each year, the Budget Law (*Legge Finanziaria*) determines the level of financial resources (so called *fabbisogno sanitario nazionale*) needed to provide the LEAs, according to an efficient and appropriate production setting;
2) the regional *fabbisogno sanitario* is determined distributing the national *fabbisogno sanitario* among regions on the basis of a series of criteria, mainly the population size and the age structure.

The financial coverage of the regional *fabbisogno sanitario* is guaranteed through a mix of financial resources:

a) the regional tax on production activities (IRAP);
b) the surcharge on personal income tax;
c) revenues of the ASL/AO (Local Health Bodies/Hospital Bodies - *Aziende Sanitarie Locali/Aziende Ospedaliere*) from either sale of services or fees paid by citizens (so-called "*tickets"*);
d) as for Regions with ordinary institutional status (*regioni a statuto ordinario*), a share of VAT revenue is granted to cover the difference between their *fabbisogno sanitario* and the resources obtained through the financial channels under points a)-c);
e) as for Regions with special institutional status (*regioni a statuto speciale*), the quota of their *fabbisogno sanitario* not covered by the financial channels under points a)-c) is to be financed through their own resources (additional contribution)[17].

A Health Pact covering a three-year period (the current one covers the period 2010-2012) is agreed between the Central government and the Regions, which indicates the overall level of funds to be allocated to the health sector. The content of the Health Pact and any changes to the overall resources brought about by fiscal manoeuvres are embodied in the annual budget law which is supposed to be approved by the end of the year.[18]

According to the organisational setting of the Italian Health Care System, the Ministry of Health defines general objectives and national policy priorities, while the regions are responsible for planning, coordinating and providing health services. They have large autonomy in the way they

[16] On this topic, see Ministry of health (2010), "Tempi di attesa nei siti web delle Regioni e P.A. e delle strutture del Servizio Sanitario Nazionale - 3° Rapporto Nazionale"available in the web site: http://www.salute.gov.it/imgs/C_17_pubblicazioni_1240_allegato.pdf. Such report confirms the conclusions of the previous ones (issued in 2005 and 2007) about a scarce utilization of the web site as information tool of times and waiting lists.

[17] For region Sicily only, this additional contribution accounts for at maximum 49.11% of its *fabbisogno sanitario*. The remaining part is financed by the National Health Fund (*Fondo Sanitario Nazionale*).

[18] In particular, the State-Regions agreement of the 3rd December 2009 has been embodied by the law 23rd December no. 191/2009, article 2, paragraph 66-104 and, as such, is a part of the current legislation.

organise care delivery, within a general legal framework, clinical guidelines and a defined list of benefits. The funds to be allocated to each type of care are somewhat determined by both the central government and regions.

This suggests a rather complex system of collection and redistribution of funds and with both central and decentralised decision making processes involved, although within a nationally agreed framework. However, the level of expenditure in administering such a system is not high. Public and total expenditure on health administration and insurance as a percentage of GDP (0.0%) is below the EU average (0.3% and 0.4% respectively in 2008), as is public (0.6%) and total (0.6%) expenditure on health administration and health insurance as a percentage of total current health expenditure vs. EU averages of 3.1% and 4.4% in 2008.[19]

Disparities can be seen in the organization, availability, access and quality of service provision and health outcomes, despite national health care standards which are supposed to be guaranteed across the country.[20] Such disparities are mainly related to regional efficiency differentials. In fact, the *fabbisogno sanitario* is meant to cover the costs needed to provide the LEAs in a context of efficiency and appropriateness. In this regard, the size of regional *fabbisogno sanitario*, which is fully financed, implicitly represents the efficiency threshold for an appropriate provision of health care services at regional level. Therefore any imbalances in the regional health sector budget should be considered as an indicator of a regional expenditure policy not in line with the criteria of efficiency and appropriateness defined at the national level.

There is a strict health budget defined annually for regions and for different health services. Budget deficits in the sector have occurred in the past and have resulted in a number of cost-containment policies (delisting some medical interventions from reimbursement, increasing out-of-pocket payments, increasing waiting times) and stricter budget rules. The central government, through the Ministry of Health and the Ministry of Economy monitors regional financial management and has sanctioning powers with those regions running a deficit (6 regions in 2009). This situation has led to the signing of specific recovery plans with stringent obligations on the part of the failing regions.[21]

# 5. Providers status, referral systems and patient choice

As the responsibility for care delivery has been delegated to the regions there may be differences in the way the various types of care are organised/ delivered. In general, care delivery is in the hands of a number of health management organisations within each region, the Aziende Sanitarie Locali (ASL*s*), public and private accredited hospitals and private ambulatory health centres. Primary care is provided by independent general practitioners (GPs) and paediatricians acting on the basis of a contract with the NHS, and running their activities in single practices or in joint practices (for which

[19] The low level of health administration costs should be taken with caution, given that the incidence in terms of either GDP or total current health expenditure is much below the EU average. Though the accounting methodology is in line with the SHA guidelines, further investigation and comparison with other countries' methodologies are required.

[20] The CENSIS index of health care supply ranges from 67.6 in Emilia Romagna to 9.8 in Calabria. Also, CENSIS survey analysis shows that while residents are in general highly satisfied with services received and consider their quality to be good or sufficient the opinions do vary from region to region with in general those in the southerner regions being less satisfied then those in more Northerner regions. In particular, southern regions are characterized by high levels of pharmaceutical expenditure, inappropriateness in hospital care provisions, high mobility towards more efficient and effective regional health systems. All this has resulted in high costs and budget imbalances. Since 2007, most southern regions have submitted to Deficit Reduction Plan procedures which envisage operative programmes to reorganize regional health care systems in order to improve efficiency and appropriateness in delivering the LEA. See "The healthcare spending-cut plans" published in "Ministry of Economy and Finance, Combined Report on Economy and Public Finance for 2010, p. 41-43, available in the web site: http://www.tesoro.it/en/doc-finanza-pubblica/dfp.ruef.asp

[21] According to the OECD, Italy scores 5 out of 6 in the OECD scoreboard due to the stringent budget controls.

a financial incentive is provided). Outpatient specialist care is provided by specialist doctors in outpatient departments in (mostly public) hospitals as well as in private ambulatories. Day case and inpatient care also take part in hospitals. Hospital personnel are public sector employees. According to the OECD (2010), about 81.5% of all acute hospital beds are public, 16.7% are private not-for-profit and 1.8% is private for profit. Provision has traditionally been public but currently health services are provided also by private providers. Some public hospitals (*Aziende Ospedaliere*) have also been given financial and technical autonomy (contracting with the ASLs), while others remain under the direct management of the ASLs. Public sector physicians are allowed to work privately (dual practice) provided that the latter activity is exerted in public health organizations, according to the National Labour Contract of physicians. The ASL*s* oversee health promotion, disease prevention, and occupational diseases activities.

The number of practising physicians per 100 000 inhabitants (363.5 in 2007) is above the EU average (324.1 in 2007) though showing a consistent decrease since 1998 (411.2). The number of GPs per 100 000 inhabitants (79 in 2008) is slightly below the EU average (92 in 2006), though one of the highest in the EU, having been more or less constant throughout the decade. The number of nurses per 100 000 inhabitants (700 in 2007) is below the EU average (830 in 2007) having consistently increased throughout the decade (531.9 in 1998).

Authorities' efforts to encourage the use of primary care vis-à-vis specialist and hospital care include compulsory registration with a GP and a compulsory referral system from primary to secondary care (i.e. GPs act like gatekeepers to specialist and hospital care), while allowing patient choice of GP, specialist and hospital.[22] The coverage of primary care services in health centres is guaranteed over 24 hours, through the primary care out of hours (so called *guardia medica*). Over time there has been a strong emphasis on primary care as the first point of access to care, emphasis that is to continue to ensure quality and efficiency of care. Patient satisfaction with primary care GPs and paediatricians is high. Moreover, authorities have been introducing a number of ICT and e-health solutions to allow for nationwide electronic exchange of medical data (including patient electronic medical records and patient e-card) to support care coordination, reduce medical errors and increase cost-efficiency as well as monitoring activity and consumption.

The number of acute care beds per 100 000 inhabitants (301 in 2008) is below the EU average of 383.2 in 2008. It has consistently decreased in the last decade (501.7 in 1998), as a result of the policies run over the last years aimed at reducing the rate of acute beds towards the standard levels set in the Health Pacts[23]. In some areas there may be a shortage of follow-up/long-term care beds/ facilities which creates bed-blockages in acute care (unnecessary and long use of acute care beds) and may contribute to longer waiting times for surgery. It is regional government to plan for the number of hospitals, the provision of specific specialised services.

# 6. Purchasing, contracting and remuneration systems

Primary care physicians are paid on a capitation basis, while outpatient and inpatient specialists acting in public structures are paid a salary. The pay scale is determined at national level. Primary care physicians appear to be eligible to receive bonuses regarding preventive care or disease management activities[24]. Private sector doctors are paid a fee-for-service.

[22] Indeed, according to the OECD, the level of choice of provider and gatekeeping in Italy both score of 6 out of 6.

[23] According to latest Health Pact 2010-2012, the standard rate is set at 330 per 100 000 inhabitants.

[24] It is foreseen by article 8 of the National General Agreement (Accordo nazionale collettivo) concerning the discipline of GP.

Hospitals remuneration is on a payment per case basis using DRGs.[25] Hospital remuneration methods are defined at central level with the DRG weights and other service rates negotiated at regional level.

When looking at hospital activity, inpatient discharges are below the EU average (13887.2 vs. 16230.5 in 2007) but this is compensated by a number of day case discharges that is slightly above the EU average (6154.9 vs. 6120.1 in 2007) and indeed a high proportion of surgical procedures conducted as day cases (30.7% vs. EU average of 28.1% in 2007). Overall hospital average length of stay (7.8 days in 2007) is below the EU average (8 days in 2007). These figures suggest that the current strategy is in the direction of increasing outpatient and day case interventions vis-à-vis inpatient hospital care and have resulted in an increase in hospital efficiency. There may be some room to further increase hospital throughput/efficiency by providing alternative care services for long-term care patients which may currently bed-block acute care beds unnecessarily. Such policies could perhaps contribute to reducing waiting times for elective surgery.

**Pharmaceuticals**

The authorities have implemented a number of policies to control expenditure on pharmaceuticals, based on (i) limits to expenditure dynamics and (ii) control of pharmaceuticals prices. Expenditure rules on pharmaceutical products exist since 2001; however, since 2008, a new rule was introduced, foreseeing thresholds for pharmaceutical products supplied by pharmacies or, directly, by the ASLs. The rule establishes two expenditures ceilings for pharmaceutical products (including patient co-payments) expressed as a percentage of the financing level for the National Health Service contributed by the State. For 2010, such percentages are set as follows:

a) 13.3% for pharmaceutical products supplied by pharmacies or, directly, by the ASLs;

b) 2.4% for pharmaceutical products supplied by hospitals

The expenditure ceilings must be respected both at regional and national levels.

Concerning price control policies, the initial price of a new pharmaceutical product is based on clinical performance, economic evaluation, on the cost of existing treatments. There are controlled price updates. Price setting involves important negotiations between the Italian Pharmaceutical Agency (*Agenzia Italiana del Farmaco* – AIFA) and the pharmaceutical companies and negotiations take into consideration the social relevance of the disease, the effect of the medicines, the expected utilisation and financial impact, prices in other countries, prices of similar products in Italy. Discounts, payback and price freezes and cuts are some of the mechanisms used to directly control expenditure. There is a positive list of reimbursed products which is based on health technology assessment information/ economic evaluation. Reference pricing for reimbursement purposes is also applied. For medicines for which generics are available the reimbursement level is set at the lowest price of the drugs in a group (defined as drugs with same active ingredient, bioequivalent form and therapeutic indications), and the cheapest price must be at least 20% lower than the originator product. For those without generics, the reimbursement level of a new drug is based on a sort of average cost of a defined group of medicines that are related but slightly different chemically.

Authorities promote rational prescribing of physicians through treatment and prescription guidelines complemented with education and information campaigns on the prescription and use of medicines and the monitoring of prescribing behaviour (by regions and ASLs). GPs receive some kind of feedback on their prescription patterns. Authorities also pursue information and education campaigns directed at patients and some regions have introduced a small fee for either pack or receipt to make patients more sensitive to the cost of medicines and encourage a rational use of medicines on the patients' side. There is an explicit generics policy. Generic sales' targets are set by

[25] The OECD score for remuneration incentives to raise the volume of care in Italy is a bit more than 3 out of 6 as a result of the use of activity related payment in hospital remuneration though not in other areas.

the Italian Pharmaceutical Agency. Generic substitution takes place i.e. pharmacies are obliged to offer the generic medicine when available. If patients refuse a generic, they will have to pay the difference between the reimbursement price of the branded drug and the pharmacy retail price of the cheapest available generic. Generics are exempted from the mandatory discount of pharmacies to the NHS so as to encourage pharmacies to hold and sell generics.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Following a pilot period, a comprehensive information and monitoring system (National Healthcare Information System) – using 130 indicators and covering population health status, budgetary and economic efficiency, organisation climate and staff satisfaction, patient satisfaction, performance indicators (appropriateness, quality) and effectiveness in reaching regional targets – is now fully operational. A comprehensive set of indicators has been introduced by the latest Health Pact, for evaluating the performance of regional health services. [26]

Several regions have adopted the system which uses standard codes. As a result, Italy will be able to gather extensive information at regional and sub-regional levels, which is publicly available on a website allowing for public comparisons. Such a system, allows regions to identify good practices as well as areas for improvement. Physicians are being monitored in terms of their activity and compliance with guidelines as well as their prescription behaviour. They receive feedback on their prescription patterns.

Health Technology Assessment is undertaken at various levels although there is no national structure responsible for conducting, promoting, coordinating or financing HTA, resulting in a non-systematic evaluation of health technology. There are clinical guidelines for medical interventions and medicines established through the National Programme on Clinical Guidelines.

The central Government through the Ministry of Health sets and monitors public health priorities in terms of process, outcomes and the reduction of health inequalities. As section 1 suggests, there are some risk factors that can translate into an important burden of disease and financial costs. The latest National Health plan lists a number of priority areas for health promotion and disease prevention which is proposed as good practice across the regions. However, health promotion and disease prevention activities have not yet received the same emphasis as in other countries in the EU, as seen by its pattern of expenditure and some indicators. Public and total expenditure on prevention and public health services as a % of GDP were below the EU average (0.1% and 0.1% vs. 0.2% and 0.3% in 2008). Public and total expenditure on prevention and public health services as a % of total current health expenditure were well below the EU average (0.7% vs. 2.2% and 0.7% vs. 2.7% in 2008). Vaccination rates are about the EU average (96.1% vs. 96% in 2006). They are higher than in the 1980s but show a recent decrease over the decade. Screening rates for cervical and breast cancer are not high (39.8% and 61% of the target population in 2007).

# 8. Challenges

The analysis above shows that a range of reforms have been implemented in recent years for example to strengthen primary care provision and its use, to improve hospital efficiency, to improve data collection, information and monitoring systems and the use of ICT solutions, to control overall expenditure and pharmaceutical expenditure in particular. They were to a very large extent

[26] See Health care Pact 2010-2012, article 2.

successful and, therefore, Italy should continue to pursue them. The main challenges for the Italian health care system are as follows:[27]

- To continue to monitor regional expenditure policies making regions showing deficit in the health sector budget restore the balance and ensure efficiency and appropriateness in the provision of LEAs.
- To consider whether to generalise the element of performance related payment primary care physicians' remuneration (e.g. through the use of mixed payment schemes) to encourage health promotion, disease prevention and disease management activities or the treatment of vulnerable populations and further increase outpatient output.
- To continue to increase hospital efficiency by continuing the successful increase in the proportion of day case surgery and by increasing the supply of follow-up care for long-term care patients to reduce the unnecessary use of acute care settings for long-term care patients.
- To implement the National Health Information System across all regions and sub-regional levels which has a strong potential to monitor and relate expenditure with activity and with outcomes and in identifying good practices and areas for improvement. To encourage debate, information exchange, and peer reviews between regions once the system is fully implemented. In this context, the patient e-card (*Tessera Sanitaria*) should be fully exploited
- To ensure a greater and nationally coordinated use of health technology assessment to determine new high-cost equipment capacity, the benefit basket and the cost-sharing design across medical interventions and address regional variations.
- To further enhance health promotion and disease prevention activities i.e. promoting healthy life styles and disease screening given the recent pattern of risk factors (diet, smoking, alcohol, obesity) in various settings (at work, in school).

[27] The OECD overall efficiency score for Italy is slightly higher than its group average (about 1.8 years potential gain to be made through greater efficiency in the sector compared to the group average of 2.6 years) and above the OECD average (2.3 years). There are nevertheless areas for improvement including: continue to improve efficiency in the hospital sector notably through the publication of comparable information on activity and quality and/or through an element of activity related payment of physicians; increasing consistency in the allocation of resources across levels of government.

# Statistical Annex - Italy[28]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 7.7 | 7.8 | 8.1 | 8.2 | 8.3 | 8.3 | 8.7 | 8.9 | 9.0 | 8.7 | 9.1 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1571 | 1630 | 1796 | 1914 | 1910 | 1916 | 1999 | 2108 | 2213 | 2246 | 2348 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 5.4 | 5.5 | 5.8 | 6.1 | 6.2 | 6.2 | 6.6 | 6.8 | 6.9 | 6.6 | 7.0 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 1105 | 1154 | 1302 | 1429 | 1424 | 1427 | 1518 | 1606 | 1695 | 1715 | 1812 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 5.9 | 6.2 | 6.5 | 6.9 | 7.0 | 6.9 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 20300 | 20900 | 22300 | 23300 | 22900 | 22900 | 23100 | 23600 | 24600 | 25800 | 25600 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | 0.6 | 0.7 | 0.8 | 0.9 | 1.1 | 1.2 | 1.4 | 1.5 | 1.9 | 2.0 | : | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | : | 1.0 | 1.1 | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | 1.8 | 1.9 | 2.1 | 2.3 | 2.4 | 2.4 | 2.6 | 2.8 | 3.0 | 3.1 | : | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | 0.2 | 0.2 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 1.7 | 1.7 | 1.8 | 1.8 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 0.7 | 0.7 | 0.8 | 1.0 | 1.0 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | 8.8 | 8.6 | 8.5 | 8.5 | 9.0 | : | 9.9 | 10.2 | 9.9 | 9.9 | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 24.7 | 24.7 | 24.4 | 24.1 | 24.0 | 24.2 | : | 22.3 | 23.0 | 22.4 | 22.4 | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 9.0 | 8.9 | 9.0 | 8.7 | 8.6 | 8.1 | 8.0 | 8.0 | : | : | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 82.1 | 82.6 | 82.8 | 83.1 | 83.2 | 82.8 | 83.8 | 83.6 | 84.2 | 84.2 | : | 82.3 | 82.3 |
| Healthy life years at birth females | 71.3 | 72.1 | 72.9 | 73.0 | 73.9 | 74.4 | 70.7 | 66.5 | 64.1 | 61.9 | : | 62.3 | 61.6 |
| Life expectancy at birth males | 76.0 | 76.5 | 76.9 | 77.1 | 77.4 | 77.1 | 77.9 | 78.0 | 78.5 | 78.7 | : | 76.3 | 75.9 |
| Healthy life years at birth males | 67.9 | 68.7 | 69.7 | 69.8 | 70.4 | 70.9 | 68.4 | 65.7 | 64.7 | 62.8 | : | 61.5 | : |
| Infant mortality | 5.1 | 4.9 | 4.3 | 4.4 | 4.1 | 3.9 | 3.9 | 3.8 | 3.6 | 3.5 | 3.6 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | : | : | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 70.4 | 70.7 | 72.5 | 74.6 | 74.5 | 74.5 | 76.0 | 76.2 | 76.6 | 76.4 | 77.2 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 26.7 | 26.1 | 24.5 | 22.1 | 22.4 | 22.4 | 21.2 | 20.5 | 19.9 | 20.1 | 19.5 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | 0.6 | 0.5 | 0.4 | 0.4 | 0.3 | 0.3 | 0.4 | 0.5 | 0.5 | 0.6 | 0.6 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | 0.6 | 0.5 | 0.4 | 0.4 | 0.3 | 0.3 | 0.4 | 0.5 | 0.5 | 0.6 | 0.6 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 45.7 | 49.6 | 53.1 | 56.4 | 59.5 | 61.8 | 63.8 | 65.4 | 66.7 | 66.3 | 71.2 | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 411.2 | 423.5 | 416.3 | 437.1 | 443.9 | 413.5 | 416.6 | 380.1 | 366.6 | 363.5 | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 531.9 | 524.3 | : | : | : | : | 666.8 | 692.8 | 703.0 | 700.4 | : | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 84.0 | 83.0 | 83.0 | 83.0 | 82.0 | 82.0 | 81.0 | 80.0 | 79.0 | 79.0 | 79.0 | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 501.7 | 458.1 | 407.0 | 396.4 | 377.9 | 352.9 | 334.8 | 331.7 | 324.3 | 314.0 | 301.0 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | : | 6.0 | 6.1 | : | : | : | : | 7.0 | : | : | : | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | : | 15227 | 14926 | 14592 | 14417 | 13887 | : | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | : | 6308 | 6675 | 6796 | 6643 | 6155 | : | 6120 | 5031 |
| Hospital average length of stay | : | : | : | : | : | 7.6 | 7.6 | 7.6 | 7.7 | 7.8 | : | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | : | 29.3 | 30.9 | 31.8 | 31.5 | 30.7 | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | 337.0 | 359.5 | 393.8 | 428.5 | 426.7 | 417.8 | 424.8 | 425.3 | 438.3 | 426.0 | 420.7 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 133.5 | 148.0 | 175.6 | 230.7 | 219.4 | 204.9 | 213.4 | 210.7 | 220.1 | 205.7 | 198.5 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | 22.5 | 23.2 | 23.1 | 23.6 | 23.5 | 22.7 | 22.1 | 21.1 | 20.7 | 20.2 | 19.2 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 8.9 | 9.5 | 10.3 | 12.7 | 12.1 | 11.2 | 11.1 | 10.5 | 10.4 | 9.7 | 9.0 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | : | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 96.0 | 99.0 | 99.0 | 99.0 | 99.0 | 97.0 | 97.0 | 91.8 | 96.1 | : | : | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | 45.1 | : | : | : | 37.7 | 36.7 | 38.5 | 39.8 | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | 29.0 | : | : | : | 59.0 | 60.9 | 59.6 | 61.0 | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[28] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Cyprus

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (24000 PPS in 2008) is only slightly below the EU average of 25075 and has shown an increase since 1998 (14700 PPS). Following a period of good growth, Cyprus registered a recession in 2009 (a mild recession in the EU context): GDP growth was -1.7% in 2009 and forecasted to be -0.4% in 2010; but the economy shows signs of recovery with a forecasted economic growth of 1.3% in 2011.[1] The general government deficit reached 6.1% of GDP in 2009 and is forecasted to be 7.1 in 2010, as a result of a reduction in revenues and some fiscal stimulus measures implemented. Fiscal consolidation measures in the coming years include the freezing of public sector employment. In spite of the adverse effects of the economic crisis on the domestic economy, the Health Ministry budget in 2009 has not been constrained compared to 2008 budget.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (5.8% in 2008) is well below the EU average[3] (9.6% in 2008), having slightly increased from 5.5% in 1998 (the actual peak was reached in 2003 with 6.8%). Public expenditure on health as a percentage of GDP (2.5%) is substantially below the EU average (7.4% in 2008), and indeed the lowest in the EU, though slightly higher than in 1998 (2.3%). Total (1402 PPS in 2008) and public (590 PPS in 2008) per capita expenditure is considerably lower than the EU average (2381 PPS and 1826 PPS respectively). It has slightly increased from 2003 (1245 PPS and 562 PPS). Public per capita expenditure PPS is one of the EU lowest. One reason why all EU countries have higher government health expenditure than Cyprus is the organisation of their health systems on the grounds of state-run systems.

**The role of technology**

Total (1.3%) and public (0.3%) expenditure on pharmaceuticals as a percentage of GDP are below the EU average (1.5% and 1.0% respectively in 2008) and pretty much constant since 2003. Total (21.7%) and public (5.2%) expenditure on pharmaceuticals as a percentage of total current health expenditure are, respectively, above and (much) below the EU average (16.9% and 11.2% in 2008). Total (304 PPS) and public (72 PPS) pharmaceutical expenditure per capita are both below the EU average (419 PPS and 284 PPS in 2008). The difference between public and total expenditure probably reflects the large share of private expenditure for pharmaceuticals. The number of CTS units per 100 000 inhabitants is, however, significantly higher than the EU average (3.5 vs. 1.15 in 2008) having increased from 1.6 units in 2000.[4]

**Health status and healthy behaviour – life-styles – risk factors**

Life expectancy (83.1 years for women and 78.5 years for men in 2008) are above the EU average and indeed one of the EU highest.[5] Healthy life years (65.1 years for women and 64.5 years for men) are also above the EU average. In 2003, 23.9% of the population were regular smokers down from 37.4% in 1997.[6] Alcohol consumption was 9.3 litres per person in 2005, compared to 8.3 litres in 2000. In 2003, 12.3% of the population was obese.

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1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on expenditure for Cyprus is taken from WHO health for all database and Eurostat.

3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 Data on equipment comes from Eurostat database.

5 Data on life expectancy and healthy life years is from the Eurostat database.

6 Data on life-styles comes from EUROSTAT and WHO health data.

## 2. Expenditure prospects: population ageing and future health status

Population is projected to increase by 500 000 people from 2008 to 2060. Life expectancy is projected to increase by 7 years for both men and women, respectively a lower and the same increase as the average projected increases for the EU as a whole. The share of the old (65+) is projected to increase by 13.8 pps (higher than the EU average of 13.0 pps) and the share of the very old (80+) by 5.8 pps (lower than the EU average of 7.8 pps) from 2008 to 2060.

As a result of ageing[7], health care expenditure is projected to increase by 0.9 pps of GDP (much below the average change in the EU of 1.7 pps). Good health (translated by a constant health scenario) reduces the projected expenditure increase by more than half, from 0.9 to 0.1 pps, highlighting the importance of maintaining good health and improving health behaviour in some areas.

## 3. Health care coverage and expenditure

There is no universal health coverage in Cyprus and there are several types of coverage. One is the public provision of health services under the Ministry of Health which provides free or subsidised health care to a share of the population (75%-80% including civil servants, low income households, families with more than four children and people receiving public assistance). Maternal and child health services are free for everyone and public hospitals provide free accident and emergency services free of charge for all, irrespective of residency status. The public health system fails to effectively cover the population leading to inadequate and ineffective coverage. The latter is associated with the fact that despite today around 85% of the population is eligible for free or reduced fees public health care, people opt to visit the private sector and pay out of pocket. This implies that only 40% of the population eligible for free or reduced fees health care select to visit the public sector for their health care needs. A second source of coverage is through funds for medical care by employers and trade unions, through collective or/and single employer sponsored funds. A third is a scheme to sponsor patients abroad covering about 0.2% of the population receiving health services in countries like the UK, Greece and Israel. A fourth is private insurance and a fifth is private sector provision. Those entitled to public services can also seek care in the private sector and pay out of their pockets. Those who are not entitled to public provision go to private services and pay directly out of their pockets. They may hold private insurance which reimburses them for part of those costs. Private provision has been growing without much control or coordination with the public health care provision.

While public provision covers a large proportion of the population, its capacity is limited resulting in waiting times for consultations and care interventions. To reduce delays for surgical care in public hospitals the Ministry increased paid overtime work for hospital doctors and nurses and bought services from private providers.

Government provision is funded through general taxation with some charges on some services, while private provision is financed through a combination of out of pocket spending and private insurance. As a result, the share of private expenditure on health in total health expenditure (57.9% in 2008) is considerably higher than the EU average (22.7% in 2008). It went down from 2000 to 2003 to go up again from 2004 onwards. It is now at about the same level of 2001. Out-of-pocket expenditure (50.2% of total health expenditure in 2008) is also considerably higher than the EU

[7] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).

average (14.4% in 2008). It is however below the 1998 value, suggesting an increase in private insurance rather than in out-of-pocket payments.

This current system of organisation and funding has led to unequal distribution of services and inequities in access to care across population groups. Moreover, capacity and care quality is to a large extent unregulated and not necessarily aligned with public health priorities and the system lacks incentives for cost-control from the part of providers (see further). Provision and funding are fragmented rather than part of a coherent general framework. Urgent /after hours access to primary care services may then be very limited resulting in an unnecessary use of hospital emergency wards.

Legislation was enacted in 2001 to create a National Health Insurance Scheme (NHIS) of universal coverage which would address the current fragmentation of provision and funding and improve system organisation, management and provision. However, its implementation has been continuously postponed and is now foreseen for the second half of 2011. The delay is partly due to a) conflicting vested interests associated with growing numbers of private providers and private insurers that face very limited effective controls, b) reluctance, in part of involved stakeholders to reorganize public hospitals, necessary to ensure equal competition between private and public health providers and c) the fact that a large majority of the population can get the expensive hospital interventions (as well as emergency care) for free in the public sector while, if needed, can get relatively cheap private doctor consultations for example. Note that an amendment to the 2001 Legislation was submitted to parliament in May 2008 and is still under discussion.

## 4. Collection, pooling and allocation of financial resources

In 2008, 42.1% of total health expenditure funding comes from government sources (taxes), 50.2% from out-of-pocket payments and the rest from private insurance.

The financing system is to change with the implementation of the NHIS. A system of mandatory health insurance would be created with funding coming partly from employees and employers contributions and partly from government funds (taxation). Funding would be administered by the Health Insurance Organisation – HIO, created in 2001 through the NHIS legislation – which would act as a purchaser of care, buying services for all residents through contractual arrangements with public and private providers and reimbursing medicines. The Ministry of Health would be in charge of defining overall national health strategy.

Currently, total and public (equal to total) expenditure in administration and insurance as a % of GDP (0.2% in 2008) is below the EU average (respectively 0.4% and 0.3 in 2008). Total and public expenditure on administration and insurance as a % of total current expenditure on health at 4.2% and 4.1% are respectively about and above the EU average (4.4% and 3.1% respectively). With the introduction of NHIS is expected administrative cost to be lower than the existing.

There is an overall budget for the Ministry for health defined annually for public spending on health, with the Ministry of Health defining the resources allocated to each of the subsectors of care. This may leads to some overshooting, given the fact that resources appear to be limited for the share of the population covered by public provision and the range of services provided.

## 5. Providers status, referral systems and patient choice

As stated, public and private provision coexist. Public primary care is provided in hospital outpatient departments, urban and rural health centres and sub-centres. Public dental care is provided in public dental clinics. Public general hospitals offer specialist outpatient care and district hospitals and specialist centres offer outpatient and inpatient hospital care. Private health services

include a variety of specialists and dentists who provide their services in their own facilities, typically in the largest urban areas.

The total number of practising physicians per 100 000 inhabitants (271.5 in 2007) is below the EU average (324.1 in 2007) and has varied between 249.6 and 271.5 through the decade.[8] About 53.8% of all physicians had more than 45 years of age and more in 2000 which indicates that ageing can also affect the provision of health. Data on the physician skill/mix and nurses is limited, while there is available data on nursing skill/mix in both public and private sectors. In 2000, the number of general practitioners (GPs) per 100 000 inhabitants, 37.4 was much below the then EU average of 85.4 but it is not possible to know if it has increased. This would be important information to hold as the unified provision of primary care will be the first step of the reform plan prepared by the NHIO for the implementation of the NHIS. While at the moment there is no referral system from primary to specialist and hospital care, even in the case of public provision, with the NHIS national authorities want to establish a system of family doctors (local GPs) and strengthen the referral system from primary care to specialist doctors. In other words, all inhabitants would register with a GP, who would act like a family doctor and a gatekeeper referring patients to specialist and hospital care. Patients would be able to choose their GP and then the specialist or hospital. A precondition for the successful introduction of a primary care led system is, however, sufficient numbers of trained GPs. In the long-run, from a human resources point of view, authorities need to implement a comprehensive human resources strategy to ensure the right skill mix in accordance with new NHIS. The referral and coordination role of GPs is planned to be supported through the use of ICT systems.

Cyprus has seen a reduction in the number of acute care beds per 100 000 inhabitants in the last decade (351.1 in 2008 vs. 400.2 in 1998) and its number is now lower than the EU average (383.2 in 2008). About half of the beds are publicly owned. The future number of acute care beds will depend on the combination of the possible reorganisation of hospitals as a result of the NHIS implementation with changes in surgical practices, the availability of follow-up care and the availability of long-term care services. With the new NHIS hospitals will be turned into independently managed units that can put private and public providers on an equal basis to establish contracts with the purchasing authority (HIO).

Public (0.9%) and total (2.7%) capital expenditure as percentage of total health expenditure in 2007 was below the EU average (2.6% and 4.1%). It has fluctuated throughout the decade but shows a strong decline in recent years.

# 6. Purchasing, contracting and remuneration systems

Currently, doctors in the public sector are paid a salary while in the private sector they are paid on a fee-for-service basis with unregulated fees. Public sector remuneration is determined by the central government. The private sector fees are basically determined by the free market and depend on reputation of each specific doctor, although an indicator of private sector fees is set by the Medical Council. At the moment there is no activity or performance related payment in the public sector, while there may be an incentive to conduct more activity under private practice than in the public sector. With the implementation of the NHIS, FDs reimbursement will entail a 3-tier payment. A risk-adjusted capitation (per number of patients), an activity based reimbursement, depending on doctor activities regarding preventive medicine practices, chronic disease management, and a performance related reimbursement that will be tied to, among others, the use of the electronic HIO IT system, referral and prescribing behaviour. The details of how this will be implemented have not yet been finalised. A uniform price policy is to be applied to both public and private sector

[8] Data on health care staff comes from EUROSTAT database.

providers i.e. fee for service (per activity). As regards specialists' inpatient services in hospitals, these will be incorporated into the DRG to which each case will be assigned. Therefore, there will be no separate payment of specialists' fees for inpatient services.

Currently the annual Ministry of Health budget includes a specific hospital budget allocated to each hospital according to need, primarily on a historical basis adjusted to inflation. As a result, there are no incentives for cost-awareness and control from the part of providers. In addition, when looking at hospital activity, inpatient and day case discharges are much lower than the EU average (respectively 7500 vs. 16231 in 2007 and 701 vs. 5828 in 2006 respectively), although hospital average length of stay (6.2 days in 2007) is below the EU average (8 days). This suggests that there could perhaps be room to increase hospital activity. It also suggests that as a result of hospital inefficiency patients may, in fact, be waiting too long for elective surgery. In addition, there is perhaps room to improve the way surgical treatments are conducted. For example, the proportion of surgical procedures conducted as day cases (9.7%) is considerably lower than the EU average of 26.7% in 2006. Further increasing bed occupancy rates and bed turnover rates, increasing discharges and increasing the number and share of day case surgery and outpatient cases, and concentrating high-tech complex care in a few facilities (centres of excellence) are perhaps areas where further improvements can be made and indeed priorities the authorities may wish to pursue under the new NHIS and which could lead to better value for money in the sector.

With the introduction of the NHIS, inpatient services will be reimbursed through a Prospective Payment System and more specifically, through a DRG (Diagnosis Related Groups) system. The DRG system provides for the categorisation of hospital cases into a specific number of groups (DRGs), each of which has a predetermined relative cost weight tied to it, which constitutes the basis for the reimbursement of the specific case.

It is expected that with its introduction, the DRG system will help towards the containment of inpatient expenditure through the transparency it provides both as regards clinical data and costs. In addition, as the HIO will treat the public and private sectors exactly the same, it is expected that, through the competitive environment which will be created, an improvement in hospital efficiency and quality of service provided will occur.

The HIO has adopted the German DRG system and with the cooperation of InEK (the developer and owner of the German DRG catalogue) is now in the process of its implementation in Cyprus, including its adaptation, where required, to better reflect Cyprus' reality.

**Pharmaceuticals**

In Cyprus the provision of pharmaceutical care is divided into public and private sectors. To control overall expenditure Cyprus's authorities implemented a range of policies as explained below:

Private Sector

In the private sector pharmaceutical care is provided through registered private pharmacies and it is financed with out-of-pocket payments by the patients. As of 2005, the prices of imported pharmaceuticals are set through external price referencing. The price set is the wholesale price and on top of that the pharmacist's margin is added. This price does not include a specific profit margin for the wholesalers. The external price referencing is also applied for setting the prices of imported generics, but the set price cannot exceed 80% of the price of the original branded product marketed in Cyprus. For locally manufactured generics the ex – factory price is set on the basis of the production cost plus a markup of 20%, which should not exceed 80% of the original product. To avoid limitations on the market availability of cheap pharmaceutical products, the external price referencing is not applied on products with price < €6 and market share less than €25.000. A price list including the pharmacy retail prices (PRPs) of all the products available in the market is

published once a year. Currently, value-added tax (VAT) is not applied for pharmaceuticals, except in the case of diagnostic agents which bear a 15% value-added tax (VAT) level. There are no lists of medicines (white or black) in the private sector as pharmaceutical care is not reimbursed. Prescribing habits of private doctors are not monitored, although the authorities often issue guidelines and recommendations for the correct use of medicines to the prescribing physicians.

Public Sector

In the public sector pharmaceutical care is provided through public pharmacies and it falls under the Pharmaceutical Services of the Ministry of Health. It is block-funded by the Ministry of Finance.
For the supply of medicines a public procurement method is used. According to the existing laws and regulations, the Government can purchase pharmaceuticals through the European tendering process, by which lower prices are usually achieved (or at least when there is competition).
Pharmaceutical care is provided to eligible patients, according to the Medical Institutions and Services General Regulations. Categories of patient eligibility are based on income criteria and / or of specific disease or treatment categories.

Pharmaceuticals provided to the eligible patients are included in the List of Approved Pharmaceuticals. During the last years a co-payment scheme has been implemented which enables doctors to prescribe a limited number of drugs not included in the approved list, but available in the private sector. The medicines in the co-payment scheme are partly reimbursed by the Government. The amount reimbursed is based on the price difference between the price of the co-payment drug and the price of the corresponding available drug on the list of approved drugs.

In order for a new product to be added to the List of Approved Pharmaceuticals, a formal pharmaceutical request form has to be submitted by a specialist physician practicing in a public hospital. The criteria for inclusion of a pharmaceutical in the List of Approved Pharmaceuticals include: product-specific criteria (e.g. medical and therapeutic value, safety, lack of alternative therapies); economic criteria (e.g. cost effectiveness, budget impact); patient-specific criteria (e.g. age, sex, chronically or terminally ill patients); and disease-specific criteria (e.g. severity of illness, special medical needs). The Drugs Committee assesses all of the above criteria. Upon entry to the List of Approved Pharmaceuticals, the pharmaceutical's reimbursement level is based on the eligibility criteria of the patient. Generics and generic substitution are used widely in the public sector. The use of generics provides a lot of cost savings in the public sector. The use of generics in the private sector is limited as there are no incentives either for doctors or for pharmacists.

Pharmaceutical services in co-operation with Medical and Public Health Services issue guidelines and restrictions in the use of specific medicines. Doctors practicing in the public sector are closely monitored by the relevant authorities as of their prescribing habits, of the correct use of medicines and of their compliance with above mentioned guidelines and restrictions. In cases where a specific protocol has been set, the pharmaceutical is also not dispensed unless the protocol is followed.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Data has much improved in recent years but there is still some fragmentation in data collection systems and information is lacking in a number of areas. Information and monitoring of physician and hospital activity, particularly in the private sector, is not common but will be useful / necessary under the new NHIS, which separates the purchasing from the provision functions, to establish contracts and define prospective budgets.

Currently there is no structure to conduct health technology assessment, although this requires additionally administrative capacity and scientific know-how. Therefore, cost-effectiveness knowledge is not yet used to determine the benefit package or the extent of cost-sharing for different types of care or develop treatment guidelines to harmonise and rationalise medical practices across the country although proposed reforms assume this possibility in the future.

As section 1 suggests, while health status scores high by EU standards and there appears to be good and free maternal and child health care (e.g. vaccination rates are high – 97% for polio), there is some concern over smoking, drinking and obesity trends which may negatively impact on that situation. Total and public expenditure on prevention and public health as a proportion of total current health expenditure (0.7% and 0.6% in 2008) is far below the EU average (2.7% and 2.1%).

# 8. Challenges

The analysis above shows that, contrary to most EU countries, very few reforms have been implemented in Cyprus over the years, and, indeed, the enacted legislation to create a universal coverage NHIS has not yet been implemented but rather consistently postponed. The analysis shows that there is room for improvement in a number of areas. The main challenges for the Cypriot health care system are as follows:

- To improve the basis for more sustainable and larger financing of health care in the future, to improve access and quality of care and its distribution between population groups.
- Implement a universal NHIS in a way to ensure equal access, financial sustainability and quality health care, through which a number of other challenges can be tackled as follows:
    - To ensure universal coverage and the pooling of financing to the sector, currently non-existent.
    - Address the current fragmentation of care provision characterised by separate public and private provision that do not make part of a whole coherent framework. While a large proportion of the population is eligible to public provision for free or at reduced prices, public capacity is limited (and simultaneously presents some inefficiencies) resulting in long-waiting times and unsatisfied users. Private provision is largely unregulated in terms of capacity, fees or quality. This leads to inequalities in access to care, possible reduction in quality as well as over or under capacity depending on the area.
    - Define a comprehensive human resources strategy to ensure a balanced skill-mix that allows a strong primary care sector to develop.
    - Increase hospital output while reducing the use of unnecessary hospital care, by increasing the share of day case surgery, by improving the provision of after-hours primary care services, by strengthening the referral system and the provision long-term care services.
    - To continue to improve data collection and monitoring of inputs, processes, outputs and outcomes so that regular performance assessment can be conducted and used to continuously improve access, quality and sustainability of care.
    - To make more use of cost-effectiveness information, as planned, in determining the basket of goods and the extent of cost-sharing. Define the latter to induce cost-effective behaviour.
    - While health status is high by EU standards, a number of risk factors have emerged (smoking, alcohol, obesity) that may require attention. Under the new NHIS public health priorities would need to be defined and channelled across the system.
- Focus on enhancing primary health care services and care coordination between types of care. Encourage patients to first make use of primary care vs. specialist care vs. hospital care and improving care coordination between types of care. Consider establishing a referral system or using cost-sharing to that end.

- Reorganize public hospitals so as to ensure equal competition between private and public health providers and ease failure of coordination between the public and the private sector leading to duplication and wastage of resources. This procedure maintains significant economic inefficiencies in the health sector.
- Health spending will be increasing on average at higher level than GDP growth in the years to come, trading off other public expenditures. This increase is possible to get triggered by specialists' remuneration, prices of imported drugs and by population ageing, which increases the needs of local population in health care.

# Statistical Annex - Cyprus[9]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 5.5 | 5.6 | 5.7 | 5.7 | 6.1 | 6.8 | 6.4 | 6.3 | 6.3 | 6.0 | 5.8 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 810 | 871 | 964 | 1025 | 1115 | 1245 | 1242 | 1296 | 1339 | 1406 | 1402 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 2.3 | 2.4 | 2.4 | 2.4 | 2.7 | 3.1 | 2.8 | 2.7 | 2.7 | 2.6 | 2.5 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 339 | 373 | 406 | 431 | 493 | 562 | 545 | 542 | 568 | 599 | 590 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 2.8 | 2.9 | 3.0 | 3.1 | 3.2 | 3.3 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 14700 | 15600 | 16900 | 18000 | 18300 | 18400 | 19600 | 20400 | 21400 | 23300 | 24000 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.7 | 0.6 | 0.9 | 1.6 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | 1.6 | 1.6 | 1.5 | 1.5 | 1.7 | 2.0 | 1.9 | 3.5 | 3.5 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | : | : | : | : | : | 1.4 | 1.3 | 1.3 | 1.3 | 1.2 | 1.3 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | : | : | : | : | : | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | : | : | : | 12.3 | : | : | : | : | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | : | : | : | : | : | 23.9 | : | : | : | : | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 9.0 | 9.3 | 8.3 | 8.8 | 9.0 | 10.0 | 9.9 | 9.3 | : | : | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 79.8 | 79.9 | 80.1 | 81.4 | 81.0 | 81.3 | 81.9 | 80.9 | 82.2 | 82.2 | 83.1 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | : | : | : | 69.6 | : | 57.9 | 63.2 | 62.7 | 65.1 | 62.3 | 61.6 |
| Life expectancy at birth males | 74.7 | 76.0 | 75.4 | 76.6 | 76.4 | 76.9 | 76.6 | 76.8 | 78.4 | 77.8 | 78.5 | 76.3 | 75.9 |
| Healthy life years at birth males | : | : | : | : | : | 68.4 | : | 59.5 | 64.3 | 63.0 | 64.5 | 61.5 | : |
| Infant mortality | 7.0 | : | 5.6 | 4.9 | 4.7 | 4.1 | 3.5 | 4.6 | 3.1 | 3.7 | 5.3 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | : | : | : | : | : | : | : | : | : | : | : | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 41.9 | 42.7 | 41.7 | 42.4 | 45.0 | 45.1 | 43.8 | 41.8 | 42.4 | 42.6 | 42.1 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 57.1 | 54.6 | 55.9 | 55.2 | 52.8 | 43.4 | 46.5 | 47.0 | 46.6 | 47.8 | 50.2 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | : | : | : | : | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | 3.8 | 3.7 | 3.5 | 3.5 | 3.7 | 4.2 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | : | : | : | : | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | 3.7 | 3.6 | 3.4 | 3.4 | 3.6 | 4.1 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | : | : | 53.8 | : | : | : | : | : | : | : | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 252.0 | 255.2 | 258.0 | 260.7 | 260.6 | 257.3 | 262.3 | 257.8 | 250.4 | 271.5 | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | : | : | 37.4 | : | : | : | : | : | : | : | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 400.2 | 394.8 | 404.9 | 401.7 | 400.5 | 398.7 | 389.7 | 349.1 | 346.8 | 348.0 | 351.1 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 2.0 | 1.9 | 2.0 | 1.8 | 1.8 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | : | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | 6795 | 7031 | 6856 | 6821 | 6776 | 6617 | 6536 | 7500 | : | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | 504 | 507 | 548 | 562 | 571 | 632 | 701 | : | : | 6120 | 5031 |
| Hospital average length of stay | : | : | 6.4 | 6.5 | 6.4 | 6.0 | 6.3 | 6.0 | 5.9 | 6.2 | : | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | 6.9 | 6.8 | 7.4 | 7.7 | 7.8 | 8.7 | 9.7 | : | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | : | : | : | : | 253.4 | 256.3 | 267.3 | 273.6 | 288.1 | 303.9 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | : | : | : | : | : | 62.2 | 51.6 | 60.3 | 60.0 | 66.0 | 72.2 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | : | 22.4 | 22.2 | 22.0 | 21.2 | 21.1 | 21.7 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | : | 5.5 | 4.5 | 5.0 | 4.6 | 4.8 | 5.2 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | : | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | : | : | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | : | : | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | : | : | : | 0.5 | 0.4 | 0.5 | 0.5 | 0.5 | 0.6 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 98.0 | 97.0 | 97.0 | 97.0 | 98.0 | 97.5 | 97.5 | 97.5 | 96.5 | 96.5 | 97.0 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | : | : | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[9] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Latvia

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (14400 PPS) is much below the EU average of 25075 PPS[1], although it has more than doubled from 6000 PPS in 1998. Latvia was severely hit by the economic and financial crisis. Following a period of very strong growth (10% on average between 2004 and 2007), GDP growth was -4.2% in 2008, -18.0% in 2009 and forecasted to be -3.5% in 2010, coupled with a massive increase in unemployment rates, a reduction in government revenues and in the flow of remittances from abroad. Slow recovery would only start in 2011 with +3.3%.[2] While other EU countries have followed expansionary recovery policies, Latvia found itself financially constrained and had to revise downwards its government budget. The provision of international financial assistance (up to €7.5bn) – conditional on the implementation of fiscal consolidation and financial system and structural reforms – helped to stabilise confidence, and provided the needed liquidity to the Latvian economy.

But fiscal consolidation has and can have consequences for the health sector. The initial budget for 2009 remained about the same as that of 2008, and was reduced in the second half of 2009, instead of the expansion that was planned prior to the crisis. The reduction of the budget led to a real decrease of 75.0 million LVL in 2009 – compared to the initial budget of 578.7 million LVL – taking into account some spending slippages which had to convert into additional appropriations. Compared with the 2009 outturn, the 2010 budget sees a further reduction of 70.9 million LVL.

Other consequences of the economic crisis in 2009 were: a reduction in public sector staff numbers (between 35% and 40% for the central Ministry of Health and its subordinated institutions[3], and more than 10% for hospitals) and their wages (around -20% for the Ministry of Health and its subordinated institutions, and -10%/-15% in hospitals); the postponement of various health policies (especially regarding health promotion programmes); and an increase in cost-sharing. Recovery is forecasted for 2011 with a GDP growth of 3.3%.[4]

**Recent trends of expenditure**

Total expenditure[5] on health as a percentage of GDP is well below the EU average[6] (6.5% vs. 9.6% in 2008) having slightly increased from 6.3% of GDP in 1998. Public expenditure on health as a percentage of GDP is also much below the EU average (3.6% compared to the EU average of 7.4% in 2008), i.e. about the same percentage (3.7%) as in 1998, after having decreased around 3.2% between 2000 and 2004. The relatively low ratios may be partly explained by the very high GDP growth: prior to the recent crisis Latvia registered one of the highest GDP growth rates in the EU and a double-digit output growth. Indeed, total and public (929 PPS and 557 PPS in 2008) per capita health expenditure has increased (respectively 684 PPS and 395 PPS in 2005), although it is

1 2009 figures are respectively 11400 PPS and 23600 PPS.

2 European Commission (2010), European Economic Forecast – Spring 2010.

3 Subordinated institutions include notably: the Health Inspectorate, the State medicines pricing and reimbursement agency, the State agency "Latvian Infectology Centre ", the State blood donor centre, the State forensic medicine expertise centre, the Sports medicine expertise centre; they do not include hospitals, which are not budgetary institutions.

4 European Commission (2010), European Economic Forecast – Spring 2010.

5 Data on expenditure for Latvia is taken from WHO health for all database and Eurostat.

6 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

still considerably lower than the EU average (respectively 2381 PPS and 1826 PPS in 2008) and remains one of the lowest in the EU.

**The role of technology**

Total (1.4%) and public (0.5%) expenditure on pharmaceuticals[7] as a percentage of GDP were below the EU average in 2006 (1.6% and 1.0% respectively). Total (175 PPS) and public (57 PPS) pharmaceutical expenditure per capita were indeed some of the lowest in the EU in 2006. Public expenditure on pharmaceuticals as a percentage of total current health expenditure is also below the EU average (7.6% compared to 11.5%), while total expenditure on pharmaceuticals as a percentage of total current health expenditure is above the EU average (23.2% vs. 17.2%), reflecting a large share of private payments for pharmaceuticals. The data suggests some slight increase in public expenditure in this area.

Regarding equipment, an increase in CTS and MRI units per 100 000 inhabitants can be observed: from 0.9 CTS units in 2000 to 2.3 in 2008 and from 0.1 MRI units in 2003 to 0.7 in 2008 which relates to a national effort to replace outdated equipment and improve the quality of care provided.[8] Given the current size of the health budget, the government policy to concentrate high tech (expensive) equipment in a few facilities, to explore economies of scale while easing its access, may be a step in the right direction.

**Health status and healthy behaviour – life-styles – risk factors**

Life expectancy at birth (77.8 years for women and 67 years for men in 2008) and healthy life years (54.1 years for women and 51.5 years for men in 2008) are currently some of the lowest in the EU.[9] Gender differences in health are very high. Life expectancy for men has only recently caught up with the life expectancy values of the late 1980s prior to the decline observed in the early 1990s, a period of substantial economic and political transition. Latvia has the highest premature mortality in 2007 (defined as standardised mortality rates all causes, for those aged 0-64) in the EU, and is especially high in the case of men: 270.9 deaths for females (0-64) and 784.8 deaths for males (0-64) per 100 000 inhabitants, numbers that are considerably higher than the respective EU averages (139.2 and 293.2).

Mortality rates associated with ischaemic heart disease and more generally, diseases of the circulatory systems are some of the EU highest, as are the death rates due to suicide, injuries and road traffic accidents. The incidence rate of tuberculosis is high as is the incidence rate of lung cancer for men. Latvia also registers one of the highest proportions of people who smoke regularly[10]: 30.4% of adults in 2006, having seen a slight decrease from 33.0% in 2000 and 35.7% in 1998.[11] Although below average, alcohol consumption has increased in recent years (10.8 litres in 2008[12], 11.2 litres in 2005, compared to 9.1 litres in 2000 and 7.0 litres in 1990). In 2008, 18.5%[13] of the population was obese, a share that is above the EU average (15.1% in 2008). These values on the health status of the population deserve attention and action to protect population health outcomes and reduce the burden of disease.

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7 Data on health expenditure is taken from WHO health data and Eurostat database. From 2003, the variables total and public expenditure used here follow the OECD definition under the System of Health Accounts and include HC.1-HC.9 + HC.R.1.

8 Data on equipment comes from Eurostat database.

9 Data on life expectancy and healthy life years is from the Eurostat database.

10 45% of men and 15.6% women in 2008, having decreased from 55.3% of men and 19.6% of women in 1998 (FINBALT, 2008).

11 Data on life-styles comes from EUROSTAT and WHO health data, except when mentioned otherwise.

12 Source: Prevalence and consequences of addictive substance use in Latvia. The Centre of Health Economics, 2009.

13 Source: Health Behaviour among Latvian Adult Population. The Centre of Health Economics, 2008.

## 2. Expenditure prospects: population ageing and future health status

The total population is projected to decrease by 600 000 people from 2008 to 2060. Starting from a lower position than the EU average, life expectancy is projected to increase by 14.5 years for men and 10.1 years for women, both larger increases than the average projected increases for the EU as a whole. The share of the old (65+) is projected to increase by 17.1 pps (greater than the EU average of 13 pps) and the share of the very old (80+) by 8.3 pps (slightly more than the EU average of 7.8 pps) from 2008 to 2060.

As a result of ageing[14], health care expenditure is projected to increase by 0.7 pps of GDP (much below the average change in the EU of 1.7 pps). Good health (translated by a constant health scenario) reduces the projected expenditure increase from 0.7 to 0.1 pps, highlighting the importance of improving health behaviour in a country with both a low health status and low expenditure levels and fiscally constrained.

## 3. Health care coverage and expenditure

The Health Payment Centre[15] (HPC) established under the 2009 administrative reform administers the tax-based health care budget and provides universal coverage through its 5 regional divisions which purchase care for their respective populations. In fact, the central agency contracts directly with hospital for inpatient services, while regional funds contract outpatient services (primary, secondary outpatient services) and pay pharmacies for patient prescriptions.[16] It is a tax-funded social insurance system. The services included in the statutory provision are determined annually in the Basic Care Programme.

Despite full population coverage, the services available 100% free of charge are limited and some, like dental care for adults, are not statutorily financed or provided. As a consequence, the share of private expenditure on health in total health expenditure (40.4% in 2008) is one of the highest in the EU and considerably higher than the EU average (22.7% in 2008), although it registered a reduction since 1998 (40.8%) and 2000 (45.6%). Out-of-pocket expenditure constitutes about 30.0% of total health expenditure in 2008 (39.2% in 1998, 44.1% in 2000). Despite a dramatic decrease from 40.9% in 2007, it still stands much above the EU average (14.4% in 2008). Cost-sharing applies to all types of care (patients pay a fee to receive health care and pay a part of the price of the reimbursed pharmaceuticals). The share of out-of-pocket expenditure has been a cause for concern from the access to care point of view and the authorities have therefore defined several exemption groups (e.g. children, low–income recipients, the physically and mentally disabled) and an annual ceiling for patient contributions. In addition, the current cost-sharing design does appear to encourage greater use of cost-effective services or, say, primary care services vis-à-vis specialist vis-à-vis inpatient care. Note that the authorities have increased cost-sharing in 2009 and 2010 to increase revenue to the sector in the context of the economic crisis but kept a small tariff for primary care vis-à-vis other types of care and the amount of cost-sharing increases from primary to specialist to day case to inpatient care, which should ensure cost-effectiveness of services and reduce unnecessary use of hospital care. In October 2009, the authorities implemented an emergency social safety net strategy which supplemented financial protection for the needy and the low-income households. It exempts them from copayments and encourages providers to deliver traditional inpatient services on a day or outpatient basis. On top of formal cost-sharing, informal

[14] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf).

[15] Former "State Compulsory Health Insurance Agency".

[16] The HPC central office organizes centralized payments for reimbursable medicines, but HPC regional divisions conclude contracts with pharmacies (so as to reduce administrative expenses).

(non-official) payments are still frequent, although they remain a sensitive issue which is not formally assessed.[17] They seem common for specialised elective surgery such as neurosurgery and orthopaedics. Such unofficial payments do not encourage a more effective use of services and constitute an additional barrier to access as there are no exemptions for low income or high risk groups.

In addition, waiting times for appointments and several kinds of surgery (e.g. microsurgery, orthopaedic surgery) remain long, although in the context of primary care GPs have now to provide an extra hour a day for urgent and unpredicted cases. The Ministry of Health wanted to further increase the opening hours in the primary care context (some hours on weekends). Recently, the authorities have introduced a system that adds an extra nurse to each primary health care team to reduce waiting times for primary care. The extra nurse is in charge of health promotion, disease prevention and health education, as well as s(he) coordinates the health care of patients with chronic diseases and in addition s(he) has 10 permanent consultation hours per week. Starting from January, 2011 there will be an available family doctor telephone consultation line, instead of an increase in opening in the evenings and weekends hours.

Given the already high share of private (out-of-pocket expenditure), the severe economic crisis and the low health status of the population, further increasing out-of-pocket expenditure may be detrimental to care access and health status.

# 4. Collection, pooling and allocation of financial resources

In 2008, 59.6% of total health expenditure funding comes from public sources (taxes earmarked annually for the sector at the central level), 30.0% from out-of-pocket, and around 10% from other private sources (private insurance and financial contributions from the rest of the world).

The HPC allocates the budget to the five regional HPC offices. It allocates half of health care expenditures to HPC regional divisions for reimbursement of outpatient services; HPC central office pays the other half for hospital and emergency care. Note that with the aim to develop the outpatient care orientation, the respective percentages may change. In 2010, the minimum amount of the state budget recourses to be allocated for payment for outpatient services has been increased to 38% (from 32% in 2009), while the maximum amount to be allocated to inpatient health care services has been reduced from 60.6% in 2009 to 52% in 2010. The HPC allocates resources to the various types of care in each region on the basis of contractual arrangements with providers. This new system has been introduced in order to contain the administrative costs.[18]

Total expenditure on administration and insurance as a percentage of GDP (0.4%) was at the EU average in 2006 while public expenditure was slightly above (0.4% vs. 0.3%). As a percentage of total current expenditure on health, total and public expenditure on administration and insurance at 4.0% in 2007 were about the EU average (respective EU averages of 4.5% and 3.2%).[19] For a country spending overall much less than the EU average such percentages for administration may still deserve attention. From 1997 to 2004 there has been a reduction in the number of funds, agencies and health boards dealing with health policy and funding to reduce costs. The Ministry of Health and some agencies/ institutions involved in health policy have been criticised for their overlapping functions. As a result of the current fiscal consolidation process, there has been further administrative reform in the sector resulting in the reduction of the number of health related

[17] Moreover, the few existing studies until 2008 delivered very different – thus inconclusive – results.

[18] Previously all resources were distributed to the HPC regional divisions and provided inter-regional payments. The new HPC resources allocation mechanism should not limit health care accessibility since it insures that patients can receive health care services in other territories.

[19] Data on expenditure on health administration and insurance is from the Eurostat database.

organisations and their staff, and the concentration of health funding in the HPC and its five regional offices.[20]

There is an overall budget constraint defined annually for public spending. In the past, the sickness funds have run into a deficit due to a demand for services which is greater than the financial resources available.

# 5. Providers status, referral systems and patient choice

Primary care is provided by general practitioners (GPs) and nurses in primary care centres or private offices. They establish contracts with the HPC – through the five regional offices. Dental practices and pharmacies are also private practices. Specialist and hospital care are mostly conducted in municipal facilities (state- or municipally-owned hospitals).

The total number of practising physicians per 100 000 inhabitants (306.7 in 2008 vs. 275.2 in 1998) is slightly below the EU average (around 322 in 2008). Data on the physician skill-mix indicates that the number of GPs per 100 000 inhabitants (58 in 2008) is below the EU average although it registered a massive increase throughout the last two decades due to authorities' effort to improve primary care provision. The number of nurses (553.2 in 2007) per 100 000 inhabitants is also below the average of 830, although higher than in 1998 (482.2).[21] This skill mix (coupled with unequal physician location), although much improved in the recent decade, is still posing some difficulties to a well-functioning primary health care sector, fact that the authorities acknowledged. Note that Latvia has also suffered some staff shortages – which created further dissatisfaction given the accrued overtime work – due to staff migration to other EU countries where qualified health staff was needed and wage levels were higher.[22] In order to retain staff, the authorities increased wages in the sector but this trend has been reversed with the economic crisis to improve fiscal balances. While this may be manageable in the short run and in the context of a global economic downturn, it may not be sustainable from a human resources point of view when recovery starts in other EU countries. In addition, about 70.2% of all physicians had more than 45 years of age in 2008 which indicates that ageing can also affect the provision of health.[23] Hence, to continue to adjust medical training to a more primary care oriented practice – including to channel enough students to health higher education in Latvia – and adjusting staff planning to a more balanced skill mix – also ensuring that a sufficient part of them are practicing at least some time in rural areas/smaller cities – are important policy steps but the authorities may also need to reinforce their current efforts to implement a comprehensive human resources strategy to motivate and retain staff to the sector.

Since the early 1990s, the authorities have made a significant and to a large extent successful effort to enhance primary care provision and strengthen the referral system from primary care to specialist doctors and the gatekeeping role of GPs (to reduce the unnecessary use of specialist and hospital care). All inhabitants have to register with a GP, who acts like a family doctor and refers patients to other types of care, while being able to choose their GP and then change up to twice a year and choose a hospital after referral if this has a contract with the HCP. To implement a well-functioning referral system while allowing for choice requires continuing the current efforts to improve the skill mix and the distribution of primary care across the country and perhaps increasing the possibility to access primary care / GPs after normal office hours.[24] Shortages of GPs can lead to high waiting

[20] The number of staff units in the Ministry of Health and its subordinated institutions was reduced by more than 50% from 2009 to 2010.

[21] Data on health care staff comes from EUROSTAT database and OECD health data.

[22] Though there is no available data on the actual number of doctors who leave the Latvian health care system.

[23] Today 49% of medical practitioners are in the age group of 50 years and over (national source).

[24] The access to GP is currently provided for over a 5-day period, and GPs have 1 hour per day for acute patients / emergency cases. According to the Cabinet of Ministers regulation No. 1046, a family doctor must provide reception in

times to visit GPs and therefore individuals skipping the referral system and going straight to hospital, making unnecessary use of emergency care. The recently introduced system that adds an extra nurse to each primary health care team aims at reducing waiting times for primary care. Indeed, this nurse will be in charge of health promotion, disease prevention and health education, and of care coordination of patients with chronic diseases.

In 2008, Latvia had one of the largest numbers of acute care hospital beds per 100 000 inhabitants (516.1) in the EU (EU average 383.2), although it has seen a large reduction in the last two decades (from 1208.6 in 1988 to 660.1 in 1998) as a result of national efforts to reduce hospital capacity and create a primary care led health system. These efforts have now been reinforced under the current fiscal consolidation process, resulting in the merging of some municipal hospitals, the reduction of the total number of inpatient hospitals and beds and the concentration of inpatient and emergency services in a number of hospitals. Some small hospitals are now limited to outpatient visits. Some acute care beds and hospital facilities have been turned into long-term care beds / facilities (which can reduce bed blocking in acute care settings and improve bed occupancy rates). Further reducing hospital capacity, increasing bed occupancy rates and bed turnover rates, increasing the number of day case surgery and outpatient cases, and concentrating high-tech complex care in a few facilities (centres of excellence) are areas where the authorities see that further improvements can be made (see also further).

Public (3.4%) and total (4.4%) capital expenditure as a percentage of total health expenditure was above the EU average in 2006 (2.5% and 4.1% respectively)[25] perhaps as a result of the efforts to modernise care facilities and improve quality of care. However, given the current budget consolidation conditions, it is important to enquire about the current changes in these proportions, and to ensure an efficient spending on technology improvements.

# 6. Purchasing, contracting and remuneration systems

Most primary care services are provided by independent GPs in individual or joint primary care practices while specialist services and hospital care are conducted in public facilities (mostly state or municipal hospitals). Payments systems have evolved much over the years and are a mix of retrospective and prospective payments, fix and activity-based payments. GPs receive a mix of capitation, fees for defined activities, bonus payments and fixed allowances (e.g. practice allowances). This mixed payment system intends to render primary care more attractive and provide incentives for primary care provision including some health promotion, disease prevention activities and disease management. Specialists are remunerated on a salary basis if employees of ambulatory health centres or hospital outpatient departments and receive a fee for episodes of illness when self-employed and under a contract with the HPC. Remuneration is determined by the central government.

Hospitalisation was high although progress towards primary care and reducing hospital capacity has been very significant and successful. Hospital average length of stay (8.8 days in 2009 and 9.0 days in 2008[26]) is slightly above the EU average (7.9 in 2008) but it has been decreasing (9.6 in 2005). Both the proportion of hospital surgery done as day cases and the number of hospital day case discharges are below the EU respective average.[27] Reducing the emphasis on hospital inpatient care, increasing the share of day case surgical interventions and reducing average length of stay has been a policy recently pursued by the authorities in the context of fiscal consolidation notably through

5 days. During inspections of family doctors practices the Health Inspectorate has not observed any violation of this regulation (data collection on this issue is not performed).

[25] Data on capital expenditure as a percentage of total health expenditure comes from the Eurostat database.

[26] Yearbook of Health Care Statistics in Latvia, 2009. The Centre of Health Economics.

[27] Although precise data are not available at the moment.

large cuts in hospital budgets to inpatient care and the definition of a list of interventions that are only to be made as day case interventions. This is a policy priority that the authorities want to pursue. Until recently, hospitals were paid on per diem fee (although payment by HPC reduces beyond a certain length of stay) coupled with activity-based payments (93 defined diagnosis – DRGs - are paid a fixed amount per case). Further reliance on prospective payment on the basis of DRGs was planned. Since 2010, the HPC pays a fixed monthly payment for hospitals, divided according to the 12 month schedule for every hospital. Essential health care services include emergency health care, care for children and pregnant women. Although significantly improved and based on complex criteria, the basis for establishing contracts between the HPC and the various providers could perhaps be further improved in the long-run to favour cost-effective interventions, when health technology assessment is used more regularly. Note though that the authorities under the current fiscal consolidation process are introducing quantitative and qualitative requirements when establishing contracts with hospitals (such as the fixed monthly payment). Since the contract between HPC and the hospital providers defines an annual budget, towards the end of the year (starting in October) hospitals are often seen to reduce their activity as funding is limited by then. Patients can either pay or wait till the next budget year. This situation partly denotes large use of inpatient care levels but may also denote an overall health budget that may be too low to cover existing and growing health needs and expectations, as illustrated by the need to adopt additional budgetary appropriations in late 2009.

With the aim to improve transparency and public awareness of the health care real costs, the patient who is discharged from the hospital is now entitled to receive a certificate of treatment costs, which are covered by the public health care budget.

**Pharmaceuticals**

Latvian pharmaceutical production covers 6.5% of total consumption. Imported medicines now come from Western Europe rather than the former Soviet Union, which resulted in a large increase in prices. To control overall expenditure the authorities have implemented a variety of policies. The initial price decision is based on a) all EU countries manufacturer's price but with a final price that should not exceed the price in countries with similar socio-economic characteristics, as well as b) on clinical performance, c) economic evaluation and d) the cost of existing treatments. In addition, the authorities implement 1) volume/block tendering and thus price-volume agreements, together with 2) reference pricing, whereby the maximum reimbursement level of a new drug is based on the lowest price of existing drugs that have the same active ingredient and form or are clinically related, and 3) positive lists (as much as possible based on economic evaluation). Authorities also implement prescriptions guidelines and quotas/budgets and monitor prescription patterns of physicians. Perhaps the authorities could explore if these policies, which currently apply only to reimbursable pharmaceuticals, could be extended to non-reimbursable medicines especially in the context of high out-of-pocket payments. Note that while there is no explicit policy on generics, there are special administrative procedures that ensure their faster inclusion in the reimbursement list and the system of budgets encourages the prescription of the cheapest medicine available. These policies have probably been helpful in controlling pharmaceutical expenditure growth.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Data has much improved in recent years although it is still lacking in a number of areas. Since 2004, with a World Bank loan, there is a centralised information management system for all state-financed institutions and services. Information and monitoring of physician and hospital activity can be used for example for establishing contracts and prospective budgets.

Currently there is no structure to conduct health technology assessment in great part due to the fact that it requires additional administrative capacity and scientific know-how, currently not available. Therefore, cost-effectiveness knowledge is used in a limited way to determine the benefit package, the extent of cost-sharing for different types of care (though used for pharmaceuticals) or develop treatment guidelines (though used for pharmaceuticals) to harmonise and rationalise medical practices.[28]

The central government set a number of public health objectives in 2000 which remain valid. As section 1 highlights, there are a number of risk factors to health which deserve attention. In addition, while vaccination rates have increased (97% for polio but lower for other diseases), screening rates for example for breast cancer have been relatively low (in 2005, 2.6% of the target population underwent mammography screening), though a centralised cancer screening programme has started in 2009. The centralised cancer screening programme includes screening for breast cancer, cervical cancer and colorectal cancer. Although the coverage after the first year of centralised screening programme is not yet sufficient, there are positive dynamics. Screening rates at the end of 2009 are: 11.55% for cervical cancer, 13.27% for breast cancer, 6.95% for colorectal cancer – from invited persons.

Total (0.2%) and public (0.2%) expenditure on prevention and public health as a % of GDP is slightly below and about the EU average (respectively 0.3% and 0.2% in 2006) while total (3.1%) and public (2.7%) expenditure on prevention and public health as a percentage of total current health expenditure are actually above the EU average (respectively 2.6% and 2.1% in 2006), having considerably increased from 2005, as a result of a recent and greater emphasis on improving life-styles. The proposed introduction of a smoking ban (spring 2010), which has been postponed in the past, is a policy step in that direction. It can be accompanied by strategies to increase the price of tobacco and alcohol, stricter regulation of tobacco advertisement and introduction labelling that may discourage smoking, other policy steps that can contribute to improving life-styles in the long-run, while increasing government revenues in the short run.

# 8. Challenges

The analysis above shows that a wide range of reforms have been implemented over the years, to a large extent successfully (e.g. the development of a strong primary care system), and which Latvia should continue to pursue. However, some policies have met with a number of obstacles and there may be room for improvements in a number of areas. The main challenges for the Latvian health care system are as follows:

- To explore if there are further possible cost-savings in the health care sector administration and insurance while keeping a system that ensures that resource allocation between regions is not detrimental to poorer regions.
- To improve, as acknowledged by the authorities, the basis for more sustainable and larger financing of health care in the future (e.g. considering additional sources of general budget funds), with a better balance between resources and demand, between the number of contributors and the number of beneficiaries and which can improve access and quality of care and its distribution between population groups and regional areas. If more resources are brought into the sector it is important that they do not remain fragmented but are pooled together maintaining the strong pooling mechanisms in place today.
- To define a comprehensive human resources strategy – including higher education prospects – to ensure a balanced skill-mix, avoid staff shortages and motivate and retain staff to the sector.

[28] There also exists an evaluation system of quality indicators for GPs.

- To continue to enhance and better distribute primary health care services and basic specialist services to improve equity of access and the effectiveness and efficiency of health care delivery as well as ensuring effective referral systems from primary to specialist care and improving care coordination between types of care. This can be helped through developing electronic patient records in the future.
- To continue the efforts to decrease hospital beds (and average length of stay) while increasing day case surgery and concentrating hospital services. Continue the efforts to make hospital budgets more prospective and costs more transparent.
- To continue to improve data collection and monitoring of inputs, processes, outputs and outcomes so that regular performance assessment can be conducted and used to improve access, quality and sustainability of care.
- To gradually increase the use of cost-effectiveness information in determining the basket of goods and the extent of cost-sharing.
- To enhance health promotion and disease prevention activities i.e. promoting healthy life styles and disease screening given the recent pattern of risk factors (diet, smoking, alcohol, lack of exercise, obesity). The introduction of a smoking ban accompanied by taxes on tobacco, alcohol and soft drinks, stricter regulation of tobacco advertisement and labelling as well as stricter road safety measures can contribute to improving population health status in the long run. Health education and healthy environments in various settings (school and workplaces) can also be a cheap complementary policy.

# Statistical Annex - Latvia[29]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 6.3 | 6.4 | 6.0 | 6.1 | 6.2 | 6.1 | 6.1 | 6.4 | 6.8 | 6.2 | 6.5 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 381 | 411 | 420 | 467 | 523 | 548 | 603 | 684 | 840 | 902 | 929 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 3.7 | 3.8 | 3.2 | 3.1 | 3.2 | 3.2 | 3.3 | 3.6 | 4.3 | 3.6 | 3.6 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 223 | 244 | 224 | 237 | 270 | 287 | 326 | 395 | 538 | 499 | 557 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 3.5 | 3.7 | 3.8 | 3.9 | 4.0 | 4.1 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 6000 | 6400 | 7000 | 7700 | 8400 | 9000 | 9900 | 10900 | 12200 | 13900 | 14400 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | : | 0.1 | 0.1 | 0.3 | 0.3 | 0.5 | 0.7 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | 0.3 | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.3 | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | 0.9 | 0.9 | 0.9 | 1.3 | 1.5 | 1.8 | 1.8 | 2.1 | 2.3 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | : | : | : | : | : | : | : | 1.4 | 1.4 | : | : | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | : | : | : | : | : | : | : | 0.4 | 0.5 | : | : | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | : | : | : | 15.5 | : | : | : | : | 18.5 | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 35.7 | 29.2 | 33.0 | : | 33.2 | : | 30.1 | : | 30.4 | : | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 9.5 | 9.4 | 9.1 | 8.4 | 9.4 | 8.9 | 10.2 | 11.2 | : | : | 10.8 | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | : | : | : | : | 76.0 | 75.9 | 76.2 | 76.5 | 76.3 | 76.5 | 77.8 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | : | : | : | : | : | 53.1 | 52.2 | 53.7 | 54.1 | 62.3 | 61.6 |
| Life expectancy at birth males | : | : | : | : | 64.7 | 65.6 | 65.9 | 65.4 | 65.4 | 65.8 | 67.0 | 76.3 | 75.9 |
| Healthy life years at birth males | : | : | : | : | : | : | : | 50.6 | 50.5 | 50.9 | 51.5 | 61.5 | : |
| Infant mortality | 15.0 | 11.3 | 10.4 | 11.0 | 9.8 | 9.4 | 9.4 | 7.8 | 7.6 | 8.7 | 6.7 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | : | : | : | : | : | : | : | : | : | : | : | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 59.2 | 58.4 | 54.4 | 51.2 | 52.1 | 52.8 | 54.2 | 56.9 | 64.1 | 57.9 | 59.6 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 39.2 | 40.5 | 44.1 | 46.5 | 45.2 | 45.7 | 44.9 | 40.6 | 33.3 | 40.9 | 30.0 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | : | : | : | : | : | : | 0.4 | 0.4 | : | : | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | : | : | 6.0 | 6.1 | 4.0 | : | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | : | : | : | : | : | : | 0.4 | 0.4 | : | : | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | : | : | 6.0 | 6.0 | 4.0 | : | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 49.9 | 51.4 | 53.6 | 56.8 | 57.9 | 61.0 | 60.2 | 65.5 | 68.2 | 68.8 | 70.2 | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 275.2 | 272.7 | 288.4 | 267.8 | 276.3 | 279.3 | 286.3 | 293.4 | 293.2 | 287.4 | 306.7 | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 482.2 | 493.6 | 479.0 | 469.9 | 472.4 | 485.2 | 498.9 | 508.0 | 567.2 | 557.2 | 553.2 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 20.2 | 33.4 | 40.6 | 41.0 | 43.8 | 45.0 | 52.9 | 54.7 | 55.7 | 54.7 | 58.0 | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 660.1 | 643.3 | 608.6 | 573.8 | 558.9 | 555.7 | 548.7 | 531.8 | 527.4 | 524.1 | 516.1 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 4.6 | 4.9 | 4.8 | 4.8 | 4.6 | 4.8 | 5.0 | 5.2 | 5.5 | 5.8 | 6.0 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | : | : | : | 19970 | : | : | 20290 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | : | : | : | 2376 | : | : | 528 | 6120 | 5031 |
| Hospital average length of stay | : | : | : | : | : | : | : | 9.6 | : | : | 9.0 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | : | : | : | 10.6 | : | : | 2.5 | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | : | : | : | : | : | : | 152.3 | 174.7 | : | : | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | : | : | : | : | : | : | : | 47.7 | 57.3 | : | : | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | : | : | : | 22.6 | 23.2 | : | : | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | : | : | : | 7.1 | 7.6 | : | : | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | : | : | : | 0.0 | 0.2 | : | : | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | : | : | : | : | 0.0 | 0.2 | : | : | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | : | : | : | : | 0.3 | 3.1 | : | : | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | : | : | : | : | : | 0.2 | 2.7 | : | : | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 93.6 | 95.2 | 95.8 | 97.3 | 97.5 | 97.8 | 97.2 | 98.5 | 97.8 | 98.0 | 97.3 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | : | : | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[29] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Lithuania

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (15500 PPS) is much below the EU average of 25075, although it has more than doubled since 1998. Lithuania was severely hit by the crisis. Following a period of very strong growth (7% and above since 2002), GDP growth was -15% in 2009 (forecasted to be from -0.6% to +1.5 % in 2010 according to different sources, +3.2% in 2011[1]) and was accompanied by a massive increase in unemployment rates, a reduction in government revenues and in the flow of remittances from abroad. While other EU countries have followed expansionary recovery policies, Lithuania found itself financially constrained and fiscal consolidation measures were adopted starting in December 2008. A reduction in public sector staff and wages, and a freezing of the health budget to the levels of 2008 (instead of the proposed 7% increase for 2009) are some of the impacts on the health sector.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (6.6% in 2008) is well below the EU average[3] (9.6% in 2008) but the highest in a decade. Public expenditure on health as a percentage of GDP is also below the EU average (4.8% vs. the EU average of 7.4% in 2008) and about the 2002 value. The low and constant ratios are partly explained by the very high GDP growth: prior to the crisis Lithuania registered one of the highest GDP growth rates in the EU. In fact, total and public per capita expenditure (1026 PPS and 745 PPS in 2008) have consistently increased since 1998 (419 PPS and 316 PPS). However, it is still considerably lower than the EU average (respectively 2381 PPS and 1826 PPS in 2008) and remains one of the lowest in the EU.

**The role of technology**

Total (1.7%) and public (0.6%) expenditure on pharmaceuticals as a percentage of GDP are respectively just above and below the EU average (respectively 1.5% and 1% in 2008) and have decreased since 2004. Public expenditure on pharmaceuticals as a percentage of total current health expenditure is below the EU average (9.8% vs. 11.2% in 2008), while total expenditure is significantly higher (26.4% vs. 16.9% in 2008). These values probably reflect a large share of private expenditure on pharmaceuticals. Regarding equipment, an increase in CTS and MRI units per 100 000 inhabitants can be observed: from 0.7 CTS units in 2000 to 1.7 in 2008 and from 0.1 MRI units in 2001 to 0.4 in 2008. This increase probably relates to a national effort to replace outdated equipment and improve the quality of care provided.[4] However, given the current size of the health budget, it may be useful to carefully consider if further increases in hospital infrastructure and high-cost equipment are necessary (cost-effective) and whether it is possible to concentrate care involving high technology in a few facilities exploring economies of scale, while facilitating its access.

**Health status and healthy behaviour – life-styles – risk factors**

Life expectancy (77.6 years for women and 66.3 for men in 2008) and healthy life years (59.3 years for women and 54.6 for men) are currently some of the lowest in the EU (Lithuanian men have the lowest life expectancy in the EU).[5] Gender differences in health are very high. Life expectancy for

1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on expenditure for Lithuania is taken from WHO health for all database and Eurostat.

3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 Data on equipment comes from Eurostat database.

5 Data on life expectancy and healthy life years is from the Eurostat database.

men in 2008 was lower than that in 2000 (66.8 years) but it started to increase since 2008. Lithuania has one of highest premature mortality rates[6] in the EU, and is especially high in the case of men: 256.1 deaths for females (0-64 years) and 766 deaths for males (0-64 years) per 100 000 inhabitants in 2008, vs. the respective EU averages of 139.2 and 293.2, especially in the case of men. Mortality rates associated with ischaemic heart disease and more generally, diseases of the circulatory systems are some of the EU highest, as are the death rates due to suicide (1/4 of external causes of death, though the trend is going down), injuries and road traffic accidents. The incidence rate of tuberculosis is high as is the incidence rate of lung cancer for men.

Lithuania also registers one of the highest proportions of people that smoke regularly: tobacco smoking among women has increased till 2000 and has stabilized with the tendency of decrease: the share of women that are daily-smokers was 13% in 1998 and from 2000 decreased from 16% to 14% in 2008. At the same time, the share of men that are daily-smokers increased till 2000, and then decreased from 52% in 2000 to 39% in 2008.[7] Alcohol consumption is below the EU average but increased in the last decade. It may have seen a stabilisation in 2008 and reduction in 2009 (11,4 litres in 2008, compared to 9,5 litres in 1999 and 10,9 litres in 2009). In 2006, every 3-rd man and every 10-th woman drank once a week. Consumption of beer has increased. The share of men drinking a beer at least once a week increased from 44% in 1994 to 56% in 2006, the share of women from 7% to 18%. Overweight and obesity levels are also different between women and men. The share of obese men (BMI>30 kg/m2) increased from 11% in 1994 to 21% in 2006. The share of overweight (BMI>25 kg/m2) men increased from 47% to 56% accordingly. Women overweight and obesity rates remain almost the same as in 1994 at19% of obese and 49% overweight women in 2006. These values deserve attention and action to protect population health outcomes and reduce the burden of disease.

## 2. Expenditure prospects: population ageing and future health status

Population is projected to decrease by 800 000 people from 2008 to 2060. Life expectancy is projected to increase by 14.6 years for men and 9.4 years for women, both larger increases than the average projected increases for the EU as a whole. The share of the old (65+) is projected to increase by 18.9 pps (greater than the EU average of 13 pps) and the share of the very old (80+) by 8.7 pps (slightly more than the EU average of 7.8 pps) from 2008 to 2060.

As a result of ageing[8], health care expenditure is projected to increase by 1.2 pps of GDP (below the average change in the EU of 1.7 pps). Good health (translated by a constant health scenario) reduces the projected expenditure increase from 1.2 to 0.3 pps, highlighting the importance of improving health behaviour in a country with both a low health status and low expenditure levels and fiscally constrained.

## 3. Health care coverage and expenditure

Compulsory statutory health insurance, based on compulsory insurance contributions, plus transfers from the State budget provide health care coverage to approximately 98-99% of the residing population. National Health Insurance Fund (NHIF) and its regional branches, the Territorial Health Insurance Funds (THIFs), contract with care providers for the provision of services and reimburse the insured for medicines. The set of (mostly public) services organised at municipal, county and

[6] Defined as standardised mortality rates all causes, for those aged 0-64.

[7] According to national sources, the percentage of smoking cessation raised up from 12% among men and 3% among women in 1994 to 19% and 8% in 2008 respectively.

[8] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf).

national level constitute the Lithuanian National Health Systems (LNHS). The services included in the statutory provision are defined by law. This is broad definition which is further detailed by decrees of the Minister of Health and by contracts among THIFs and providers. The definition of benefit package is not revised annually.

Free emergency care is provided to the all permanent residents. Most of the other services are also free for insured people, but if patients want to have higher service standard or additional services not covered by compulsory health insurance they have to pay to different extents. Cost-sharing applies to some services: for instance, the majority of pharmaceuticals and dental services. The share of private expenditure on health in total health expenditure (27.4% in 2008) is higher than the EU average (22.7% in 2008), and higher than in 1998 (24%), but have registered a decrease since 2004 (32.4%). Out-of-pocket expenditure constitutes about 26.8% of total health expenditure, much above the EU average (14.4% in 2008), and a cause for concern from the access to care point of view. The authorities' effort to improve access to care is reflected in the observed reduction from 2004 (31.9%) and may be associated with several cost-sharing exemptions: 19 categories of population are exempted from payment of Compulsory health insurance contributions as they are insured by Government. In 2010, the number of such persons was 2.1 million (almost 63% of total population). There are also two groups of people to whom a ceiling is applied:

A. Various groups of self-employed people on the income calculated on the sum which does not exceed the sum of 48 amounts of the taxable income approved by the Government of the Republic of Lithuania for the current year;
B. People on the income from individual agricultural activities of the natural persons, who engage in that type of individual activities, are being calculated on the sum which does not exceed the sum of 12 amounts of the taxable income.

In addition to formal payments, informal (non-official) payments are still frequent although they have diminished in recent years. These do not encourage a more effective use of services and constitute an additional barrier to access as there are no exemptions for low income or high risk groups. There is some evidence of an increase in OOP due to the economic crisis. The income of health care institutions in 2009 was 6.6 % higher comparing with 2008. However, the increase in income from NHIF was only 6.05%, which means that cost-sharing has increased. There is no survey analysing trends in informal payments, however, there is some empirical evidence that this kind of payments had increased, as well.

Waiting times for some kinds of surgery (hip and knee joint replacement operations) remain long, although they have been reduced considerably following the 2007 public monitoring of waiting lists. Waiting times can differ from 0 to 7 days depending on primary health care institution and patient’s health problem, but a general rule applies: the GP (general practitioner) provides health care services in the same day if the case is urgent. According to the contract with the THIFs, GPs have to ensure or organize health care services 24 hours a day and 7 days a week, but opening hours are determined by the legislation. Opening hours in majority of primary health care clinics are from 7a.m. till 8p.m. They can be prolonged only in particular situations (epidemics, etc.).

Given the high share of private (out-of-pocket) expenditure, the severe economic crisis and the low health status of the population, further increasing out-of-pocket expenditure may be detrimental to care access and health status. It could however be worth investigating if current cost-sharing could be adjusted to encourage greater use of more effective and cost-effective services: e.g. more use of primary care than specialist care, more health promotion and disease prevention activities (e.g. vaccination).

# 4. Collection, pooling and allocation of financial resources

Contributions to the compulsory health insurance fund plus transfers from general taxes (state or municipal budgets), together constitute 72.6% of total health expenditure funding. Out-of-pocket payments make up 26.8% of total expenditure and 0.6% comes from private insurance. The NHIF allocates the budget to the THIFs according to resource allocation formula based on the number of residents in each county, their age and gender. It may be worth exploring if there are still gains to be made in terms of how resources are allocated and distributed across the country so that it improves the geographic distribution of care (there appears to be an overconcentration of services in richer and urban areas and underfunding in other parts of the country). The THIFs then establish contractual arrangements with service providers.

In 2008, the Compulsory Health Insurance Fund (CHIF) amounts to 87.2% of the public expenditure on health. Public expenditure on health amounted to 4.4% of GDP, and CHIF amounted to 4.1% of GDP in 2008, and 4.9 % of GDP in 2009. GDP declined by 17.2 % in year 2009.

Expenditure under the Compulsory health insurance fund is constrained by the sums approved by the Law on the Approval of Financial Indicators of the budget of CHIF. The budget of the CHIF is balanced out within a year. Once a month, the accounts for the provided health care services and dispensed medicines and minor medical aid equipment subject to compensation are being submitted by the health care institutions and pharmacies to the THIF wherewith it has concluded a contract. Under the conditions of the contracts, without exceeding the approved appropriations of the budget of the NHIF and not later than within 30 days from the receipt of a bill, the THIFs must settle the accounts submitted by the individual health care institutions and pharmacies wherewith the said funds have concluded contracts.

# 5. Providers status, referral systems and patient choice

Primary care is provided by general practitioners (GPs) or GP teams, consisting of district internist or district paediatrician together with surgeon and obstetrician-gynaecologist, nurses and other staff. Services are provided in primary care health centres or GPs private offices, community posts, ambulatories and polyclinics around the country. Specialist ambulatory care is provided in polyclinics and hospital outpatient departments, mostly state or municipally-owned facilities, although private provision of specialist outpatient care is growing. Inpatient care is provided in general and specialised hospitals. Providers establish contracts with the THIFs. Virtually all pharmacies (except for a few) and the majority of dental practices are private. Pharmacies establish contracts with THIFs and receive reimbursement for the pharmaceuticals (included into positive list) delivered to the patients. Dental practices operate on totally private basis. Exception is those dental practices which are within the structure of Primary health care centres. The payment for primary dental services is included into Primary Health Care capitation rate.

The total number of practising physicians per 100 000 inhabitants (371.1 in 2007) is above the EU average (324.1 in 2007) and has been more or less constant since 1998. Data on the physician skill-mix indicates that the number of GPs per 100 000 inhabitants (52.6 in 2006) is below the EU average (92.2) although it registered a massive increase throughout the last two decades as part of the authorities' effort to improve primary care provision (8.3 in 1998). The number of nurses (735.2 in 2007) per 100 000 inhabitants is below the EU average (830 in 2007) having registered an important reduction since 2000 (805.3).[9] This may be associated with staff migrating to other EU countries that need to provide nursing care and offer better wages. This skill mix, coupled with

[9] Data on health care staff comes from EUROSTAT database.

unequal physician location, is still posing some difficulties to a well-functioning primary health care sector, fact that authorities acknowledge. The authorities increased wages in the sector to improve working conditions and fight staff migration, but this trend has been reversed with the economic crisis to improve fiscal balances. While this may be manageable in the short run and in the context of a global economic downturn, it may not be sustainable from a human resources point of view when recovery starts in other EU countries. In addition, 66.2% of all physicians had more than 45 years of age in 2007 (higher than the EU average of 60.8%). While the number of practising physicians and licensed physicians is currently high it will be important to see if ageing may affect the provision of health in the years to come. Hence, to continue to adjust medical training to a more primary care oriented practice and adjust staff planning to a more balanced skill mix are important policy steps, as part of broader efforts to implement a comprehensive human resources strategy to motivate and retain staff to the sector, fact that the authorities have acknowledged.

Since the early 1990s, national authorities have made a significant and to a large extent successful effort to enhance primary care provision, to strengthen the referral system from primary care to specialist doctors and strengthen the gate-keeping role of GPs (to which is associated a financial incentive to visit, first, one's own GP i.e. an extra cost for non-referred consultations) in order to reduce the unnecessary use of specialist and hospital care. All inhabitants have to register with a GP who acts like a family doctor and refers patients to other types of care. Patients are able to choose their health centre and their GP and choose a hospital after referral. To implement a well-functioning referral system and choice requires continuing the efforts so far to change the skill mix and improve the distribution of primary care across the country and perhaps increasing the possibility to access primary care / GPs after normal office hours (although office hours are already long compared to other countries). Shortages of GPs can lead to high waiting times to visit GPs and therefore individuals skipping the referral system and going straight to hospital, making unnecessary use of (free) emergency care.

Lithuania has one of the largest numbers of acute care hospital beds per 100 000 inhabitants (505.9) in the EU (EU average of 383.2 in 2008), although it has seen a large reduction in the last two decades (700 in 1998). Further reducing hospital capacity, increasing bed occupancy rates and bed turnover rates, increasing the number of day case surgery and outpatient cases, and concentrating high-tech complex care in a few facilities (centres of excellence) are perhaps areas where further improvements can be made (see further).

Public (equal to total) capital expenditure at 4.3% of total health expenditure in 2008 is about the EU average (2.4% and 4.1% in 2008), though it shows a reduction from 2006 and 2007 when it was about 6% of total health expenditure. These values were perhaps a result of the efforts to modernise care facilities and improve quality of care. However, for a country spending a relative small percentage of their GDP overall on health, it may be to high a value to allocate to infrastructure. It may be worth to investigate if investment in infrastructure is still necessary and to carefully consider what type of infrastructure can be cost-effective given the size of the country, the budget for health and the economic situation.

# 6. Purchasing, contracting and remuneration systems

Payments systems have evolved over the years. GPs (or GP teams) receive a mix of capitation: (appr. 83 % of total payment in 2009 according to the number of and age of their listed patients; age-adjusted capitation), fees for defined activities (health promotion and disease prevention) as well as bonuses for some performance indicators (the rest 17 %). This mixed system intends to render primary care more attractive and provide incentives for primary care provision including some health promotion and disease prevention activities. Authorities are considering a further enlargement of the non-capitation share of GPs' payment, and there is a set of additional

performance indicators related to reduction of avoidable hospitalisations elaborated for that. Specialists are paid per consultation consisting of up to three visits for the same reason; if patient needs to see specialist further on – the new episode of consultation is reimbursed to the provider. Remuneration is determined by the central government (MoH).

Hospitalisation is still high although progress towards primary care and reducing hospital capacity has been significant. The proportion of hospital surgery done as day cases was 6.9% in 2008, which is much below the EU average of 20.8% (1603 day cases per 100 000 inhabitants in 2008 vs. the EU average of 6120 in 2007). On the contrary, the number of inpatient cases was 21686.1 in 2008, above the EU average of 16230.5 in 2007. Hospital average length of stay (8.5 days in 2008) is slightly above the EU average (8 days in 2007). The number of inpatient cases per 100 000 inhabitants and the average length of stay have been decreasing (respectively 22784 and 10.6 in 2001) but further reducing the emphasis on hospital care, increasing the share of day case surgical interventions and reducing average length of stay remain important policy priorities which authorities want to pursue.

Hospitals are paid mostly on the basis of cost per case (450 groups of diagnosis – nationally elaborated DRGs) according to annual contracts. The decision was made to switch to Australian Refined DRG system from 2012. This decision is in implementation stage now. The hospital budgets are very stringent in terms of budget caps. However, there is flexibility to provide more short-term, day and outpatient services (so-called priority services) instead of ordinary hospitalisations.

**Pharmaceuticals**

Imported medicines now come mainly from Western Europe but not from the former Soviet Union, which resulted in a large increase in prices. The price is set on the basis of international prices which may make pharmaceuticals rather expensive depending on the countries used. As a result, to control overall expenditure the authorities have implemented some policies: a) price is determined on the basis of 95% of average of manufacturer's price in CZ, EE, HU, LV, PL,SK, RO, BG and b) there is a reference price mechanism, whereby the maximum reimbursement price of a new drug is based on other drugs that have the same active ingredient and form and according to the disease, and there are the positive lists (the list of pharmaceuticals that can be reimbursed) as much as possible based on economic evaluation information. Compared to the range of policies used by neighbouring countries, there is perhaps room to explore other additional measures regarding product price regulation and direct expenditure control. On 1st of April 2010 new provisions of the Amendment of Law on Pharmacy concerning the regulation of prices of non-reimbursed pharmaceuticals get into force. The Government sets up the maximum wholesaler and pharmacy mark-ups for prescriptions and OTC. The representatives of manufacturers shall provide manufacturer’s prices for Lithuanian market as well as the prices at which the pharmaceuticals are distributed in reference countries in order to compare them. Since 2010 there are some novelties in the reimbursement system in Lithuania. The new rule about the price of generic is set by the Governmental Decree. The first generic in the group shall be 30 % cheaper than original, the second 10 % cheaper than the first and the third 10 % cheaper than the second generic. According to the new provisions, every year the price list is renewed in the case when the group of reimbursed medicinal products consists of more than 3 medicinal products of different manufacturers. In this case, the most expensive medicinal product can be only 30% more expensive than the cheapest in that group (in 2010 - 60%). Therapeutically interchangeable pharmaceuticals with different INN are going to be put in one cluster. The pharmaceuticals will be clustered regarding the therapeutic effect, indication of reimbursement, presentation form and age groups of patients. Since 1st of May 2010 pharmacies are obliged to show prices of pharmaceuticals to patients in a special computer monitor. Since 1st of June, 2010 prescribing medicinal product by INN is obligatory with some exceptions set by the Minister of Health.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Data has much improved in recent years although it is still lacking in a number of areas. Information and monitoring of physician and hospital activity can be used for example for establishing contracts and prospective budgets.

Currently there is no structure to conduct health technology assessment in great part due to the fact that it requires additional administrative capacity and scientific know-how, currently not available. Therefore, cost-effectiveness knowledge is used in a limited way to determine the benefit package, the extent of cost-sharing or develop treatment guidelines to harmonise and rationalise medical practices.

As section 1 highlights, there are indeed a number of risk factors to health that deserve attention and action. Consequently, the central government has set a number of public health objectives, some of which very detailed and with the help of the WHO. Vaccination rates have increased (96% for polio) and screening rates for preventive cancer programs funded by the NHIF were 54.7% of the target population for cervical cancer screening, 87.7% for breast cancer screening and 69 % for prostate cancer screening in 2009.

Total (0.1%) and public (0.1%) expenditure on prevention and public health as a % of GDP is lower than the EU average (respectively 0.3% and 0.2% in 2008). Total (1.4%) and public (1.4%) expenditure on prevention and public health as a percentage of total current health expenditure is also lower than the EU average (respectively 2.7% and 2.1% in 2008). The smoking ban (2007), accompanied by strategies to increase the price of tobacco, alcohol and soft drinks, stricter regulation of tobacco advertisement and introduction labelling that may discourage smoking are recent policy steps that can contribute to improving life-styles in the long-run while perhaps increasing government revenues in the short run.

# 8. Challenges

The analysis above shows that a wide range of reforms have been implemented over the years, to a large extent successfully (e.g. the development of a strong primary care system), and which Lithuania should continue to pursue. However, some policies have met with a number of obstacles and there may be room for improvements in a number of areas. The main challenges for the Lithuanian health care system are as follows:

- To improve, as acknowledge by the authorities, the basis for more sustainable and larger financing of health care in the future (e.g. considering additional sources of general budget funds), with a better balance between resources and demand, between the number of contributors and the number of beneficiaries and which can improve access and quality of care and its distribution between population groups and regional areas. If more resources are brought into the sector it is important that they do not remain fragmented but are pooled together maintaining the strong pooling mechanisms in place today.
- To continue to enhance and better distribute primary health care services and basic specialist services to improve equity of access and the effectiveness and efficiency of health care delivery as well as ensuring effective referral systems from primary to specialist care and improving care coordination between types of care. This can be helped through developing electronic patient records in the future.

- To continue the efforts to decrease hospital beds and average length of stay while increasing daycase surgery and concentrating high-tech hospital services.
- To implement a comprehensive human resources strategy to ensure a balanced skill-mix, avoid staff shortages and motivate and retain staff to the sector, especially in view of migration and ageing.
- To consider additional measures regarding price regulation and direct expenditure control including incentives for good prescribing practices and a more explicit policy on generics and the monitoring of prescription of drugs.
- To continue to improve data collection and monitoring of inputs, processes, outputs and outcomes so that regular performance assessment can be conducted and use to continuously improve access, quality and sustainability of care.
- To gradually increase the use of cost-effectiveness information in determining the basket of goods and the extent of cost-sharing.
- On the basis of the defined public health priorities, continue to enhance health promotion and disease prevention activities i.e. promoting healthy life styles and disease screening given the recent pattern of risk factors (diet, smoking, alcohol, lack of exercise, obesity) as detailed in the national plan, including the smoking ban and health education in schools and health centres. Taxes on tobacco, alcohol and soft drinks, stricter regulation of tobacco advertisement and labelling as well as stricter road safety measures and bicycle lanes and greener areas are some of the measures that can encourage better life-styles.

# Statistical Annex - Lithuania[10]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 6.1 | 6.2 | 6.5 | 6.3 | 6.4 | 6.5 | 5.7 | 5.9 | 6.2 | 6.2 | 6.6 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 419 | 430 | 487 | 517 | 578 | 661 | 623 | 697 | 817 | 919 | 1026 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 4.6 | 4.7 | 4.5 | 4.6 | 4.8 | 5.0 | 3.9 | 4.0 | 4.3 | 4.5 | 4.8 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 316 | 326 | 337 | 377 | 434 | 509 | 421 | 472 | 568 | 669 | 745 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 4.6 | 4.9 | 5.1 | 5.3 | 5.5 | 5.6 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 6900 | 6900 | 7500 | 8200 | 9000 | 10200 | 10900 | 11900 | 13100 | 14800 | 15500 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 | 0.4 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | 0.7 | 0.7 | 0.9 | 0.9 | 1.1 | 1.2 | 1.2 | 1.6 | 1.7 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | : | : | : | : | : | : | 1.9 | 2.0 | 1.8 | 1.7 | 1.7 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | : | : | : | : | : | : | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | : | : | 16.0 | : | : | : | : | : | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 28.3 | : | 32.0 | : | 28.3 | : | 27.0 | 24.5 | 26.5 | : | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 6.4 | 6.8 | 8.2 | 8.9 | 11.3 | 11.4 | 12.2 | 12.5 | 12.9 | : | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 76.7 | 77.0 | 77.5 | 77.6 | 77.5 | 77.8 | 77.7 | 77.3 | 77.0 | 77.2 | 77.6 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | : | : | : | : | : | 54.3 | 56.1 | 57.7 | 59.3 | 62.3 | 61.6 |
| Life expectancy at birth males | 66.0 | 66.3 | 66.8 | 65.9 | 66.2 | 66.4 | 66.3 | 65.3 | 65.3 | 64.9 | 66.3 | 76.3 | 75.9 |
| Healthy life years at birth males | : | : | : | : | : | : | : | 51.2 | 52.4 | 53.4 | 54.6 | 61.5 | : |
| Infant mortality | 9.3 | 8.7 | 8.6 | 7.9 | 7.9 | 6.7 | 7.9 | 6.8 | 6.8 | 5.9 | 4.9 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | : | : | : | : | : | : | : | : | : | : | : | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 76.0 | 74.9 | 69.7 | 72.6 | 74.9 | 76.0 | 67.6 | 67.8 | 69.5 | 72.8 | 72.6 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 23.0 | 25.0 | 26.1 | 26.5 | 24.6 | 23.2 | 31.9 | 31.7 | 30.0 | 26.7 | 26.8 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | : | : | : | : | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | : | 2.4 | 2.0 | 1.8 | 2.2 | 2.3 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | : | : | : | : | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | : | 2.4 | 2.0 | 1.8 | 2.2 | 2.3 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | : | : | : | 58.1 | 61.9 | 69.0 | 68.0 | 68.3 | 67.2 | 66.2 | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 373.5 | 372.8 | 364.0 | 362.6 | 368.2 | 362.1 | 355.6 | 363.2 | 364.6 | 371.1 | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | : | : | 805.3 | 794.9 | 775.0 | 758.7 | 746.3 | 742.4 | 741.7 | 735.2 | : | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 8.3 | 15.6 | 21.3 | 27.9 | 36.0 | 43.0 | 48.2 | 50.5 | 52.6 | : | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 700.1 | 677.8 | 662.9 | 627.4 | 605.2 | 582.8 | 556.3 | 529.9 | 511.5 | 510.7 | 505.9 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 7.0 | 6.8 | 6.4 | 6.6 | 6.4 | 6.5 | 6.6 | 6.8 | 6.6 | 6.9 | 7.0 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | 22784 | 22185 | 21970 | 22171 | 22035 | 21277 | 21552 | 21686 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | 309 | 368 | 520 | 608 | 820 | 980 | 1373 | 1603 | 6120 | 5031 |
| Hospital average length of stay | : | : | : | 10.1 | 9.7 | 9.4 | 9.2 | 9.1 | 9.0 | 8.6 | 8.5 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | 1.3 | 1.6 | 2.3 | 2.7 | 3.6 | 4.4 | 6.0 | 6.9 | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | : | : | : | : | : | 205.0 | 231.9 | 237.6 | 246.1 | 258.8 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | : | : | : | : | : | : | 71.7 | 80.3 | 86.1 | 94.5 | 96.4 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | : | : | 33.9 | 34.3 | 31.0 | 28.5 | 26.4 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | : | : | 11.9 | 11.9 | 11.2 | 11.0 | 9.8 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | : | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | : | : | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | : | : | : | 1.8 | 1.7 | 1.3 | 1.9 | 1.4 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | : | : | : | : | 1.8 | 1.7 | 1.3 | 1.9 | 1.4 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 88.0 | 88.7 | 90.0 | 90.8 | 97.0 | 91.2 | 89.8 | 92.5 | 94.0 | 95.0 | 95.8 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | : | : | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[10] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Luxembourg

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (69300 PPS in 2008) of Luxembourg is the highest of the EU and growth had been very strong since the beginning of the country's "success story" starting in the 1980's with an annual real GDP growth of about 5%. However, the Luxembourgish economy has been hard hit by the global recession with a GDP growth of -3.4% in 2009 but activity should progressively accelerate in the course of 2010 and 2011 (+2.0% and +2.4%).[1] Nevertheless, the exceptional economic performance recorded by Luxembourg in the past was strongly linked to the worldwide expansion of financial services and the present crisis raises questions on the future of this growth model. Some efforts to enhance financial stability, in particular through increased international cooperation in financial supervision and monitoring, are of importance to the country. Other key challenges for achieving sustainable growth in Luxembourg are to decrease disincentives to work for the unemployed and aged workers and to restore cost competitiveness by taking into account productivity developments in wage settings.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (6.8% in 2008) is below the EU average[3] (9.6% in 2008) but has sharply increased until 2004 (from 5.7% in 1998 to 8.2% in 2004), before a decreasing trend. Public expenditure on health as a percentage of GDP has followed the same path, being below the EU average (5.7% compare to 7.4% in 2008) after a constant increase until 2004 (5.2% in 1998 to 7.0% in 2004). The importance of public expenditure on health reflects the importance of the public compulsory insurance system in the financing health care in Luxembourg. The increase in expenditure in the health care system over the last two decades has been achieved without a large increase in the rate of social security contributions since the number of contributions have expanded rapidly in tandem with the number of cross-border workers that are generally relatively young and therefore healthy. Total and public expenditure per capita PPS (4726 and 3972 in 2008) is thus far above the EU average (2381 and 1826 in 2008) because Luxembourg's per capita GDP is the highest in the EU and per capita figures are based on the resident population while about 25% of the Luxembourg's insured people are those commuters from neighbouring countries. It has significantly increased from 1784 PPS and 1648 PPS in 1998.

**The role of technology**

Total expenditure on pharmaceuticals as a percentage of GDP[4] is well below the EU average (0.6% vs. 1.5% in 2008) while consumption is around the average. This is due to the policies implemented in this area, notably the fact that the prescribing behaviour of the doctors is strictly monitored, the amount of drugs reimbursed at one purchase is limited and that, to prescribe expensive drugs, physicians have to follow special instructions. The number of PET scanners per 100 000 inhabitants (0.2) is around the EU average while the numbers of MRI units, CTS and angiography units are well above the EU average (respectively 1.2, 2.6 in 2008 and 1.7 in 2007). Hospitals generally purchase costly technology equipment if they get prior authorisation and funding (around 80%) from the Ministry of Health.

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1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on expenditure for Luxembourg is taken from Eurostat and OECD health data.

3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.

**Health Status and healthy behaviour – life-styles – risk factors**

Life expectancy (83.1 for women and 78.1 for men in 2008) and healthy life years (64.2 for women and 64.8 for men in 2008) is above the average in the EU.[5] Mortality is mainly due to ischaemic heart diseases, cerebrovascular and cardiovascular diseases, cancers, respiratory infections, liver diseases, cirrhosis and accidents.[6] Even if major progress has been done in the area, mortality from road accidents, because of the large volume of traffic in transit, is relatively high and could be lowered. Suicide rate has considerably decreased (-40%) in Luxembourg since 1990 but is still high compared to EU average. Infant mortality, on the other hand, is the lowest of the EU thanks to comprehensive and free antenatal and postnatal services.

Data suggests a large increase in the percentage of the obese population (from 14.9% in 1997 to 20% in 2007), being one of the highest in the EU. Alcohol consumption still seems to be one of the highest of all EU or OECD countries but, in fact, since the data are measured by annual sales per capita, it only reflects the fact that data is not adjusted to a very high volume of purchases by non-residents. Data indicates also that, there has been a decrease in the share of the population that smokes regularly (32% in 1998, 26% in 2001 to 20% in 2008). Programmes to prevent obesity through healthy eating and sports may need further impulse especially among young and children. Fight against alcoholism and new behaviours such as "binge drinking" may also need to be encouraged.

# 2. Expenditure prospects: population ageing and future health status

The population is projected to increase by 0.2 million from 2008 to 2060. Life expectancy is projected to increase by 8.2 years for men and 7.3 years for women. The share of the old (65+) is projected to increase by 9.4 pps and the share of the very old (80+) by 5.4 pps (much less than the respective EU average of 13 and 7.8 pps thanks to relatively high net migration and fertility rate) from 2008 to 2060.

As a result of ageing[7], health care expenditure is projected to increase by 1.3 pps of GDP (below the average change in the EU of 1.7 pps). In Luxembourg, good health (translated by a constant health scenario) could reduce the projected expenditure increase by 70% (from 1.3 pps to 0.4 pps), highlighting the importance of improving health behaviour. Overall, projected health care expenditure increase is expected to add to the strong budgetary pressure from other age-related items of public expenditure. Indeed, due mainly to the generosity of the country's pension system, the increase in public age-related expenditure in the coming decades is projected to reach about 18% of GDP, the highest in the whole EU and the, though sizeable, government's assets will not be sufficient to cover it.

# 3. Health care coverage and expenditure

Luxembourg health care is based on a very comprehensive compulsory health insurance system. 96.8% of all citizens and registered residents are covered by a statutory health insurance system.[8] 1.1% of the population appears to be out of this scheme and takes up voluntary private primary health insurance. Compulsory health insurance is provided and managed by the union of sickness

[5] Data on life expectancy and healthy life years is from the Eurostat database.

[6] Mortality rates are based on the crude number of deaths according to selected causes in the WHO Mortality Database; they have been age-standardised to the 1980 OECD population, to remove variations arising from differences in age structures across countries and over time within each country (OECD Health at Glance 2009).

[7] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf).

[8] 99% if we consider all citizens and registered long-term residents and exclude civil servants and employees of international institutions.

funds - now called National Health Insurance - composed of nine funds to which people are allocated according to their occupation. National Statutory Health Insurance is financed by contributions calculated as a percentage of gross-income[9] and are paid partly by employer (30%) and employee (30%). The rest (maximum 40%) are contributions paid by the central government. Self-employed pay their own contributions according to their profession. Contribution rates have a ceiling as a means to help low income or disadvantaged groups to take up insurance.

Cost-sharing applies to many services but especially for eye glasses and contact lenses, dental care and dental prostheses. There are, however, cost-sharing exemptions for those with certain medical conditions, for pregnant women and for those who have reached an upper limit for out-of-pocket payments. In fact, out-of-pocket spending accounts for only a small part of private expenditure (12.4% of total health spending which is a rather small share in the EU context, despite a large increase after 2002). Given the current small share of private expenditure and out-of-pocket payments, it may be worth investigating if cost-sharing could be adjusted to encourage some services (primary care) more than others. Note though, that antenatal and postnatal care is fully repaid and patients are encouraged with financial incentives to use such services. Additional voluntary private insurance is taken up by around 59.4% of the population to cover for out-of-pockets patient's payments (complementary insurance), and by 2.4% to benefit from extra-service's reimbursement like first-class hospital accommodation (supplementary insurance). Voluntary private insurance is supplied through the non-profit agencies or mutual associations and it supplements the services offered by the state. Note, however, that voluntary private health insurance schemes account only for about 2.6% of total expenditure. As a proportion of total benefits reimbursed, voluntary insurance's part remains then very limited since the compulsory system reimburses a comprehensive set of services.[10]

# 4. Collection, pooling and allocation of financial resources

In 2008, about 84.1% of total health expenditure funding were from public expenditure (statutory insurance contributions and taxation), about 12.4% from out-of-pocket and the rest (3.5%) mainly from voluntary private health insurance.

The public expenditure on health administration and health insurance as a percentage of GDP (0.1%) is below the EU average (0.3%). Public expenditure on health administration and health insurance as a share of total current health expenditure is also below average (1.2% vs. 3.1% in 2008). It has slightly increased since 2003.

It is noteworthy that a large proportion of people covered by the compulsory insurance live outside the country, which makes the reimbursement procedures more complicated. Moreover, the running of the system involves two ministries. The ministry of health is responsible for the supervision, subsidisation and organization of health services and hospital sector while the ministry of social security is responsible for the sickness insurance system. The government generally consults groups of health care professionals' representatives for any draft of legislation. Parliament agrees on the remuneration methods of physicians and hospitals.

It may therefore be worth investigating if there is still room for savings in the administration of the system. Some collaborations and regroupings in hospital's sector (mainly laboratories and hospital's pharmacies), in administrative, technical or logistic manner, are some possible suggestions put forward in order to decrease some costs.

[9] With a maximum limit of five times the minimum guaranteed income.

[10] As a result, Luxembourg scores 5.9 out of 6 on the breadth, 6 in the scope and 5.4 on the depth of basic coverage according to the OECD scoreboard.

The public budget for the health sector is defined annually with possible overshooting. In the past overshooting has led to increases in social contribution rates, delisting of goods and services and increase in user charges. Currently, in order to avoid any shortfall in union's budget, the sickness funds are obliged to maintain a reserve of between 10% and 20% of the total planned expenditure. In case of reserve's use, an alarm device is activated to set specific actions.[11]

# 5. Providers status, referral systems and patient choice

Primary care is provided by general practitioners (GPs) who are mainly self-employed and mostly work in individual private practices. Specialist outpatient care is provided by self-employed individuals working in their own private practices or in private outpatient clinics. 68% of all acute care beds are publicly owned, while 29% are private non-profit and 3% are private for profit.

In Luxembourg, the number of practising physicians per 100 000 inhabitants (348.3 in 2007) like the number of GPs (82 in 2007) is below the EU average. However, those numbers have highly increased – almost doubled for the number of physicians – in the last 20 years and Luxembourg has recorded the highest growth of employment in the health and social sectors in the whole EU from 1995. To practise, physicians need an approval of their qualifications by the Ministry of Health but there are no legal barriers to limit the medical personnel as such, especially since the EU legislation about mutual recognition of medical qualifications has been introduced. Considering that the system remains quite attractive, the number of physicians practising in Luxembourg is expected to continue to increase even if the high proportion of physicians aged 45+ (64.3% in 2007) indicates that ageing can also affect the provision of health. In comparison, the number of nurses per 100 000 inhabitants (1571.5) is one of the highest of the EU and there are four practising nurses per physician. The remuneration of nurses is indeed very attractive in Luxembourg, with a ratio of 1.4 to average wage.[12]

In Luxembourg, the university does not provide medical training and all doctors are foreign-trained. Primary care and specialist staff supply is not regulated and is dictated by demand. The authorities plan to improve the future Luxembourgish education in health area and to find solutions to regulate more systemically the needs of specialists and GPs.

Patients are free to register with a GP but GPs have no gate-keeping role: patients can directly address themselves to specialists even in the case of common primary care conditions. Patients have the right to choose freely their GP, specialist and hospital and there are no legal means to limit the volume of activity even if there are some limitations on the number of visits to more than one physician of the same speciality within a certain period of time.[13] However, to be admitted to hospital, patients need to be referred by their GP or specialist when it is emergency care. In this context of free choice, improving the availability and transparency of information about health care providers' activity and availability is essential to optimise patients' choice and is a priority for the near future.

Over the last three decades, major reforms have lead to a steady decrease in the inpatient care supply. However, still today, the number of acute care beds per 100 000 inhabitants (436.5 in 2008) is above the EU average (even if we take into account the proportion of insured persons that are commuters in population figures) although long waiting lists for surgery appear to remain. Further

[11] According to the OECD, Luxembourg scores 1 out of 6 in the OECD scoreboard due to the not very stringent budget controls.

[12] According to the 2007 OECD data.

[13] Indeed, according to the OECD, the level of choice of provider in Luxembourg has a score of 6 out of 6, while gate-keeping scores 0 out of 6.

reorganisation of the sector could be envisaged (see further). The central government plans for new hospitals and regulates the number of beds.

Finally, pharmaceuticals are exclusively distributed through pharmacies whose number is strictly controlled by the authorities.

# 6. Purchasing, contracting and remuneration systems

Primary care and specialist outpatient care physicians are paid on a fee-for-service basis, though there are no performance-related payment bonuses for example to provide incentives for cost-effective health promotion, disease prevention, or disease management actions. The medical fees are fixed annually by the Sickness Fund ("Caisse de maladie") after negotiations with the National Health Insurance (the Union of Sickness Funds) and representatives of health care professionals. By law, conventioned healthcare providers must strictly observe these fees or penalties[14] can be issued. Non state funded health care professionals can fix their own fees but no reimbursement at all could be requested by their patients.

Only one system of payment is implemented: a reimbursement system where the patient has to pay all costs and submit receipts to the "Caisse de maladie" for partial reimbursement (80% for most of the first visit's services and more for the followings).

Hospitals are financed by the National Health Insurance for the operating budget (set annually) using prospective global budgets or by the central government for major investments.[15] Hospitals have autonomy to recruit their staff. Every five years, hospital services must seek for evaluation and accreditation by the State and regular external evaluations are encouraged. Those efforts have been made by the State to improve quality and cost-containment and this should be continued in the future. Patients have to pay a small daily fee and an extra-fee can be charged if they want a first-class room (single) or specific and flexible care's timetable.

Hospital discharges rates, both inpatient and day case discharges (respectively 16468 and 6069 per 100 000 inhabitants in 2007), are around the EU average having almost doubled over the last 10 years. Average length of stay (7.3 days) is slightly below the EU average (8 days) but has been quite stable over the last ten years. Alongside additional efforts to decrease average length of stay, hospitals should increase output (and therefore decrease waiting times) by further promoting the use of safe one day surgery such as cataract surgery even if Luxembourg is around the EU average for surgery conducted as day cases (26.9% in 2007). To continue to shift from inpatient hospital care towards more day case or ambulatory care or by introducing activity-based funding in order to improve bed occupancy rates, currently low, and reduce average length of stay which is relatively high in Luxembourg, remain important priorities.

Since 1995, for pharmaceuticals, patients must pay only the non-reimbursable part of the cost to the pharmacy. If this change in the system has increased responsibility of the pharmacists in monitoring and gathering information, it has also had an upward impact on expenditure on pharmaceuticals.

[14] Warning, temporary suspension from health insurance or fine.

[15] The OECD score for remuneration incentives to raise the volume of care in Luxembourg is 3.4 out of 6 as a result.

**Pharmaceuticals**

Luxembourg imports all pharmaceuticals products at prices based on those used in the country of origin that are generally Belgium, Germany or France.[16] Drugs and healthcare products are sold only in pharmacies and pharmacists are held responsible for selling products which could result in adverse side effects even if it has been prescribed by a doctor. The counsellor's role of the pharmacist is to be increased in the near future. He/she will be encouraged to substitute a drug by another cheaper if they have the same qualitative and quantitative fundamentals. For this purpose, doctors and pharmacists will have a transparency list of exchangeable products compiled by the Ministry of Health. The state maintains a comprehensive and relatively short list of drugs approved for use and non-prescription drugs are priced higher than prescription drugs. The relatively long time to introduce new drugs on the positive list could be shortened by taking advantage of comparative-effectiveness tests practised in other EU countries. There are four categories[17] of reimbursement for pharmaceuticals and levels range from 0 to 100 percent (mostly 80%). Drugs administered at hospital fall under hospital's budget. Physicians receive feedback on their prescription activity.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Luxembourg has been quite active in this field in recent years and a number of projects have been established to monitor and collect health care data. For example, *HealthNet* is a network to exchange information between professionals and health institutions. *LAB-eHealth* aims to exchange laboratory test results between prescribing physicians and laboratories and *LuHF* is a project to monitor patients with heart failure. All those achievements are part of a major project that Luxembourg's government has been setting in place, since 2006. This new programme, called "e-santé" national plan, aims to improve the exchange and sharing of health data between health care professionals. This should lead to a better quality and performance of the system and to control the development of expenditure, especially by avoiding redundant tests and examinations. In the medium term, each patient will have a personal file containing administrative data and diagnostics data such as laboratories results, radiological data and medications register.

Nevertheless, the use of Health Technology Assessment appears to be limited in terms of the definition of the benefit basket and there is currently no structure to conduct, finance or gather information on HTA.

In 2009, the State's priorities for health promotion and prevention included cancers, diabetes and cardiovascular diseases prevention, free contraception's means, healthy life, nursing and breast screening promotion and integrated programs against tobacco. A major part of health promotion services is contracted out to the non-profit sector funded by the state such as preventive health services at school or distribution of health education material. Other preventive services such as vaccination or breast cancer screening are done by private sector physicians and are financed by the state or the sickness insurance.

Public expenditure on prevention and public health services as a % of GDP (0.1%) and as a percentage of total current health expenditure (1.9%) are slightly below the EU average in 2008. Vaccination rates are above the EU average (99%) and screening rates for cervical and breast cancer are relatively high.

[16] When determining the price for products imported from outside Europe, the price of the product in Belgium, France and Germany is taken into account.

[17] Normal rate, preferential rate, reduced rate and non-reimbursed items.

# 8. Challenges

The analysis above has shown that a range of reforms have been implemented in recent years – e.g. improvements to hospital efficiency, improved data collection and monitoring and the control of pharmaceutical expenditure – and which Luxembourg should continue to pursue. The main challenges for the Luxembourgish health care system are as follows:[18]

- To encourage primary care use vis-à-vis specialist and outpatient specialist care and enhance care coordination between types of care and between medical and social care to promote cost-effective and quality care. This can be done via encouraging a referral system between primary care providers and secondary and tertiary care providers using financial incentives: adjust co-payments where appropriate to encourage primary care vs. other types of care, provide a larger extent of reimbursement to patients when referred by their GP and provide bonuses to primary care providers if they conduct health promotion, disease prevention, disease management and care coordination activities to their patients. Referral systems and care coordination can be helped by the introduction of standardised electronic patient records in order to restrict unnecessary demand (e.g. duplication of testing).
- To continue to increase hospital efficiency by increasing the use of day case surgery and increasing the supply of follow-up care for long-term care patients so as to reduce the unnecessary use of acute care settings for long-term care patients. To consider whether there is room for an element of activity-related payment to hospitals. To facilitate access to treatment abroad for certain types of interventions (by lowering administrative burdens and introducing "money-follows-user" principles).
- To strengthen the incentives to promote prescription and selling of cheaper substitute drugs by the physicians and pharmacists.
- To improve the monitoring of health care delivery not only in terms of quantity but also on quality of output and make this information available to patients so that these exercise their choice and for providers to encourage these to improve their activity. To ensure a greater use of health technology assessment to determine new high-cost equipment capacity as well as the benefit basket and the cost-sharing design.
- To enhance health promotion and disease prevention activities i.e. promoting healthy life styles (physical activity, healthy eating …) in various settings (school, workplace) and implement stricter road safety measures.

[18] The OECD overall efficiency score for Luxembourg is below its group average (about 3.2 years potential gain to be made through greater efficiency in the sector compared to the group average of 2.3 years) and above the OECD average (2.3 years). Areas for improvement include: increase the efficiency of the hospital sector by introducing a DRG payment and improving the availability of information on prices and the quality of services; introducing a gatekeeping system and/or increasing out-of-pocket payment for outpatient specialist care; investigate the reasons for high administrative costs.

# Statistical Annex - Luxembourg[19]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 5.7 | 5.8 | 5.8 | 6.4 | 6.8 | 7.7 | 8.2 | 7.9 | 7.7 | 7.1 | 6.8 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1784 | 2063 | 2224 | 2350 | 2634 | 3934 | 4489 | 4545 | 4953 | 4891 | 4726 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 5.2 | 5.2 | 5.2 | 5.6 | 6.1 | 6.5 | 7.0 | 6.7 | 6.6 | 6.0 | 5.7 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 1648 | 1852 | 1986 | 2065 | 2378 | 3314 | 3807 | 3860 | 4217 | 4114 | 3972 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 5.9 | 6.2 | 6.5 | 6.8 | 7.0 | 7.0 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 36900 | 42300 | 46400 | 46300 | 49200 | 51300 | 54700 | 57200 | 64400 | 68500 | 69300 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | 0.2 | 0.2 | 1.1 | 0.2 | 0.4 | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | 1.2 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.7 | 1.7 | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | 2.6 | 2.5 | 2.3 | 2.3 | 2.2 | 2.6 | 2.8 | 2.8 | 2.7 | 2.7 | 2.6 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 0.7 | 0.7 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.6 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 0.6 | 0.6 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.5 | 1.0 | 1.0 |
| Proportion of the population that is obese | 15.8 | 15.1 | 16.3 | 17.9 | 17.3 | 18.4 | 18.2 | 18.6 | 20.4 | 20.0 | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 32.0 | : | : | 26.0 | 26.0 | 28.0 | 27.0 | 23.0 | 21.0 | 21.0 | 20.0 | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 15.3 | 15.2 | 15.4 | 15.3 | 14.7 | 15.5 | 12.2 | 11.8 | : | : | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 80.8 | 81.4 | 81.3 | 80.7 | 81.5 | 80.9 | 82.4 | 82.3 | 81.9 | 82.2 | 83.1 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | : | : | : | : | 60.2 | 62.1 | 61.8 | 64.6 | 64.2 | 62.3 | 61.6 |
| Life expectancy at birth males | 73.7 | 74.4 | 74.6 | 75.1 | 74.7 | 74.8 | 76.0 | 76.7 | 76.8 | 76.7 | 78.1 | 76.3 | 75.9 |
| Healthy life years at birth males | : | : | : | : | : | : | 59.1 | 62.2 | 61.0 | 62.2 | 64.8 | 61.5 | : |
| Infant mortality | 5.0 | 4.7 | 5.1 | 5.9 | 5.1 | 4.9 | 3.9 | 2.6 | 2.5 | 1.8 | 1.8 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 97.7 | 97.7 | 98.2 | 98.5 | 98.8 | 98.7 | 98.8 | 98.7 | 98.2 | 97.9 | : | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 92.4 | 89.8 | 89.3 | 87.9 | 90.3 | 84.2 | 84.8 | 84.9 | 85.1 | 84.1 | 84.1 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 7.6 | 7.4 | 7.0 | 6.5 | 6.9 | 12.2 | 11.6 | 11.6 | 11.5 | 12.2 | 12.4 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | 5.6 | 3.4 | 3.1 | 2.1 | 1.6 | 1.5 | 1.5 | 1.6 | 1.5 | 1.7 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | 0.3 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | 5.6 | 2.9 | 2.1 | 1.6 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.2 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 54.4 | 56.0 | 58.0 | 60.5 | 62.6 | 65.5 | 57.0 | 60.9 | 63.5 | 64.3 | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 227.7 | 232.7 | 232.8 | 237.1 | 236.7 | 241.8 | 320.9 | 331.7 | 333.3 | 348.3 | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 745.0 | 753.0 | 863.8 | 901.2 | 909.2 | 1084.3 | 1107.5 | 1197.0 | 1332.9 | 1571.5 | : | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 72.5 | 73.9 | 74.3 | 77.2 | 75.2 | 74.7 | 76.6 | : | 77.0 | 82.0 | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 596.6 | 589.2 | 572.2 | 565.1 | 558.7 | 553.4 | 505.8 | 457.9 | 450.2 | 443.5 | 436.5 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 6.3 | 6.2 | 6.1 | 6.2 | 6.2 | 6.3 | 6.1 | 6.1 | 6.0 | 6.1 | : | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | 18075 | 17783 | 17534 | 17421 | 17491 | 17305 | 16736 | 16468 | : | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | 3630 | 3997 | 4260 | 4318 | 4555 | 4725 | 5430 | 6069 | : | 6120 | 5031 |
| Hospital average length of stay | : | : | 7.5 | 7.4 | 7.5 | 7.2 | 7.3 | 7.3 | 7.4 | 7.3 | : | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | 16.7 | 18.4 | 19.5 | 19.9 | 20.8 | 21.7 | 24.5 | 26.9 | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | 219.6 | 245.4 | 243.4 | 270.8 | 271.7 | 397.8 | 426.0 | 416.1 | 436.0 | 444.0 | 431.6 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 177.1 | 196.7 | 199.0 | 208.3 | 226.0 | 332.3 | 359.0 | 350.4 | 369.4 | 376.9 | 362.6 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | 12.0 | 11.1 | 11.6 | 10.5 | 11.0 | 10.4 | 10.2 | 10.2 | 9.9 | 10.1 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | : | 9.6 | 9.0 | 9.0 | 8.7 | 9.2 | 8.8 | 8.6 | 8.6 | 8.4 | 8.5 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | 0.9 | 1.1 | 1.0 | 0.8 | 1.9 | 1.6 | 2.3 | 2.0 | 2.1 | 1.9 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | 0.9 | 1.0 | 0.9 | 0.7 | 1.9 | 1.6 | 2.3 | 1.9 | 2.0 | 1.9 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 98.0 | 98.0 | 98.0 | 98.0 | 98.0 | 98.0 | 98.0 | 99.6 | : | 99.1 | 99.1 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | 36.0 | 36.4 | 36.6 | 37.1 | 39.6 | 42.2 | 41.7 | 51.8 | 49.3 | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | 58.2 | 59.8 | 59.8 | 53.8 | 61.9 | 62.4 | 60.8 | 63.1 | 63.5 | 63.5 | 64.5 | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[19] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Hungary

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

The Hungarian GDP per capita (16100 PPS), although having risen constantly over the last decade (9300 PPS in 1998), is still well below the EU average of 25075 PPS in 2008. Moreover, fiscal crisis and financial and economic crisis have hit the Hungarian economy relatively strongly over the recent years. Consequently, after just 0.6% growth in 2008, economy contracted by as much as 6.3% in 2009 mainly due to a sharp contraction of domestic demand. 2010 is expected to be a year with zero growth, which will take positive value (2.8%) only in 2011.[1]

**Recent trends of expenditure**

In 2008 total expenditure on health[2] (7.3%) was lower than the EU average[3] of 9.6%. Total expenditure on health as a % of GDP is now lower than the values registered during 2002-2006 and it is now similar to that in 1998 (7.1%). Similarly, public expenditure (5.2% of GDP in 2008) is also lower than the values for 2002-2006 and similar to that of 1998 (5.2% of GDP). It remains much lower than the EU average of 7.4%. When measured in per capita terms, the gap between Hungary and EU average is considerably more pronounced: total expenditure amounts to 1175 PPS (vs. EU 2381) and public to 835 PPS (vs. EU 1826). It should be noted that a comprehensive reform of health care system aiming at fiscal consolidation and greater efficiency has been introduced in 2007, although its actual overall effect is not yet fully known. Though there are significant developments, the pharmaceutical expenditure of budget has been significantly decreased due to the changes in the reimbursement system since 2007 as the manufacturers are interested in reducing the level of budget deficit. The institutions of the inpatient sector have received additional sources in 2007 for improving the level of services.

**The role of technology**

Looking at diagnostic and therapeutic units, in 2008, the numbers of MRI units (0.3), CTS units (0.7) and PET scanners (0.1) per 100 000 inhabitants are among the lowest in the EU and well below EU averages (1.0, 1.9 and 0.11 respectively)[4], despite a strong increase over the last decade. This increase is probably associated to a national effort to replace outdated equipment and to improve the quality of care provided. However, additional high-cost equipment should be considered carefully under the perspective of cost-effectiveness. On the other hand, total expenditure on pharmaceuticals (2.3% of GDP and 32.4% of total health expenditure) exceeds considerably that of the EU averages (1.5% of GDP and 17.1% respectively). In both dimensions pharmaceutical spending has remained stable over the last five years.

**Health status and healthy behaviour – life-styles – risk factors**

The health status of the Hungarian population is lower than the EU average. Life expectancy at birth is lower than the EU average though the gap is narrower for women (78.3 years vs. 82.3 years in the EU) than for men (70.0 versus 75.9 in the EU).[5] Healthy life expectancy is also lower than in the EU (57.6 versus 62.3 years for women and 55 versus 61.5 years for men). Infant mortality rate, although falling significantly over the last decade (from 9.7‰ in 1998 to 5.6‰ in 2008) is still

1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on expenditure is taken from OECD health data.

3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on healh in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 Data on technology is taken from OECD health data and Eurostat database.

5 Data on life expectancy and healthy life years is taken from the Eurostat database. Data on life-styles is taken from the Eurostat database and the OECD health data.

among the highest in the EU and considerably higher than EU average of 4.3‰. Cardiovascular diseases and neuropsychiatric conditions account for the highest burden of disease, both among males and females. The main causes of death are circulatory system diseases among men and women (31.9%, 26.4%), cancer (31%, 42.2%) and external causes (12.6%, 7%).[6]

Although recent data is lacking in some areas, in terms of healthy life-styles the Hungarian population fairs worse than many other EU Member States. The percentage of obese population (28.5%)[7], the share of regular smokers (31.4%)[8] and the consumption of pure alcohol consumption in litres per capita (12.6 in 2007[9]) are markedly higher than respective EU average indicators. As a consequence, Hungary has the world's highest lung cancer mortality rate among men (and constantly growing among women) in the EU and a very high male mortality from cirrhosis of the liver. Moreover, the suicide rates are among the highest in the EU. A high inequality across socio-economic groups measured in health status as well as measured in term of age of death dispersions has been also identified as a main challenge by the OECD.[10]

## 2. Expenditure prospects: population ageing and future health status

Over the decades to come population is projected to decrease significantly from 10 million in 2008 to 8.7 million in 2060. Life expectancy is projected to grow by 12.2 years for men and 9.2 for women, significantly more than in the EU on average. The share of the old (65+) is expected to almost double (from 16.2% to 31.9%) and the share of the very old (80+) to almost triple (from 3.7% to 12.6%).

Driven by the change in the demographic structure[11], public spending on health care is projected to increase by 30% or 1.7 percentage points of GDP, slightly more than 25% average increase in the EU. Good health (translated by a constant health scenario) reduces the projected expenditure increase to 1.5 pps, highlighting the importance of improving health behaviour. The results of the projections have not taken into consideration the recent (2007) reform aiming at fiscal consolidation and greater efficiency of the sector. Still, relatively large projected growth in health care spending, analysed together with considerable expected increase in the other age-related items of public expenditure and the current budgetary stance, results in medium risk for the long-term sustainability of Hungarian public finances.

## 3. Health care coverage and expenditure

The Hungarian health care system is based on social health insurance which covers virtually entire population (less than 1% is not covered). Membership is compulsory for all citizens living in Hungary (those with the personal identification card), and opt-out is not permitted. The population is divided into three groups: (1) employees who contribute to the social insurance system; (2) groups who are covered without contributing (pensioners, women on maternity leave, students, minors, homeless persons); (3) and all other inhabitants (including e.g. farmers). Health insurance contribution is proportional. In case of employees it amounts to 8% of the gross salary, of which 2% are paid by employer and 6% by employee. For those who fall under category (2), the central budget transfers a monthly amount of 9,300 HUF/person as health service contribution into the

6 WHO/Europe, HFA database July 2008.
7 National Examination of Diet and Nutrition Status, 2009.
8 European Health Examination Survey, 2009.
9 OECD Health Data 2009.
10 OECD (2010) "Health Care Systems: Efficiency and Institutions", Economics Department Working Papers No. 769, p11, box 1.
11 I.e. considering the "pure ageing scenario" of the projections (see the 2009 EPC/EC Ageing report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).

Health Insurance Fund (HIF), while those who fall under category (3), are obliged to pay a monthly amount of 4,950HUF/person. Financing for groups covered without contributing is provided by the central budget in terms of a fixed per capita fee.

Until the recently enacted reform, social health insurance provided a comprehensive benefit package to virtually the entire population, with few exclusions and little or no co-payment. The 2006 Law has tightened the link between service entitlements and contribution obligations by distinguishing between a basic service package and the social insurance package.

The Health Insurance Fund (HIF) is the entity that finances most of the recurrent costs of health services and cash benefits (sickness allowances) provided to eligible persons. Centralised earmarked resources are allocated to the HIF and fully separated from the government budget, although the central government is obliged to cover any deficit of the HIF. The HIF has been in deficit almost since its inception in 1992 until 2006, due to a number of reasons: low employment rate, widespread contribution evasion, a discretionary reduction of the rate of employer contributions and several expenditure-side measures. In comparison, during 2007 and 2008, the HIF generated surpluses.

While HIF covers recurrent expenditures only, capital costs are financed by the owners of health care facilities, i.e. mainly municipalities or counties and, to a limited degree, the private owners. This system applies to both inpatient and outpatient sector.

In 2008, private expenditure accounted for 29% of total health spending[12], considerably more than in the EU on average (22.7%). Even larger, as compared to the EU average, is the share of out-of-pocket payments (23.9% vs. 14.4% in the EU).[13] While demand for care has fallen as a result of the reform, a system of exemptions and compensations has been introduced to protect against the undesirable effects on the access to care.

# 4. Collection, pooling and allocation of financial resources

The health care budget is made up of three components: (1) the budget of the HIF derived from health insurance contributions and earmarked health care tax (71% in 2008[14]); (2) central government budget, derived from general taxes but also transferred to the HIF (25% in 2008) and (3) local government budgets, derived from local taxes and from the central government grants for investment. The budget-setting processes at different levels are practically independent, apart from central government subsidies for regional and local levels.

A key principle is the institutional separation of capital and recurrent costs, which applies to all sub-sectors. While investment is decided upon and financed by either local or central government, the HIF covers recurrent costs only.[15] Capital expenditures are the responsibility of the owners of health care facilities, which are - in most cases - local and regional governments. If an investment exceeds financial capability of a local government, a conditional or matching grant from central government can be allowed. Furthermore, certain services, such as public health and emergency ambulance services are financed from the central government budget only.

Until 2007, the HIF was the sole institution collecting, pooling and managing the health insurance funds. It was divided into twenty sub-budgets for different service types (e.g. primary care,

[12] OECD health data combined with Eurostat data from 2003 for OECD Member States.

[13] As a result, Hungary scores 6 out of 6 on the breadth, 6 in the scope and about 5.3 on the depth of basic coverage according to the OECD scoreboard.

[14] National Institute for Strategic Health Research.

[15] The OECD score for budget constraint is 5 out of 6.

outpatient specialist care, etc.). All but one (pharmaceuticals) sub-budgets are being prospectively set an annual national ceiling by the National Assembly. Transfers between sub-budgets have been allowed since 1999, mainly due to the recurrent overspending in the pharmaceutical sub-budget.

The level of expenditure administering such a system, where entitlements are not linked to contributions payments and virtually the entire decision-making power rests with the Ministry of Health, is not high. Public and total expenditure on health administration and insurance as a percentage of GDP (0.08% and 0.1% respectively) is well below the EU average (0.3% and 0.4% respectively in 2008), as is public (1.08%) and total (1.25%) expenditure on health administration and health insurance as a percentage of total current health expenditure vs. EU averages of 3.1% and 4.4% in 2008.

# 5. Providers status, referral systems and patient choice

Health care provision is the state's responsibility. The delivery system is organised on the basis of "territorial supply obligation", which assigns the responsibility to different levels of government according to the principle of subsidiarity (the service should be provided at the lowest effective level of organisation). This way, municipalities are responsible for providing primary care, while responsibility for secondary and tertiary health care services is shared between municipalities, counties and central government. Nevertheless, even if obliged by law to provide a given level of care, the local authorities are not obliged to deliver it. Each level is allowed to outsource service delivery to private providers. Moreover, the owner of health care facilities (whether private or public) is obliged to keep it in working order, i.e. to cover capital costs, which is particularly relevant in case of state-owned equipment and facilities being used by private providers to deliver subcontracted services.

Control, coordination, supervision and delivery of public health services are the responsibility of the central government which provides the services through the National Public Health and Medical Officer Service, in some cases in cooperation with the other institutions.

Provision of primary care is within the area of responsibility of the municipalities. They may provide it through salaried doctors or contract the delivery to independent physicians, who need to have relevant qualifications and a 'practice right' to be eligible. "Practice right" is the right to perform the professional activities, which can be sold and bought by another qualified physician. By establishing the territorial reach of the primary care districts and the number of practices in each of them, local governments can control the amount and type of care provided to the population. Patients can freely choose family doctor and change him/her once a year.[16] Doctors cannot refuse the patients who live in their primary care district, but are allowed to refuse patients from other districts.

A number of reforms have been enacted over the last decade to provide incentives to take up the posts of physicians and nurses. The reforms have not brought the visible consequences so far. Although slightly higher than a decade ago, the number of practicing physicians (309 per 100 000 inhabitants), practising nurses (632) and in particular general practitioners (65.2 in 2006) is still well below the EU respective averages of 322, 879 and 92 per 100 000 inhabitants. Moreover, the age structure of GPs is highly unfavourable: 64.6% of GPs are older than 45 and 23.4% are older than 55. Their geographical mobility is low due to the system of "practice rights".

[16] According to the OECD, Hungary scores 6 out of 6 on the level of choice of provider in the OECD scoreboard.

Although there is an official referral system and family doctors formally act as gatekeepers, the payment system includes no incentives to provide definitive care and avoid unnecessary referrals.[17] Consequently, the number of referrals to specialists and hospitals is high and only with the recent (2007) reform reducing impatient capacity of hospitals (by setting up a few regional universal hospitals and medical clinics), strengthening of the referral system and introducing a formal transparent system of waiting lists has allowed the authorities to limit the hospital overutilization. Indeed, the number of acute hospital beds per 100000 inhabitants has fallen in the first year of the reform (between 2006 and 2007) from 553 to 413 (411 in 2008), while inpatient discharges per 100 000 inhabitants fell from 23161 to 19871 (19486 in 2008). Both indicators are still significantly above the EU averages of 383 and 18081 respectively.

Responsibility for secondary and tertiary care is shared among different levels of local and regional government. Formally, the county authorities are the central actor owning large multi-speciality county hospitals providing secondary and tertiary inpatient and outpatient care to the acutely and chronically ill. However, municipalities and central government also play a role, the former being responsible for polyclinics (outpatient specialist care), dispensaries (outpatient care for the chronically ill) and municipal hospitals (secondary inpatient and outpatient care), while the latter own – through specific ministries – a number of acute and chronic hospitals. Dialysis and home care have in comparison a significant share of private ownership.

# 6. Purchasing, contracting and remuneration systems

As a result of a series of reforms aiming at the increase in the supply of physicians, family doctors can be employed according to four different schemes: (1) municipality employee paid on the basis of a monthly salary; (2) family doctor under a contract using public equipment and paid a capitation fee from the HIF; (3) family doctor being an independent provider with no municipal contract and no territorial supply obligation (large majority of the GPs); he/she is entitled to capitation fee from the HIF only if he/she has minimum threshold of registered patients; (4) "freelance medical doctor", not being subject to public employee regulations, but not having a status of self-employed private entrepreneur either; he/she receives an out-of-pocket payment directly from the patient.

Capitation fees paid under schemes (2) and (3) are adjusted to the age structure of the patients covered: children and elderly weigh most, working age population least. Moreover, in order to avoid negative impact of the excessive practice size on the quality of care, a threshold of the number of patients has been introduced above which the capitation payment is only partial. Therefore, although choice and competition between GPs is theoretically favourable to patients, the current payment system does not encourage GPs performance in the service given to their patients.

The payment system in secondary and tertiary care depends on the type of institution and services provided. Outpatient specialist services are financed by fee-for-service points, whereby each procedure is assigned a number of points according to its complexity and requirement of services and providers report total monthly number of points to the HIF for reimbursement.[18] The monetary value of a point is defined in advance, and part of the sub-budget is put aside at the beginning of each year to compensate for possible 'excessive' provision of services. The sustainability of outpatient budget is achieved by a so-called performance volume limit. In the beginning of each year, based on previous years' data, the performance volume limit is defined for every single outpatient health service provider. Performance volume limit for the year of 2010 was defined, in agreement with Professional Bodies, based on performance carried out during 2008. Currently, 1 financing point equals to 1.46 HUF. Consequently, even if control mechanisms have been set in

[17] As a result, Hungary scores 5 out of 6 on the level of gatekeeping in the OECD scoreboard.
[18] The OECD score for remuneration incentives to raise the volume of care in Hungary is a bit less than 3 out of 6.

place, the fee-for-service payment scheme in hospitals could discourage treatment as an outpatient and encourage hospitals to treat as an inpatient for financial gain, rather than for the ideal treatment of the patient.

Inpatient services are reimbursed according to the DRG-based prospective payment system, except for a few high-cost interventions reimbursed on a case basis. Hospitals report the total amount of completed procedures to the HIF which calculates their total value by multiplying the DRG points by the national base fee (value of one point) set in advance for each year. The sustainability of financing inpatient care is also ensured by the performance volume limit. Currently one single weight-point equals to 146 000 HUF.

Finally, the average salary in the health sector has remained among the lowest in the economy and health spending could then come under pressure from demands for wage increases.

**Pharmaceuticals**

Pharmaceutical spending accounts for 32.4% of total health expenditure and 21.5% of public health care expenditure, which is one of the highest proportions of pharmaceutical spending compared to the total health spending in the EU. Such high expenditure is a consequence of the price setting mechanism and the system of state subsidies for pharmaceuticals. However, it is important to emphasise that the pharmaceutical expenditure of budget has been significantly decreased due to the changes in the reimbursement system since 2007. Decision is only taken on reimbursement, and prices are freely determined by the market (even if decisions on reimbursement have impact on market operators' price policies). Prices of original drugs are established on the basis of external price referencing (comparison with the prices in the other EEA countries), while the maximum generics' prices are additionally linked to the original drug price. Reimbursement applies to two positive lists: one includes drugs which can be prescribed by any physician and are reimbursed at between 0 and 80%; the other includes drugs with special indications, to be prescribed by specialists and reimbursed at between 50 and 100%. Moreover, physicians are obliged to prescribe reference medicines.

The recent (2007) reform of the pharmaceutical market aimed at rationalising medication use and establishing competing environment for generic drugs. In particular, it changed the drug subsidy system by introducing a minimum charge for previously free drugs and set up strict criteria for classifying drugs as subsidised. Finally, it liberalised the pharmacy sector by facilitating the establishment of pharmacies and allowing a number of over-the-counter drugs to be sold in supermarkets. Hungary introduced uses a payback system (including three main elements) which obliges pharmaceutical manufacturers to pay back part of the pharmaceutical budget's deficit. It enhances the interests of the pharmaceutical manufacturers to reduce the level of budget deficit. In 2009, the government decreased or withdrew the reimbursement of pharmaceuticals whose efficiency was not (or not sufficiently) justified by evidence.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Further measures to improve quality will include implementing a monitoring and evaluation system based on defined indicators. Major IT development plans include establishing a database for the insurance system, developing a personal identification system, improving remote diagnostics and telemedicine.

Healthy lifestyle and disease prevention activities have received a lot of attention mainly through programmes aiming at improving the health status and quality of life of the population. Total expenditure on prevention and public health services as % of GDP is about the EU average (0.3% in

2008) while total expenditure on prevention and public health services as % total current expenditure on health is well above the EU average (4.0% vs. 2.7% in 2008). Vaccination rates are above the EU average (100% vs. 96% in 2008) but the proportion of screening rates for breast (55.1% of the target population in 2004) and cervical cancer (28.1% of the target population in 2004) could be improved.

# 8. Challenges

The analysis above shows that a range of reforms have been implemented in recent years like for example to improve hospital efficiency and inpatient care supply or to promote healthy life of the population in particular. Therefore, Hungary should continue to pursue them together with new challenging reforms. The main challenges for the Hungarian health care system are as follows:[19]

- To improve long-term sustainability of health insurance system, likely to have negative consequences for access and equity This may mean improving the basis for more sustainable and larger financing of health care in the future (e.g. considering additional sources of general budget funds), with a better balance between resources and demand, between the number of contributors and the number of beneficiaries and which can improve access and quality of care and its distribution between population groups and regional areas. If more resources are brought into the sector it is important that they are pooled together through the strong pooling mechanisms in place today.
- To foster effective coordination mechanism between public entities responsible for investment decisions and providers actually using health care facilities.
- To continue efforts to strengthen the care coordination, by promoting the role of GPs and avoiding unnecessary use of secondary and tertiary care. On one hand, supply of human resources to the primary care sector should be fostered by providing an adequate set of financial (performance-related component added to the current capitation-based remuneration) incentives. On the other hand, control and organisational measures strengthening the referral system should limit the use of specialist and hospital care.
- To develop the mechanism of updating the hospital payment system (relationship between the actual costs of treatments and tariffs become outdated). A sector-wide survey has been conducted recently in order to tackle this problem.
- To strengthen monitoring and control by modernising and developing information technologies as well as by supporting human resources involvement in the decision making process. To introduce effective mechanisms for assuring quality of care: clear definition of tasks and competences of the health care providers (especially in the area of emergency care), more stringent conditions for licensing and accreditation, consistent development and application of medical guidelines).
- To strengthen efforts to promote healthy lifestyles, in particular by preventing smoking, excessive alcohol consumption, unhealthy diet and physical activity. Public health has been underlined as a priority in the development of recent health strategy for the health system. In this framework, the public health programme should continue, the importance of medical screening should be stressed.

[19] The OECD overall efficiency score for Hungary is much lower than its group average (about 4.2 years potential gain to be made through greater efficiency in the sector compared to the group average of 2.7 years) and below the OECD average (2.3 years).

# Statistical Annex - Hungary[20]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 7.1 | 7.2 | 7.0 | 7.2 | 7.6 | 8.3 | 8.1 | 8.3 | 8.1 | 7.4 | 7.3 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 654 | 701 | 742 | 833 | 952 | 1085 | 1099 | 1182 | 1210 | 1155 | 1175 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 5.3 | 5.2 | 5.0 | 4.9 | 5.3 | 6.1 | 5.8 | 6.0 | 5.9 | 5.2 | 5.2 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 489 | 507 | 525 | 575 | 668 | 790 | 796 | 855 | 877 | 816 | 835 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 5.8 | 6.0 | 6.4 | 6.7 | 6.9 | 7.0 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 9300 | 9700 | 10500 | 11600 | 12600 | 13000 | 13700 | 14200 | 15000 | 15600 | 16100 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | : | : | : | 2.0 | 2.1 | 2.3 | 2.3 | 2.6 | 2.6 | 2.3 | 2.3 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 1.4 | 1.3 | 1.2 | 1.3 | 1.3 | 1.4 | 1.5 | 1.7 | 1.7 | 1.4 | 1.3 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | 18.2 | : | : | 18.8 | : | : | : | : | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | : | 32.5 | 30.2 | : | : | 30.4 | : | : | : | : | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 12.2 | 12.2 | 12.0 | 13.2 | 13.3 | 13.2 | 13.2 | 13.0 | 13.2 | 12.6 | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 75.6 | 75.6 | 76.2 | 76.7 | 76.7 | 76.7 | 77.2 | 77.2 | 77.8 | 77.8 | 78.3 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | : | : | : | 57.8 | : | 53.9 | 57.0 | 57.6 | 58.0 | 62.3 | 61.6 |
| Life expectancy at birth males | 66.5 | 66.7 | 67.6 | 68.2 | 68.3 | 68.4 | 68.7 | 68.7 | 69.2 | 69.4 | 70.0 | 76.3 | 75.9 |
| Healthy life years at birth males | : | : | : | : | : | 53.5 | : | 52.0 | 54.2 | 55.0 | 54.6 | 61.5 | : |
| Infant mortality | 9.7 | 8.4 | 9.2 | 8.1 | 7.2 | 7.3 | 6.6 | 6.2 | 5.7 | 5.9 | 5.6 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 74.8 | 72.4 | 70.7 | 69.0 | 70.2 | 72.8 | 72.4 | 72.3 | 72.6 | 70.4 | 71.0 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 22.3 | 24.9 | 26.3 | 27.7 | 26.3 | 23.7 | 23.4 | 23.8 | 23.0 | 24.3 | 23.9 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | 2.0 | 2.2 | 1.9 | 1.7 | 1.7 | 1.3 | 1.3 | 1.2 | 1.2 | 1.3 | 1.3 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | 2.0 | 2.2 | 1.9 | 1.7 | 1.7 | 1.2 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 49.5 | 51.2 | 52.3 | 55.8 | 58.4 | 60.2 | 60.4 | 61.8 | 63.7 | 57.2 | 64.6 | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 308.6 | 310.9 | 268.5 | 289.4 | 319.0 | 325.1 | 334.0 | 278.4 | 303.7 | 280.6 | 309.0 | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 569.0 | 559.0 | 579.2 | 583.4 | 594.1 | 602.4 | 601.4 | 611.2 | 620.0 | 595.6 | 632.0 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 66.1 | 65.9 | 66.0 | 66.0 | 66.1 | 66.1 | 65.6 | 65.4 | 65.2 | 64.9 | 65.4 | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 569.5 | 565.5 | 565.0 | 556.3 | 554.8 | 553.4 | 551.2 | 552.0 | 553.1 | 413.9 | 411.4 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 10.6 | 10.9 | 11.1 | 11.3 | 11.9 | 12.2 | 12.6 | 12.9 | 12.9 | 10.8 | 11.3 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | : | : | 23216 | 23630 | 23161 | 19871 | 19486 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | : | : | 479 | 526 | 591 | 832 | 1106 | 6120 | 5031 |
| Hospital average length of stay | : | : | : | : | : | : | 8.1 | 8.0 | 7.9 | 7.9 | 8.2 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | : | : | 2.0 | 2.2 | 2.5 | 4.0 | 5.4 | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | : | : | 237.6 | 263.2 | 298.1 | 316.2 | 367.9 | 384.2 | 361.0 | 371.0 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 128.9 | 125.9 | 130.5 | 145.5 | 164.4 | 188.0 | 202.3 | 238.0 | 258.1 | 211.1 | 210.3 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | : | : | 29.7 | 28.9 | 28.4 | 29.9 | 32.1 | 32.9 | 32.3 | 32.4 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 20.9 | 18.8 | 18.3 | 18.2 | 18.1 | 17.9 | 19.1 | 20.8 | 22.1 | 18.9 | 18.4 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | 4.7 | 5.0 | 5.0 | 5.1 | 5.0 | 4.9 | 4.5 | 4.4 | 4.2 | 4.1 | 4.0 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | 2.6 | 2.6 | 2.5 | 2.6 | 2.7 | 3.4 | 3.0 | 3.0 | 2.8 | 2.7 | 2.7 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 99.0 | 99.9 | 99.8 | 99.9 | 99.9 | 99.9 | 99.8 | : | : | 99.9 | 99.9 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | 28.4 | 27.3 | 27.3 | 27.5 | 28.1 | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | 26.7 | 28.9 | 48.3 | 60.2 | 55.1 | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[20] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Malta

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (19100 PPS in 2008) is lower than the EU average (25075 PPS) up from 13700 in 1998. Between 2001 and 2008 Malta grew at an average rate of 1.8%. As a result of the global economic crisis, GDP growth was -1.5% in 2009 and unemployment reached 6.9% in the same year. The recovery is projected to start in 2010 with a forecasted economic growth of 1.1% in 2010 and 1.7% in 2011.[1] In 2009, the budget deficit reached 3.8% of GDP.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (7.5% in 2008) is below the EU average[3], (9.6% in 2008). Since 2000, total expenditure on health as a percentage of GDP has fluctuated year by year. This was particularly influenced by the major costs being incurred in particular years for the development of Mater Dei Hospital, a general and acute care public hospital which was officially launched in 2007. WHO estimates for the years 2000-2005 however show a steadily increasing trend in total expenditure on health as a percentage of GDP from 6.8% (2000) to 8.4% (2005). Public expenditure on health as a percentage of GDP is below the EU average (5.8% compared to 7.4% in 2008) and increased slightly from 4.6% in 1998.

**The role of technology**

Pharmaceutical expenditure constitutes 21.1% of total health expenditure. Of this 61.5% is public expenditure.[4] The number of MRI units per 100 000 inhabitants (0.7 in 2008) is below the EU average (1.0 in 2007) but the number of CTS units per 100 000 inhabitants (3.2 in 2008) is actually much above the EU average (1.7 in 2007).[5]

**Health Status and healthy behaviour – life-styles – risk factors**

Life expectancy (82 years for women and 77 for men in 2008[6]) is above the EU average. Healthy life years (71 years for women and 69 for men in 2008) are well above the EU average.[7] Breast cancer incidence and diabetes prevalence is perhaps relatively high by EU standards. Data is limited in relation to the proportion of the population which is obese (22.3% self-reported to have a Body Mass Index of equal to or more than 30 in 2008), the share of the population that smokes regularly (31% of males and 21.4% of females in 2008) and alcohol consumption on a daily basis (5% in 2008).[8] The values on obesity and smoking merit some attention and actions. A European Health Examination Survey will be carried out in the near future and will provide more accurate statistics about the prevalence of people who are obese and who suffer from conditions affecting their health. The authorities also recognise socio-economic health inequalities as a policy challenge.

1 European Commission (2010), European Economic Forecast – Spring 2010.
2 Data on expenditure is taken from WHO health for all database.
3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.
4 Data on expenditure is taken from WHO health for all database.
5 Data on technology is taken from the Eurostat database.
6 Department of Health Information and Research, Annual Mortality Report 2008.
7 Data on life expectancy and healthy life years is from the Eurostat database for 2007.
8 European Health Interview Survey, Malta 2008.

## 2. Expenditure prospects: population ageing and future health status

The total population of Malta stood at 410,290 in 2007[9] and is projected to decline to around 405,000 by 2060.[10] Life expectancy is projected to increase by 8.3 years for men and 7.4 years for women. The demographic changes of the Maltese population follow that of an ageing population. The share of the old (65+) is projected to increase by 18.6 percentage points and the share of the very old (80+) by 8.7 percentage points (more than the respective EU averages of 13 percentage points and 7.8 percentage points) from 2008 to 2060.

As a result of ageing[11], health care expenditure is projected to increase by 3.8 percentage points of GDP (much above the average change in the EU of 1.7 percentage points). In Malta, good health (translated by a constant health scenario) reduces the projected expenditure increase from 3.8 percentage points to 2.2 percentage points, highlighting the importance of improving health behaviour.[12] Overall, projected health care expenditure increase is expected to add to the strong budgetary pressure from other age-related items of public expenditure (mainly pensions) contributing to the high risk for long-term sustainability of public finances.

## 3. Health care coverage and expenditure

A National Health Service, funded through taxation, provides 100% population coverage for a comprehensive range of services (preventive, curative and rehabilitative care). It is managed by the Ministry for Health, the Elderly and Community Care.

Services are free at the point of use. Nevertheless, private expenditure constituted 22.6% of total health expenditure in 2008, which is about the EU average of 22.7%. A large part of private expenditure is out-of-pocket expenditure (20.1% of total health expenditure in 2008 and higher than the respective EU average of 14.4%) though it shows an important reduction since 2000 (26.7%). Authorities also ensure means-tested entitlement (for those on low incomes) to pharmaceuticals, dental and optical care, i.e. benefits mostly excluded from the free public healthcare basket. The remainder is private health insurance whose share of private expenditure has remained steady over the last few years. In 2008, 21.55% of the population reported that they have taken up private supplementary health insurance.[13] A growing private sector, providing private outpatient consultations (primary and basic specialist care) and also some inpatient services, helps in explaining the present share of out-of-pocket expenditure and private expenditure, as patients usually pay directly out of their pockets when using those services.

The chronically ill are provided with free medicines according to their condition in a system which is separate from the one mentioned above. There is a list of chronic illnesses which entitle one for free medical treatment, and a formulary of medicines that are distributed freely by the state against prescription by a medical doctor.

One of the reasons put forward by patients to look for private treatment was the perceived long waiting times for care. Government is trying to reduce long waiting times by consolidating primary health care with the aim that:

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[9] National Statistics Office (2009), Demographic Review 2008.
[10] Eurostat, EUROPOP2008.
[11] I.e. considering the "pure ageing scenario" of the projections (see the 2009 EPC/EC Ageing report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).
[12] European Commission (2009), 2009 Ageing Report: Economic and Budgetary Projections for the EU-27 Member States (2008-2060), European Economy 2/2009.
[13] European Health Interview Survey 2008.

1. Only patients truly requiring specialist care are referred to specialist examination and treatment;
2. Those with more urgent needs for specialist care have shorter waiting times.

A primary health care reform has been proposed by Government but is still in the phase of discussion and modification. Authorities also wanted to better equip health centres to conduct treatment of minor injuries and accidents so as to reduce the use of emergency wards in hospitals for non-severe cases. To reduce waiting times for surgery authorities have introduced a nationwide management system to manage patients on waiting list, have introduced waiting time targets, increased ward hours and have increased hospital capacity. Preliminary results have been very encouraging.

Hence, efforts to ensure cost-coverage for more vulnerable parts of the population and to reduce waiting times may help explain the increase in public and total expenditure observed in the last decade. The effects of the ageing population on increases in demand and the increase in costs associated with the increasing prices for medicines and human resources also need to be factored in when assessing the current and projected increases in public and total health care expenditure.

# 4. Collection, pooling and allocation of financial resources

In 2008, 77.4% of total health expenditure funding came from government sources (taxes at central level), 20.1% from out-of-pocket payments and the rest from private insurance.

There is no information on public and total expenditure on health administration and health insurance as a percentage of GDP or as a percentage of current health expenditure.

The budget for the health sector is defined annually in Parliament when the general Budget is approved. A specific unit for Financial Management and Control has been set up to monitor and control the financial management of the system.

# 5. Providers status, referral systems and patient choice

Under the NHS, primary care is delivered through a network of public health centres, provided by general practitioners (GPs), nurses and some specialists. NHS outpatient specialist care is centred in the hospitals outpatient departments, in which most of the specialists work. Hospital care is mostly delivered in NHS hospitals. In addition to NHS provision, there is also private outpatient primary care and basic specialist care practice, given mostly from the private doctor's office, for private patients, though often conducted by the same doctors that work for the NHS.

The number of licensed physicians per 100 000 inhabitants (334.9 in 2008) is below the EU average (442.7 in 2008) but showing a general increasing trend partly due to a change in the way physicians were being registered. It is, however, not possible to ascertain how many are practising.[14] The number of GPs per 100 000 inhabitants (77.7) is below the EU average (94.3) but far from being the lowest in 2007.[15] The number of practising nurses per 100 000 inhabitants (678.3 in 2008) is below the EU average (830.0 in 2007), although a consistent increase has been registered over time (580.7 in 2002). The numbers above suggest that there may be an overall shortage of practising physicians notably GPs under the NHS although this is being mitigated by the GP training program which has been running for the past 4 years and increase substantially the number of specialists in family medicine awarded with specialist registration. The current available skill mix is, however, not necessarily detrimental to a more primary care oriented provision (which authorities wish to

[14] The only available year is 2009, with 303.9 practising physicians per 100 000 inhabitants (Eurostat).
[15] Data taken from the Eurostat database.

pursue). It is important that staff increases focus strongly on increasing primary care staff and also on improving its distribution, to ensure good access to primary care under the NHS and an effective referral system.

They are no quotas to limit staff supply and staff migration is being mitigated by the Foundation Programme and Specialists training programme for Medical Doctors in Malta which is working towards doctors to undergo their specialist training as much as possible in Malta. This has already showed positive signs towards greater retention of new doctors.

To emphasise primary care use there is a compulsory referral system from primary care to specialist doctors and GPs act like gatekeepers to specialist and hospital care. However, this system is very often bypassed by patients attending specialist health care directly in the private sector, one reason for this being the long waiting times to see a specialist in certain specialist areas in the public service. There is a large degree of choice of GP or specialist in the private sector. In addition, patients and/or their GP can indicate their specialist of choice to be referred in the public sector. Authorities plan to introduce a number of ICT solutions (e.g. individual electronic patient record) to support and render the referral system and care coordination more effective. This is being planned as part of a wider primary health care reform. Health centres are not well-equipped to deal with emergencies for 24 hours and 7 days a week. Consequently, the mainstay for treatment for emergencies, minor or major is directly at the accident and emergency department at Mater Dei Hospital. As a rule, patients consult more frequently GPs in the private sector than GPs in the public sector. However, not all GPs in the private sector are well equipped to deal with any sort of emergency, especially those requiring urgent investigations such as specific blood tests and radiography. Furthermore, shortages of GPs in the NHS still result in waiting times for primary care, which, combined with high patient expectations, has led to some excess and unnecessary use of NHS specialist and hospital emergency care or patients searching for private care.

The number of acute care beds per 100 000 inhabitants (275.9 in 2008) has decreased over time (383.9 in 1998). It is below the EU average (383.2 in 2008). This is because the new hospital which was launched in 2007 has a smaller acute bed capacity than the older one. However, it is also true that a substantial percentage of acute care beds in the older hospital were being occupied by social cases who could not be cared elsewhere. A number of wings with beds designated for long-term and elderly care have been opened over the past few years to offload the acute care hospital from long-term cases. However, with the prospects of an ageing population, the challenges of long-term care in the elderly are bound to persist. Government is committed to seek agreements with the private sector with respect to long-term and elderly care beds.

# 6. Purchasing, contracting and remuneration systems

GPs and specialists are paid on a salary basis when working for the NHS, while they receive a fee-for-service in the private sector. This dual practice, in conjunction with a fee-for-service in private provision and the presence of private insurance, could induce specialists to be more inefficient in the public area to increase demand for their private practice. The collective agreement with the Medical Association of Malta concluded by Government in 2007, which includes job plans for doctors in senior posts resulting in better pay per performance, is aimed at mitigating this challenge but there are no system of bonuses regarding activity or performance as such in the primary sector

Hospital remuneration is defined by the government on a prospective global budget basis but authorities plan to increase hospitals managers' decision making autonomy as an incentive to increase hospital efficiency.

Hospital activity, inpatient and day case discharges are much lower than the EU average (respectively 9512 vs. 16231 and 3578 vs. 6120 in 2008[16]), although hospital average length of stay is below the EU average (4.9 vs.7.9 days in 2008) and the proportion of day case surgery is relatively high at 27.4% in 2008 (EU average of 28.1% in 2007).[17] There is room to increase the volume of hospital activity and reduce the waiting times for elective surgery and this is being tackled inter alia with the provision of additional long-term care capacity in order to reduce the number of bed blockers.

**Pharmaceuticals**

While there is no direct product price regulation there is a tendering system to control the prices of NHS covered medicines and a cost/benefit analysis is conducted prior to include a medicine in the Government Formulary List. Authorities promote rational prescribing of physicians through treatment guidelines. Education and information campaigns on the prescription and use of medicines are also organised from time to time. Within the NHS prescribing is done by active ingredient and pharmacists dispense the products procured by the public system which may include generics. For private patients generic substitution is voluntary.

# 7. Information and monitoring, use of cost effectiveness and health promotion

As this analysis demonstrates there are still information gaps in a number of areas of physician and hospital activity and patient care utilisation (e.g. providers' clinical outcomes, appropriateness of processes, outputs, patient experiences and satisfaction). Regular monitoring and the use of data for contracting purposes or performance evaluation are limited. Authorities, however, recognise the importance of the use of comparable indicators for informed decision making and plan to use population surveys to monitor users' satisfaction with and quality of the services provided for example.

The use of health technology assessment is still limited for decision-making purposes (including the development of treatment guidelines or for defining the benefit package or the extent of reimbursement /cost-sharing of medicines). However, HTA requires scientific know how and administrative capacity which for a small country may represent a significant cost. Authorities are encouraging providers to set up patient care protocols to enhance safety and clinical outcomes.

The central government has set a number of relevant public health objectives strongly associated with the risk factors and pattern of mortality and disease identified in section 1. Priorities include, curbing smoking and alcohol consumption and the reduction of obesity through a national platform that promotes healthy diet and exercise. Authorities also see the education sector as an important partner through the inclusion of health promotion and disease prevention in school curricula and the training of health staff.

There is no data on total and public expenditure on prevention and public health services as a % of GDP and as a percentage of total current health expenditure. Vaccination rates appear to be below the EU average (72% vs. 96% in 2008) but show ups and downs. This apparently low vaccination rate is most probably due to vaccination in the private sector that goes unreported. Discussions have been held with the National Immunisation Committee to find ways of getting all vaccinations reported centrally. A breast cancer screening programme was launched towards the end of 2009 and will possibly and incrementally reduce the need for opportunistic breast cancer screening. Cervical cancer screening is only done opportunistically or on the advice of a healthcare professional.

[16] 2007 data for EU averages.
[17] Eurostat data.

Discussions are being held to expand the breast screening programme and to introduce both colorectal and cervical organised and population-based cancer screening programmes.

# 8. Challenges

The analysis shows that a number of reforms have been implemented in recent years notably to reduce waiting times for elective surgery and to establish public health priorities. The main challenges for the Maltese health care system are as follows:

- To continue to include more elements of activity related payment in primary care and specialist outpatient care to induce a higher number of consultations.
- To continue to enhance primary care provision by increasing the numbers and spatial distribution of GPs and nurses possibly by using private provision for the benefit of all NHS patients. To make the referral system more effective and improve care coordination. This can be helped through implementing the comprehensive e-agenda planned by authorities and by improving the integration/ coordination with the private sector to increase the availability of primary care services to help reducing waiting times for consultations with a GP/ family doctor and render the referral system more effective.
- To increase hospital inpatient and day case activity by perhaps considering an element of activity or performance related payment in hospital budgeting procedures and by increasing the supply of follow-up care for long-term care patients so as to reduce the unnecessary use of acute care settings for long-term care patients.
- To investigate if additional measures regarding price regulation, expenditure control, and good prescribing practices are needed to ensure a more cost-effective use of medicines.
- To improve data collection in some crucial areas such as expenditure, resources and care utilisation and improve the monitoring of activity in the sector. This should also include efforts to assess and publish evaluations of the quality of care provided and to increase the use of health technology assessment in decision-making.
- To increase responsibility of GPs and specialists by implementing a system of bonuses regarding their activity or performance as a means to encourage health promotion, disease prevention or disease management actions.
- To further enhance health promotion and disease prevention activities i.e. promoting healthy life styles and disease screening given the recent pattern of risk factors (diet, smoking, alcohol, obesity) in various settings (at work, in school).

# Statistical Annex - Malta[18]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 6.6 | 6.6 | 6.8 | 7.2 | 7.8 | 8.0 | 8.4 | 8.5 | 8.4 | 7.5 | 7.5 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 921 | 973 | 1095 | 1109 | 1270 | 1299 | 1400 | 1486 | 1528 | 1434 | 1430 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 4.6 | 4.6 | 4.9 | 5.2 | 5.8 | 6.0 | 6.1 | 6.5 | 6.4 | 5.8 | 5.8 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 642 | 678 | 789 | 801 | 944 | 974 | 1017 | 1137 | 1164 | 1109 | 1106 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 4.9 | 5.6 | 6.4 | 7.2 | 7.6 | 8.0 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 13700 | 14400 | 15900 | 15400 | 16300 | 16200 | 16700 | 17500 | 18200 | 19000 | 19100 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | : | : | : | : | 0.7 | 0.7 | 0.7 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | : | 0.5 | 0.7 | 1.0 | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | : | : | : | 2.5 | 2.7 | 3.2 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | : | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | : | : | : | 1.7 | 1.7 | 1.7 | 1.9 | 1.9 | 1.8 | 1.6 | 1.6 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | : | : | : | 0.8 | 0.8 | 0.8 | 1.1 | 1.1 | 1.0 | 1.1 | 1.0 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | : | : | 23.0 | : | : | : | : | : | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | : | : | : | : | 23.4 | : | : | : | : | : | 20.4 | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 6.5 | 6.5 | 5.8 | 5.8 | 5.9 | 5.2 | 5.2 | 5.3 | : | : | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 80.0 | 79.4 | 80.3 | 81.2 | 81.3 | 80.8 | 81.2 | 81.4 | 81.9 | 82.2 | 82.3 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | : | : | 65.7 | : | : | 70.1 | 69.2 | 70.6 | 71.9 | 62.3 | 61.6 |
| Life expectancy at birth males | 74.9 | 75.3 | 76.2 | 76.6 | 76.3 | 76.4 | 77.4 | 77.3 | 77.0 | 77.5 | 77.1 | 76.3 | 75.9 |
| Healthy life years at birth males | : | : | : | : | 65.1 | : | : | 68.5 | 68.1 | 68.9 | 68.7 | 61.5 | : |
| Infant mortality | 5.1 | 7.0 | 5.9 | 4.3 | 5.9 | 5.7 | 5.9 | 6.0 | 3.6 | 6.5 | 9.9 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 70.3 | 69.8 | 72.5 | 71.9 | 74.7 | 75.4 | 73.1 | 76.2 | 77.0 | 77.5 | 77.4 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 28.7 | 29.2 | 26.7 | 26.5 | 23.9 | 22.6 | 24.5 | 21.5 | 20.8 | 20.1 | 20.1 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | : | : | : | : | : | : | : | : | : | : | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | : | : | : | : | : | : | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | : | : | : | : | : | : | : | : | : | : | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | : | : | : | : | : | : | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | : | : | : | : | : | : | : | : | : | : | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | : | : | : | : | 580.7 | 582.9 | 592.1 | 579.0 | 591.2 | 619.1 | 678.3 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | 77.7 | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 383.9 | 380.9 | 369.7 | 351.5 | 347.6 | 338.6 | 298.3 | 278.8 | 283.2 | 268.6 | 275.9 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | : | : | 2.5 | 2.5 | 2.5 | 2.3 | 2.4 | 2.6 | 3.6 | 2.6 | 2.4 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | : | : | 6871 | : | : | 7337 | 9512 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | : | : | 3509 | 3461 | : | 3427 | 3578 | 6120 | 5031 |
| Hospital average length of stay | : | : | : | : | : | : | 5.4 | 5.4 | : | 4.8 | 4.9 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | : | : | 33.8 | 30.5 | : | 31.8 | 27.4 | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | : | : | : | : | : | : | : | : | : | : | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | : | : | : | : | : | : | : | : | : | : | : | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | : | : | : | : | : | : | : | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | : | : | : | : | : | : | : | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | : | : | : | : | : | : | : | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | : | : | : | : | : | : | : | : | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | : | : | : | : | : | : | : | : | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | : | : | : | : | : | : | : | : | 0.0 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 92.0 | 95.6 | 94.2 | 70.0 | 95.0 | 94.5 | 54.9 | 93.6 | 83.0 | 76.0 | 72.0 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | 32.0 | : | : | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[18] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# The Netherlands

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (33600 PPS in 2008) is well above the EU average (25075 PPS in 2008) up from 21800 in 1998. As a result of the global economic crisis, GDP growth was -4% in 2009 and unemployment reached 3.4% in the same year. The response to the crisis was to implement a fiscal stimulus package to limit economic contraction and to provide support to Dutch financial institutions. The economy shows signs of recovery with a forecasted economic growth of 1.3% in 2010 and 1.8% in 2011.[1] As a consequence of the crisis and the fiscal stimulus the country's budget deficit reached 5.3% of GDP in 2009 and is forecasted to reach 6.3% in 2010. Part of this stimulus included a €80 million in 2009 and €240 million in 2010 for health care infrastructure. Fiscal consolidation to bring government revenues and spending into line in the coming years may therefore have consequences for the health sector through consolidating current measures to further improve its efficiency. It could also put pressure on the government to better balance the right of the population to receive health care according to the latest state of science and technology on the one hand, and limiting the growth in health care costs to a sustainable rate on the other (for example through the use of HTA or by increasing the private share of financing). The sustainability package includes savings of 0.4% of GDP in the health sector.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (9.9% in 2008) is slightly above the EU average[3] (9.6% in 2008) but slightly below the EA average (10% in 2008). It has increased from 8.1% in 1998 but it is actually lower than that recorded in 2004.[4] Public expenditure on health as a percentage of GDP is the same as the EU average (7.4% in 2008), having increased from 5.2% in 1998. Total (3323 PPS in 2008) and public (2484 PPS) per capita expenditure is above the EU average (2381 PPS and 1826 PPS in 2008), having increased since 1998 (1759 PPS and 1128 PPS).

**The role of technology**

Total (1%) and public (0.6%) expenditure on pharmaceuticals as a percentage of GDP[5] was below the EU (and EA) average (respectively 1.5% and 1%) in 2002 although is it not possible to see if it has increased since then. This is similar for total (12% vs. 17.2% in 2002) and public (10.5% vs. 11.6% in 2002) pharmaceutical expenditure as a percentage of total current health expenditure. The low shares may be associated with a number of policies implemented in this area aimed at controlling costs. The number of MRI units and of CTS units per 100 000 inhabitants was 1.0 each in 2008 and the number of PET scanners per 100 000 inhabitants was 0.2 in 2008 all the same or below the respective EU average (0.65, 1.15 and 0.13 in 2008) and show only small increases, although time series data is limited.

**Health Status and healthy behaviour – life-styles – risk factors**

Life expectancy (82.5 years for women and 78.4 for men in 2008) is slightly above the EU average (82.2 and 75.8) and the EA average for men. Healthy life years (63.7 years for women and 65.7 for

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1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on expenditure is taken from OECD health data and Eurostat database.

3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 This is of course partly a denominator effect because of unfavourable economic conditions.

5 Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.

men in 2007) are also above the EU average.[6] Mortality by cancer including lung cancer (especially for males), breast cancer and prostate cancer is relatively high by OECD standards.[7] The authorities also recognise the issue of health inequalities between socio-economic groups as a policy priority.[8] Data shows an increase in the proportion of the population which is obese (from 8.4% in 1998 to 11.1% in 2008) although there has been a reduction in the share of the population that smokes regularly and in the consumption of alcohol.

## 2. Expenditure prospects: population ageing and future health status

Population is projected to increase by 200 000 from 2008 to 2060. Life expectancy is projected to increase by 7 years for women and 6.7 years for men. The share of the old (65+) is projected to increase by 12.5 pps and the share of the very old (80+) by 7.1 pps (less than the respective EU average change of 13 and 7.8 pps) from 2008 to 2060.

As a result of ageing[9], health care expenditure is projected to increase by 1.1 pps of GDP (below the average change in the EU of 1.7 pps). Good health (translated by a constant health scenario) reduces the projected expenditure increase by more than half (from 1 pps to 0.4 pps) highlighting the importance of improving health behaviour.

## 3. Health care coverage and expenditure

Since 2006, a mandatory universal health insurance scheme operated by private health insurance funds (for profit and not-for-profit) provides 100% population coverage, through contracts with providers. The basic (but comprehensive) insurance package is fixed by law. Health insurers set a nominal community-rated insurance premium corresponding to that package. All health insurers are obliged to accept all applicants and to charge each individual applicant the same nominal premium for the basic package of health services. For groups, premium may differ. Applicants are free to choose an insurer. To support choice of insurer and avoid patient selection, a risk-adjustment mechanism is operated by the State to adjust funding between insurers (based on age, gender, region, pharmaceutical cost groups and diagnosis cost groups). The State also pays for the nominal premium of children up to the age of 18 and the Health Insurance Income Support scheme provides means-tested subsidies to help those below a certain income threshold (about 70% of the households receive such a subsidy) to pay for their insurance premiums.[10] For these reasons, health insurance is classified as social health insurance in system of health accounts. Insurers are to compete on the nominal premium, on quality aspects of the basic package and on additional services not included in the basic package. The aim is to encourage insurers to negotiate with providers on prices, quantity and quality of services. Additional/ supplementary private insurance (to cover for the services and goods excluded from the benefit basket) can be purchased, but in such cases insurance companies can reject applications and the ban on premium differentiation does not

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6 Data on life expectancy and healthy life years is from the Eurostat database.

7 Mortality rates are based on the crude number of deaths according to selected causes in the WHO Mortality Database; they have been age-standardised to the 1980 OECD population, to remove variations arising from differences in age structures across countries and over time within each country (OECD Health at Glance 2009).

8 The fact that inequalities are recognised as a policy challenge says more about political preferences in the Netherlands than about the actual performance on this issue. For example, the differences in health care use and payments between different social economic classes are one of the lowest of the OECD.

9 I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).

10 The law on the health insurance income support scheme states that no household should pay more on their health care premiums paid to insurers than a fixed percentage of their income. Any costs for health insurance premiums above this percentage are compensated through the health care allowance. In 2011 approximately 70% will receive an allowance.

apply. The Dutch Healthcare Authority (NZa) supervises costs, prices, quality, contractual terms and market developments.

Despite the 2006 health reforms that introduced mandatory insurance, about 2% of the population was uninsured in 2008 (OECD health data). Two thirds of these individuals are immigrants, many from new EU Member States (ASISP 2009), perhaps because they lack information on the need to register with an insurance company or simply refuse to pay the mandatory premium. Latest estimates are 150000 uninsured or ~1.0% (CBS Statline), not to be confused with those others who default on payments – 320000. Health care providers have an obligation to provide care to the uninsured. The uninsured have to enrol with an insurer the moment they are in need of care and arrive at a health care provider. Those who default on payments are counted in the insured, so health care providers will receive payment from the insurer for care provided to these people. In 2010 the authorities have implemented regulation to allow the finding and insuring of the uninsured, and for collecting premiums for those who default on payments. There is a special fund for those who are illegal immigrants, paid for by the government out of general taxation.

In 2008, private health expenditure was about 17.9% of total health expenditure (excluding capital formation), below the EU average. Out-of-pocket expenditure[11] was 5.7% of total current health expenditure in 2008 and private health insurance constituted 6.2% of total current health expenditure in 2007.[12] Out-of-pocket payments apply to certain services but are limited. Eyeglasses, contact lenses and certain dental prostheses, for example, are not covered by mandatory insurance. In 2008, the government introduced an annual mandatory deductible of €150 for insured people 18 and over (€103 for those with chronic illnesses), which resulted in some increase in patients costs. GP services are exempted from the mandatory deductible, as a means to encourage primary care services vis-à-vis specialist consultations and hospital care, and stimulates primary to secondary care. Some services have recently been excluded from the basic package of care (e.g. special chairs, allergen-free mattress covers, medication for erectile malfunction, psychotherapy), while others have been added (e.g. methadone treatment and treatment of dyslexia for children). About 92% of the population buy supplementary private insurance. Although it is allowed to reinsure the mandatory deductible, this does not (yet) happen in practice.

In order to improve access and reduce the waiting time for hospital surgery, authorities have obliged providers to give information to an integrated central and nationwide information system on patients on a waiting list. This information can be used by insurers and their insurees to choose between hospitals. The publishing of this information is designed to encourage providers to increase activity and reduce waiting times. Data on patients' experience of care is published by the government, the insurers and NGOs. This improved information transparency has certainly contributed to reduce waiting times and lists, even though the major factor was most probably the implementation of pay-per-volume systems for most health care providers.

Therefore, the increase in public and total expenditure observed in the last decade could perhaps be partly explained by the efforts to increase population coverage and strengthen solidarity in financing. However, the measures to improve efficiency in health care provision have certainly helped controlling the growth in health expenditure (see further).

[11] Note that the €150 mandatory deductible is not included in the 5.7% out-of-pocket-payments. In 2010 the total amount of OOP caused by the mandatory deductible is nearly €1.5 billion. The actual amount of OOP is therefore higher than the 5.7% reported here.

[12] As a result, The Netherlands scores almost 6 out of 6 on the breadth of health insurance coverage and about 5.5 in the scope and depth of basic coverage according to the OECD scoreboard.

# 4. Collection, pooling and allocation of financial resources

In 2007, 81.4% of total health expenditure funding came from government sources (taxes at central level) plus social security contributions[13], 6% from out-of-pocket payments and 6.2% from private insurance.

The basic benefit package is based on clinical effectiveness, cost-effectiveness and affordability or budget impact. Insurance funds collect insurance premiums and a risk-equalisation scheme between insurance funds applies to all funds for the basic benefit package. Private and public authorities publish comparative standardised information on premiums, benefits, performance in claim processing and patient satisfaction. The annual switching rate between funds is about 4%. Information asymmetries, technical complexity and uncertainty as to future needs make switching between funds more difficult. In addition, four insurers account for about 90% of the market.[14] Whether this concentration in the insurance market reduces the expected benefits of competition between insurers is unclear. It may also increase the bargaining power of insurers over care providers and pharmaceutical companies which may lead to cost-savings.

Public (0.4%) and total (0.5%) expenditure on health administration and health insurance as a percentage of GDP is above the EU average (0.3% and 0.4% respectively in 2008), as is public and total expenditure on health administration and health insurance as a percentage of current health expenditure (4.5% vs. 3.1% and 5.5% vs. 4.4% in 2008). Besides the higher administrative costs inherent to social security type systems, the higher than average expenditure may also be explained by the efforts to supervise costs, prices, quality, contractual terms and market developments in the health market as well as ensuring risk-equalisation and prevent risk-selection, which are necessary in the context of competition in health insurance.[15]

The current healthcare system is open-ended, although the Parliament uses annual budget projections for public spending. The most influential decisions are taken at the start of the cabinet; in the (max. 4) years the cabinet is in power, adjustments are made to the path set out at the start. Note, though, that for some treatments the government still defines budgets and for other health care provision the government decides on the remuneration methods for providers or sets prices for treatments. Individual insurers have to determine resource allocation/ financing between sectors of care (primary care services, specialists outpatient care, hospitals current spending) and for private hospitals to decide on infrastructure and equipment. Since the healthcare system is open-ended total health expenditure may exceed the budget-projections.[16] Increasing health expenditures can be financed by increasing employer taxes and health insurance premiums, or by increasing cost-sharing mechanisms or by removing increased interventions from the basic benefit package.

# 5. Providers status, referral systems and patient choice

Provision is mostly private but publicly regulated. Primary care is provided by independent general practitioners (GPs), often working in private group practices.[17] Outpatient specialist care is provided in outpatient hospital departments. Almost all hospitals are non-profits while university hospitals are public. Providers have to establish contracts with health insurers.

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[13] Payment of contributions is based on a 50/50 rule. 50% is paid by nominal premiums and 50% is paid by income dependent taxes, mostly collected by the employer.

[14] The most recent NZa monitor on the insurance market gives ~87% (Zorgverzekeringsmarkt in cijfers, 2009 NZa).

[15] A system based on *"regulated"* competition inherently needs more regulatory capacity.

[16] According to the OECD, The Netherlands scores 2 out of 6 in the OECD scoreboard due to the not very stringent budget controls.

[17] There are also a not insignificant number of salaried GPs.

The number of licensed physicians per 100 000 inhabitants (384 in 2007) is below the EU average, showing a consistent increase since 1998 (293). The number of GPs per 100 000 inhabitants (52 in 2006) is below the EU average (92.2 in 2006) although it shows a modest but consistent increase (45 in 1998). The number of nurses per 100 000 inhabitants (873 in 2006) is above the EU average (821 in 2006) and has fluctuated throughout the decade. This fits with authorities' objective, in recent years, to increase the supply of staff. The numbers above suggest that the skill mix is improving in the direction of a more primary care oriented provision (which the authorities wish to continue to pursue). Staff supply is regulated: there are quotas for medical students and by specialty although there is no regulation in terms of physician location. Perhaps as a result there is some concentration of medical staff in some regions/areas and staff shortages in others. It seems to be no perception of shortages of GPs. There are approximately 52 GPs per 100 000 people[18], and both the number of GP visits and the percentage of patients referred to hospital-care seem low compared to other countries.

Authorities have made strong efforts to use primary care vis-à-vis specialist and hospital care. Residents have to register with a GP and there is a compulsory referral system from primary care to specialist doctors i.e. GPs act like gatekeepers to specialist and hospital care. In addition, GP services are free. Free choice of GP is allowed but given the number of GPs and their capacity constraints choice may be limited in some areas. Free choice of a specialist or hospital is also allowed.[19] Moreover, authorities have planned to introduce – or expand – a number of ICT and e-health solutions to allow for nationwide electronic exchange of medical data (e.g. e-prescribing or e-appointments), to support and render the referral system and care coordination more effective, reduce medical errors and increase cost-efficiency.

The number of acute care beds per 100 000 inhabitants (286.3 in 2008) has actually decreased over time (343.4 in 1998) remaining below the EU (and EA) average (383.2 in 2008). Hospitals have autonomy to recruit medical staff and other health professionals and their remuneration level although a pay scale is set at national level (i.e. norm-fees).

# 6. Purchasing, contracting and remuneration systems

GPs are paid a mix of a capitation (€52 per patient) and a consultation fee (€9).[20] Specialists are paid either a salary or a fee for service or a mix of the two. GPs are eligible to receive bonuses regarding their activity or performance; these bonuses may relate to all kinds of agreements between the insurer and the GP, e.g. the prescription of generics.

Hospitals are paid by a combination of fixed fees and budgets, set by the Dutch Healthcare Authority (NZa), and by fees negotiated by the hospital and the insurer. A 66%-part of prices are fixed and set by NZa, 34% is set through negotiations between insurers and hospitals. Hospital and mental healthcare fees are based on DRGs.[21] Hospital remuneration methods are defined by the government but for the free segment (34% in 2010) insurance funds negotiate with hospitals about fees, quality and volume.

When looking at hospital activity, inpatient discharges are lower than the EU average (respectively 10634 vs. 16231 in 2007) but are more than compensated by a very high number of day case discharges, which are significantly higher than the EU average (10324 vs. 6120 in 2007). The

[18] While a norm-practice of a GP consists of 2300 patients, which is 44 GPs per 100 000.

[19] Indeed, according to the OECD, the level of choice of provider in The Netherlands has a score of about 3 out of 6, while gatekeeping scores 6 out of 6.

[20] Note that there are also salaried GPs, most of them working for another GP.

[21] The OECD score for remuneration incentives to raise the volume of care in The Netherlands is therefore about 3.5 out of 6 as a result of the mix remuneration systems for physicians and hospitals.

proportion of surgical procedures conducted as day cases (49.3%) is considerably higher than the EU average (28.1% in 2007). Hospital average length of stay (6.4 days in 2007) is below the EU average (8 days). All these figures point to a high hospital throughput and high hospital efficiency.

**Pharmaceuticals**

Since the 1980s, the authorities have implemented a number of policies to control expenditure on pharmaceuticals. Although pricing is free there is a maximum price[22] set for each product with a given active substance, strength and formulation which is based on the prices of medicines in four reference countries (BE, DE, UK and FR), and yearly (since 2004) price negotiations between the Ministry of Health, Welfare and Sport, pharmacists and producers of generics. Insurers can negotiate with pharmaceutical companies to obtain discounts and rebates. Price freezes and cuts are measures to control expenditure directly.

The authorities also apply reference pricing,[23] whereby the maximum reimbursement level of a medicine is a weighted average price of the products in each cluster of products that a medicine belongs to, using 1999 prices. New products introduced after 1999 can get a premium price if the manufacturer demonstrates cost-effective added value, and the price of this new product becomes the maximum reimbursement level for all the products that followed and are added to the initial drug to form a cluster. Clusters of pharmaceuticals define "therapeutic equivalents", where pharmaceuticals are equivalent if they have comparable clinical characteristics, a more or less similar indication, route of administration, targeted age group and for which no clinically relevant differences in income apply. Only pharmaceuticals included in GVS are covered by basic health insurance – even though reimbursement may sometimes be obtained through complementary voluntary health insurance. There is a positive list of reimbursed products which is based on health technology assessment information.[24]

The authorities promote rational prescribing of physicians through treatment guidelines complemented with monitoring of prescribing behaviour. They also promote education and information campaigns on the prescription and use of medicines and regional platforms of physicians and pharmacists exist to discuss the use of medicines and improve its effective use. Some insurers have started to offer financial incentives to GPs based on efficient prescription of some drugs. Prescribing is done by active ingredient as part of medical training. A number of insurers initiated a policy of selective contracting of generic medicines; as of the 1st of July 2008, these insurers reimburse only the cheapest generic product (more precisely, those that are at the same price level as the cheapest pharmaceutical plus 5%) within a number of big-selling therapeutic classes. Producers of generics responded by substantially lowering their generic list prices. Insurers and their enrollees benefit from the system, but pharmacists may lose some revenues as a result of diminishing discounts and rebates provided by generic producers.

As a result of these policies, the average prices of prescription medication have dropped dramatically (by 8% between 2007 and 2008 and 50% for generic medication). However, the total expenditure on pharmaceuticals is still rising, which is mainly due to the increasing consumption of expensive pharmaceuticals.

[22] The system was laid down in the Pricing Act of 1996.

[23] The reference pricing system, introduced in 1993, is called the Medicine Reimbursement System (GVS).

[24] Note that free choice is not excluded; if patients opt for a more expensive pharmaceutical in the same group, they have to pay the excess themselves, except if the physician decides that the more expensive one is clinically relevant for that particular individual case.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Comprehensive data exists, which enables information on physician and hospital activity and quality and patient care utilisation to be published. This information is used by insurers and patients to choose providers and by providers to improve their own activity. Surveys are conducted on patient's experience and satisfaction with the care provided. A general health care sector performance report is published on a regular basis using a comprehensive set of indicators.

The National Institute for Health Research and the Health Care Insurance Board (CVZ) conduct and gather information on health technology assessment (HTA). Based on this HTA, the CVZ advises the central government on what should be covered under the basic benefit package of care and the extent of reimbursement /cost-sharing in the system. It is used to determine the reimbursement of medicines and applied to new high-tech equipment, while prices are mainly set by the healthcare authority (NZa). The HTA helps defining clinical guidelines which are compulsory and to meet with effective monitoring of compliance. The ultimate decision on what should, and what should not be covered in the basic package is made by the central government. The central role of specialists in the absorption of treatment into the basic package should not be left unmentioned. New treatments or methods of diagnosis-setting adopted by medical specialists are more or less automatically covered in the basic package, since the basic package covers health care "according to the latest developments in science and technology". Only after CVZ research shows that some methods or treatments are (cost-)ineffective the CVZ may advise that type of treatment to be removed from the basic package.

The central government has set a number of relevant public health objectives (given the risk factors highlighted in section 1), set in terms of processes and the reduction of health inequalities. Authorities have strongly emphasised health promotion and disease prevention measures over the years, which can be seen by an average public and higher than average total expenditure on prevention and public health services as a % of GDP (0.2% vs. 0.2% and 0.4% vs. 0.3% in 2008) and more than average public and total expenditure as a % of total current health expenditure (5.9% vs. 2.7% and 2.4% vs. 2.1% in 2008). Vaccination rates are about the EU average (96% in 2007) though showing a decrease since 1998 and 2005. Screening rates for cervical and breast cancer are relatively high (respectively 69.6% and 81.9% of the target population in 2005). Promotion and prevention are seen by authorities as a means to ensure long-term sustainability of the health budget.

# 8. Challenges

The analysis above shows that a wide range of reforms have been implemented over the years, to a large extent successfully (e.g. the policies to control pharmaceutical expenditure; to strengthen primary care; to reduce hospital use; to improve data collection and monitoring; and, to improve life-styles), and which The Netherlands should continue to pursue. The challenges for the Dutch health care system are as follows:[25]

- Looking at OECD data, Dutch health care seems to be relatively low in volume and high in price compared to other countries (even when taking in mind the relatively high growth in volume since the early 2000 when the Netherlands started paying most providers for volume

[25] The OECD overall efficiency score for The Netherlands is below its group average (2.6 years can be gain through greater efficiency in the sector compared to the group average of 2.1 years) and slightly below the OECD average. Areas for improvement include: ensuring that competitive pressures in the insurance market are strong enough; further improving the output of hospital care (inpatient and day case); considering a stronger incentives for increasing hospital activity.

– through a DRG-type system). According to the OECD data the main challenge therefore seems to be the price, not volumes.[26]

- To control health care expenditure by making efficiency gains realised at the micro-level of providers, contribute to lowering total health expenditure at the macro level.
- To continue to enhance primary care provision by ensuring the number and the spatial distribution of GPs and nurses; and in particular by improving their roles in care coordination, especially for the chronically ill.
- To find a balance between possible economies of scale and consumer choice between providers and insurers. Possible economies of scale exist in health care provision and insurance; how do we balance these economies of scale with the need for sufficient user choice between providers/insurers, so that providers/insurers will also in the long-run optimise the mix between quality and costs.
- To avoid that the non-coverage of a number of individuals results in higher costs, if those overuse belated and more expensive emergency care.
- To ensure that the gains expected to be achieved through competition between insurers as well as providers outweigh the administrative costs associated with the need to monitor and regulate many different dimensions of the health care market.
    - While The Netherlands have the institutional capacity and experience to monitor markets, the new health care market has posed an additional administrative burden on those institutions.
    - In addition, while the incentive to increase efficiency in the context of insurers' competition partly comes from the threat of consumers changing insurance company when not satisfied, changing rates have been low (and lower than in other countries which a similar insurance setting). Several barriers may arise: the amount of information needed for an informed change may be too high for users to digest, and there may be other important switching costs. The mere lack of switching benefits may also be a barrier. Indeed, a fierce price competition seems to be in place between insurers – with small or even negative profit rates – leading to low differences in price between them.
    - In addition, the number of insurers has reduced significantly since the reform and 4 insurers hold about 90% of the market, which may be the opposite to the image of insurance competition one would hold. However, this may be the result of the need for insurers to have greater bargaining power over providers. A balance between bargaining power on the one hand and user choice between insurers on the other hand, is important.

[26] Although one should keep in mind that splitting health care costs into volume and price is extremely difficult.

# Statistical Annex - Netherlands[27]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 8.1 | 8.1 | 8.0 | 8.3 | 8.9 | 9.8 | 10.0 | 9.8 | 9.7 | 9.7 | 9.9 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1759 | 1884 | 2036 | 2194 | 2421 | 2620 | 2788 | 2890 | 3008 | 3196 | 3323 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 5.2 | 5.1 | 5.0 | 5.2 | 5.5 | 5.8 | 5.8 | 5.9 | 7.4 | 7.3 | 7.4 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 1128 | 1182 | 1283 | 1378 | 1513 | 1555 | 1622 | 1735 | 2290 | 2402 | 2484 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 4.9 | 5.3 | 5.6 | 5.8 | 5.9 | 5.8 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 21800 | 23300 | 25600 | 26400 | 27300 | 26800 | 28000 | 29400 | 31000 | 32900 | 33600 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | : | : | 0.6 | 0.7 | 0.8 | 0.8 | 1.0 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | 0.7 | 1.0 | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | : | 0.7 | 0.8 | 0.8 | 0.8 | 1.0 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | 0.1 | : | 0.2 | 0.2 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 | : | : | : | : | : | : | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | : | : | : | : | : | : | 1.0 | 1.0 |
| Proportion of the population that is obese | 8.4 | 8.7 | 9.4 | 9.3 | 9.7 | 10.7 | 10.9 | 10.7 | 11.3 | 11.2 | 11.1 | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 35.0 | 34.0 | 32.0 | 34.0 | 34.0 | 32.0 | 31.0 | 31.0 | 31.0 | 29.0 | 28.0 | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 9.9 | 10.1 | 10.1 | 10.0 | 9.8 | 9.7 | 9.6 | 9.6 | 9.6 | 9.6 | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 80.8 | 80.5 | 80.7 | 80.8 | 80.7 | 81.0 | 81.5 | 81.7 | 82.0 | 82.5 | 82.5 | 82.3 | 82.3 |
| Healthy life years at birth females | 61.1 | 61.4 | 60.2 | 59.4 | 59.3 | 58.8 | : | 63.1 | 63.2 | 63.7 | 59.8 | 62.3 | 61.6 |
| Life expectancy at birth males | 75.2 | 75.4 | 75.6 | 75.8 | 76.0 | 76.3 | 76.9 | 77.3 | 77.7 | 78.1 | 78.4 | 76.3 | 75.9 |
| Healthy life years at birth males | 61.9 | 61.6 | 61.4 | 61.9 | 61.7 | 61.7 | : | 65.0 | 65.0 | 65.7 | 62.4 | 61.5 | : |
| Infant mortality | 5.2 | 5.2 | 5.1 | 5.4 | 5.0 | 4.8 | 4.4 | 4.9 | 4.4 | 4.1 | 3.8 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 98.4 | 98.1 | 97.6 | 98.1 | 98.0 | 97.9 | 97.9 | 97.9 | 98.5 | 98.6 | 98.8 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 64.1 | 62.7 | 63.1 | 62.8 | 62.5 | 65.4 | 64.5 | 64.9 | 82.3 | 82.0 | 82.1 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 8.4 | 9.0 | 9.0 | 8.7 | 8.0 | 7.3 | 7.2 | 7.1 | 5.6 | 5.5 | 5.7 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | 5.4 | 5.3 | 5.1 | 4.8 | 4.5 | 5.6 | 5.6 | 5.8 | 5.7 | 5.6 | 5.5 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | 3.0 | 2.9 | 2.7 | 2.4 | 2.2 | 3.2 | 3.3 | 3.3 | 4.6 | 4.6 | 4.5 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 48.6 | 50.3 | 51.5 | 52.8 | 53.8 | 54.4 | 55.2 | 55.8 | 56.3 | 56.7 | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 187.3 | 192.4 | : | : | : | : | : | : | : | : | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | : | : | : | : | 830.8 | : | 947.7 | 899.8 | 872.9 | : | : | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 45.0 | 45.5 | 45.5 | 45.5 | 45.6 | 45.6 | 46.1 | 46.4 | 52.0 | 53.0 | 54.0 | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 343.4 | 337.7 | 325.0 | 308.5 | 318.6 | 313.7 | 311.7 | 306.2 | 304.4 | 289.4 | 286.3 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 5.6 | 5.8 | 5.9 | 5.8 | 5.6 | 5.5 | 5.3 | 5.4 | 5.6 | 5.7 | 5.9 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | 9088 | 9408 | 9876 | 10135 | 10397 | 10634 | 10953 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | 6854 | 7493 | 8269 | 8817 | 9602 | 10324 | 10987 | 6120 | 5031 |
| Hospital average length of stay | : | : | : | : | 8.0 | 7.6 | 7.2 | 6.9 | 6.7 | 6.4 | 6.2 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | 43.0 | 44.3 | 45.6 | 46.5 | 48.0 | 49.3 | 50.1 | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | 197.6 | 215.6 | 237.8 | 255.9 | 277.7 | : | : | : | : | : | : | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 118.2 | 127.8 | 138.4 | 148.8 | 158.3 | : | : | : | : | : | : | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | 11.8 | 12.0 | 12.3 | 12.2 | 12.0 | : | : | : | : | : | : | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 7.0 | 7.1 | 7.2 | 7.1 | 6.9 | : | : | : | : | : | : | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.4 | 0.5 | 0.5 | 0.4 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | 5.3 | 5.3 | 5.4 | 5.3 | 5.3 | 5.3 | 4.9 | 4.7 | 5.0 | 5.1 | 4.9 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | 2.6 | 2.6 | 2.5 | 2.4 | 2.4 | 2.7 | 2.4 | 2.4 | 2.5 | 2.6 | 2.4 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 97.0 | 97.0 | 97.0 | 97.0 | 97.5 | 98.0 | 97.8 | 97.8 | : | 96.3 | : | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | 66.9 | 67.1 | 66.4 | 68.8 | 68.9 | 69.6 | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | 78.7 | 78.8 | 78.8 | 80.4 | 81.7 | 81.9 | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[27] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Austria

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

Austrian GDP per capita has been among the highest in the European Union over the last decades and in 2008 amounted to 30900 PPS, compared to the EU average of 25075 PPS. The global financial and economic crisis has pushed the Austrian economy into the deepest recession for decades with economic growth slowing down from 3.5% in 2007 to 2.0% in 2008 and -3.6% in 2009. However, slow but steady recovery is expected to start already in 2010, with growth turning positive (1.3%), and keep accelerating (1.6%) in 2011.[1] As a consequence of the crisis and the fiscal stimulus, the budget deficit reached 2.4% of GDP in 2009 and is forecasted to reach 3.6% in 2010 and 2011. Fiscal consolidation to bring government revenues and spending into line in the coming years may therefore have some consequences for the health sector through consolidating current measures to improve its efficiency.

**Recent trends of expenditure**

Total expenditure on health[2] is one of the highest in the EU: 10.5% of GDP in 2008. However, it is has remained pretty constant over the last decade (10% in 1998). This is above the EU average[3] of 9.6% in 2008. Public expenditure on health amounted to 8.1% of GDP in 2008, putting Austria on the high end of the European spectrum, above the EU average of 7.4%. When measured in per capita terms, in 2008 Austria had the second highest total expenditure (3246 PPS vs. the EU average of 2381) and public spending (2496 PPS vs. 1826 PPS).

**The role of technology**

The Austrian health care sector is equipped significantly better than the other European countries in diagnostic and therapeutic units. In 2008, the density of MRI units (1.8), CTS units (3), PET scanners (0.2) and angiography units (0.9 in 2007) per 100000 inhabitants were all well above the EU averages of 0.65, 1.15, 0.13 and 0.62 respectively.

Expenditure on pharmaceuticals[4] is below the EU average both when measured as % of GDP (1.4% vs. 1.5% in 2008), and when calculated as percentage of total current health expenditure (14.1% vs. 16.9% in 2008).

**Health status and healthy behaviour – life-styles – risk factors**

The Austrian population lives longer than the average EU citizens: life expectancy of both women (83.3 years) and men (77.8 years) were higher than the EU averages of 82.2 and 75.8 years in 2008.[5] Healthy life years are, however, below the average, at 59.5 years for women (compared to 62.3 years in the EU) and 58 years for men (compared to 61.5 years in the EU). Infant mortality of 3.7‰ (2008) is below the EU average of 4.3‰. As in most other European countries, in Austria non-communicable diseases are the leading causes of morbidity and mortality. Cardiovascular diseases account for almost half of the deaths, which is one of the highest mortality rates for this cause in Western Europe, even though it has dropped by a quarter since 1990. Ischaemic heart

1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on expenditure is taken from OECD health data and Eurostat database.

3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.

5 Data on life expectancy and healthy life years is from the Eurostat database.

disease is the single biggest killer, especially for women older than 64 years. Cancer mortality is at relatively low level for men, while at average level for women.[6]

In terms of lifestyle-related risk factors, Austria can be classified in the middle of the EU countries. While percentage of obese population (12.4% in 2006), and percentage of regular smokers (23.2% in 2006) are slightly lower than on average in the EU (14.5% and 24.6% respectively), alcohol consumption (12.5 litres per capita in 2008) is somewhat higher than the corresponding figure for the EU (10.6 litres). Traditionally, the provisions of social insurance law were strongly oriented towards a curative approach, but a series of legislative initiatives have been set up in the last decade, in order to enhance the approach to health promotion and prevention.[7] The data – and the projections hereafter – suggest that the authorities could continue their efforts to improve population life-styles.

## 2. Expenditure prospects: population ageing and future health status

The Austrian population is projected to increase by 1 300 000 from 2008 to 2060 (to 9 million). Life expectancy is projected to grow by 7.5 years for men and 6.3 for women, i.e. somewhat slower than on average in the EU (8.5 and 6.9 years respectively). Austria is expected to be affected by the ageing process to a degree comparable with the other European countries. The share of the old population (65+) is expected to increase by 12.1 pps (from 16.9% to 29%) from 2008 to 2060 and the share of the very old (80+) by 6.9 pps (from 4.5% to 11.4%), slightly below the respective EU average change of 13 pps and 7.8 pps.

As a result of ageing[8], health care expenditure is projected to increase by 1.7 pps of GDP (i.e. the same as the average change in the EU). Good health (translated by a constant health scenario) could reduce the projected expenditure increase to 0.7 pps, highlighting the importance of improving health behaviour.

## 3. Health care coverage and expenditure

The Austrian health care system has a complex structure based on the federalist structure of the Austrian state. The regulatory responsibility for the health care sector lies with the federal government, with the exception of the system of hospitals. Concerning the latter, the Federal Republic enacts only basic laws, while their implementation and enforcement is under the responsibility of the federal provinces (Länder). Social insurance providers are supposed to be self-governing bodies, which implies that they have important regulatory functions, especially in respect of outpatient health services.[9]

About 98.7% of the Austrian population are covered by the social health insurance, organised as a compulsory insurance for people in gainful employment. The insurance contribution covers also dependent members of the family (their share amounts to about one third of the total number covered by the statutory health insurance), while the persons without insurance may have access to the health care system via means-tested social insurance.

Health care insurance is provided by a number of health insurance funds. They are decentralised institutions, based on the self-management model. The Central Association of Social-Insurance

[6] WHO Europe (2006); Highlights on health in Austria 2004.

[7] See for instance the Health Promotion Act of 1998, which established the Healthy Austria Fund, and the adoption in 2005 of the "New Preventive Check-up".

[8] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf).

[9] See also Austria – asisp Annual Report 2009.

Institutions coordinates the management of the specific institutions. Insured individuals do not have free choice of health insurance fund. They are assigned a given fund according to the region in which they live or occupational group (e.g. salary and wage earners, farmers, civil servants, specific funds for miners, railway employees etc.) they belong to. Given that the coverage of individual funds is clearly specified, and the funds cannot choose their members according to risk selection or any other criterion, there is no competition between them. However, individual institutions have a large degree of freedom in establishing their administrative procedures.

The benefits guaranteed by the social health insurance system include both in kind and cash benefits and do not depend on the level of contributions. Further, all health insurance funds are supposed to provide all necessary services. Still, the bundle of "necessary services" is not explicitly defined by law, which may lead to some variations between the funds.

Since an individual person has no right to opt out from the statutory insurance, private health insurance serves as a supplement to the former and covers additional costs for treatment in private hospitals – or due to better accommodation – or it serves as an insurance for daily benefits

Private expenditure (patient co-financing and voluntary private health insurance) represented around 23.1% of the total health expenditure in 2008, i.e. the lowest percentage since 1998 (24%), though it has been ranging between 23.1 and 24.8% throughout the decade. It is slightly above the EU average of 22.7% in 2008. Out-of-pocket spending accounts for 15.1% of total health spending (slightly above the EU average of 14.4% in 2008) and has registered a small reduction since 1998 (15.4%) – though it had first increased until 2003.[10] The share of private health insurance expenditure amounted to 4.6% in 2007. The respective shares of public and private expenditure in the total health expenditure, as well as the specific out-of-pocket part, have remained quite constant over the last decade.[11] Still, we have mentioned that total expenditure on health is one of the highest in the EU.

# 4. Collection, pooling and allocation of financial resources

The Austrian health system is financed from a mix of sources. In 2008 almost 76.9% of expenditure was public, while 23.1% came from private sources. As for public spending, about 60% come from health insurance contributions, while about 40% is financed from taxes, mainly general tax revenue; these proportions have remained pretty stable.

Mandatory health insurance is based on mandatory contributions paid by all employed people. The contributions amount to 15.3% of the contribution basis (generally wage), equally divided into two parts of 7.65% paid by employer and employee respectively. A statutory 'maximum contribution basis' puts a ceiling on the wages used for the calculation of the contributions. In 2010 this ceiling amounts to 4110 EUR. The contributions are collected and administered directly by the health insurance funds.

Tax revenue is primarily used in inpatient care in public hospitals. The financing of acute hospital care is partially budgeted and is carried out according to performance-related criteria within the framework of yearly budget. The Länder, which are owners of the hospitals, cover not only investment and maintenance costs, but also contribute to the current expenditure of the hospitals.

[10] Note that since 2008, prescription charges are limited to 2% of the income for patients suffering from chronic diseases.

[11] As a result, Austria scores about 6 out of 6 on the breadth, 6 in the scope and around 5.5 on the depth of basic coverage according to the OECD scoreboard.

As mentioned earlier, the Austrian health system has a complex structure based on the federalist structure of the Austrian state, with a multitude of relevant decision makers.[12] Nevertheless, the level of expenditure in administering such a complex system remains about the EU average.[13] Public (0.2%) and total (0.4%) expenditure on health administration and health insurance as a percentage of GDP is slightly below or about the EU average (0.3% and 0.4% respectively in 2008), while public and total expenditure on health administration and health insurance as a percentage of current health expenditure are both below the EU average (2.3% and 3.7% vs. 3.1% and 4.4% in 2008).

Austria does not impose a constraint on public spending on health via the budget process.[14] The finances for public health expenditure – mainly via the social insurance system – are raised and used in a decentralized manner; they are not subject to any budget-setting process *sensu stricto*, but rather result from the health insurance funds' obligation to ensure that services are in accordance with the current provisions of social insurance law.[15] Nevertheless, the health expenditure has remained stable over the last decade, as seen in section 1.

# 5. Providers status, referral systems and patient choice

Patients who are insured in the mandatory social health insurance system, as well as their family members, are provided with E-Cards being certificates of entitlement to health services. For each accounting period, which is usually 1 or 3 months depending on the insurance fund, a patient can choose one general practitioner (GP) and one specialist by means of his/her personal E-Card, which has replaced the former health vouchers. For the issue of an E-Card, a lump sum deductible is paid. He can also switch the contract physician with the agreement of the health insurance fund.[16]

The large share of primary care is provided by self-employed physicians who predominantly work in individual practices. Patients have also direct access to outpatient clinics which are run by both the social health insurance schemes and by private individuals. Outpatient care is mostly based on contractual relationships between individual private providers and insurance funds, but a growing share of patients have recently opted for outpatient departments of publicly run hospitals.

Hence, private practices are run by self-employed physicians, about half of which are general practitioners and half specialists. The number and regional distribution of self-employed physicians is specified in the "location plan" drawn up by the health insurance funds and the physicians' associations in order to avoid imbalances in the provision of care.

Only around 43% of physicians in private practice have a contract with one or more health insurance fund. They exercise to some extent a gatekeeper function as they can control patients' flows by referrals. This is the case when several physicians are consulted in one accounting period or when hospital treatment is required. The other 57% not contracted private physicians do not require E-card intervention and mostly apply much higher fees, whereas their services are reimbursed for four fifths of the fee which the health insurance funds would pay for a "contracted physician".

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[12] Irrespective of the reforms of 2005 (The 2005 Health Reform), which were aimed at improving integrated planning by the introduction of a Federal Health Agency, a Federal Health Commission and a Structural Healthcare Plan at the national level and of State Health Funds and Health Platforms at the Länder level (Austria, asisp Annual Report 2009).

[13] Of course, we have to take into account the important share of the health expenditure as a % of GDP, and the GDP per capita itself.

[14] As a consequence, Austria scores 0 out of 6 in the OECD scoreboard due to the soft budget constraint.

[15] See Hofmarcher M M, Rack H-M. Austria: Health system review. *Health Systems in Transition*, 2006; 8(3):1-247.

[16] According to the OECD, the level of choice of provider in Austria has a score of 2.7 out of 6, while gatekeeping still scores 0 out of 6.

The number of practising physicians per 100 000 inhabitants (374 in 2007) is above the EU average (324 in 2007) and showing a consistent increase since 1998 (306). The number of GPs per 100 000 inhabitants (153 in 2008) is above the EU average (95.4 the same year), and showing an increase from 1998. The number of nurses per 100 000 inhabitants (774 in 2008) is below the EU average (879) having only slightly increased throughout the decade. The numbers above may suggest that the skill mix is right in the direction of a primary care oriented provision. Still, there have been concerns about inequalities in the supply structure between the Länder and also between urban and rural areas. In addition, staff issues may be reinforced by the fact that as many as 65.9% of all physicians were more than 45 years old in 2007 and many will retire in less than 10 to 15 years. These elements suggest that a comprehensive human resources strategy may be necessary in order to ensure that the skill mix stays in favour of a primary care oriented provision – without excessive recourse to it – and face regional disparities and staff ageing.

Hospital care is, according to the law, the responsibility of the state. As such, inpatient care is predominantly provided by the public entities. A minor share is also organised by the private non-profit-making providers, who operate according to the public law and by private profit-making hospitals.[17] Hospitals which are subject to public law are obliged to admit and provide services to all patients, but are entitled to receive state subsidies for their day-to-day operations. On the contrary, private for-profit providers have the right to refuse patients, but must finance their operations on their own.

The management structure of the hospital sector changed considerably over the first half of the decade of 2000s, as public hospitals have been assigned operating companies which act according to the private law. A similar change has taken place in the case of private non-profit making companies.

The empirical data suggest the overutilization of the hospital care in Austria. The number of available acute care beds (562.2 per 100 000 inhabitants in 2008), although somewhat lower than a decade before (635.2 per 100000 in 1998) is 50% higher than the respective amount in the European Union (383.2). At the same time, even if the length of stay of 8.9 days is one day longer than the EU average in 2008, the number of inpatient discharges per 100 000 inhabitants (27539) is the highest in the EU, more than 50% higher than the EU average of 18081. This observation stays in line with the lower than average number of daycase discharges (4727 in Austria vs. 5828 in the EU in 2006). Sectoral fragmentation, which also creates the bias towards hospital care, is a long standing weakness of the Austrian health care system. Therefore, it seems essential to improve the cost efficiency of the hospital care, by reducing the number of beds and replacing acute care stays with day-case treatments.

# 6. Purchasing, contracting and remuneration systems

The physicians who operate their private outpatient practice are reimbursed by the insurance funds according to a mixed fee system, which combines lump-sum payment for basic services with fee-for-service for more complex treatments. The level and structure of payment is established in regular negotiations between health insurance funds and the physicians' chambers and varies heavily across funds and specialties. In practice, specialists who execute more complicated or technical tasks (in the areas such as radiology or laboratory analysis) are paid almost exclusively according to a fee-for-service scheme (lump-sum payments account for about 34% of an average specialist remuneration), while general practitioners receive proportionately more often flat rate

[17] 72.5% of acute care beds are in publicly owned hospitals, 18.8% in not-for-profit privately owned hospitals and 8.7% in for-profit ones.

payments per basic case, which are accompanied by basic practice allowances and fees for home visits.

The level of the flat rate fees for basic services varies according to specialty and Land. In some Länder, in order to distribute the general budget more equally among the physicians, it is calculated on a decreasing scale, depending on the number of E-Card certificates invoiced per provider and per accounting period.

A small number of specialists work exclusively in hospitals and are paid salaries, which vary across the Länder. They can also treat private patients in public hospitals and earn additional incomes from these practices.

Hospitals are paid differently depending on the type of expenditure. Investment and capital costs are borne by the owners and operating companies. The ongoing operating costs are estimated prospectively based on the modified, performance-oriented diagnosis-related groups (DRGs). The units of calculation are points, whose value is established retrospectively at the level of the Land by dividing the fixed budget by the number of points performed during the accounting period. In the DRG system two types of payments exist: the nationally uniform DRG core area and the DRG fund control area, which can vary according to the Land.

In the core area, procedure- and diagnosis-oriented case groups form the basis for awarding points for an inpatient stay. A nationally uniform number of points is allocated for stays in a number of selected specialised units (intensive care, geriatric care, psychiatric day care, etc.), while special rules apply for stays which are longer or shorter than the predefined bounds. Financing in the fund control area can be modified by the individual Länder, which gives them an opportunity to take into account different structural criteria (e.g. hospital type, staff, equipment, state of hospital buildings, utilisation of capacities, quality of accommodation, etc.) when distributing financial resources among the hospitals.

The performance-related hospital financing DRG system was introduced in 1997. The main effect of this measure was a shortening of ALOS, but also increased hospitalisations and a shift towards high scoring diagnoses.[18]

**Pharmaceuticals**

Austria applies international price reference system when establishing maximum price for reimbursed pharmaceuticals. The price of drugs, taking into account ex-factory and wholesale price level, is included in the Reimbursement Code – or "EKO", in place since 2005 – and cannot be higher than the EU average price, as established by the Pricing Committee.

All reimbursable pharmaceuticals are explicitly listed in a list annexed to the Austrian Social Insurance Law. The cost-sharing mechanism takes the form of a flat rate fee paid for each prescription by all patients, apart from socially disadvantaged people (elderly pensioners with an income below a certain threshold, persons with communicable diseases) who are exempted. Patients pay out-of-pocket for over-the-counter and non-reimbursable pharmaceuticals, but in some precisely determined circumstances, they can apply for individual reimbursement, which requires an ex-ante approval of their physician. There are no limits to out-of-pocket co-payments.

The cost-efficiency of pharmaceutical prescriptions is addressed by the Economic Guidelines published by the Austrian Federation of Social Health Insurance Institutions in 2004. These guidelines encourage doctors to prescribe the most economical pharmaceutical out of several

[18] As a result, the OECD score for remuneration incentives to raise the volume of care in Austria is 3 out of 6.

therapeutically similar alternatives. Under the guidelines established by the reimbursement code (EKO), doctors are encouraged to give preference to pharmaceuticals listed in the "green box" of the EKO, which contains three of the cheapest generic options available.[19] Health funds also monitor the prescribing patterns of GPs and specialists who are under contract with them, and provide them with information leaflets and newsletters.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Strategies to steer the cost-effective use of health technologies have become a public issue only recently. The evaluation of health technologies as an instrument to support or to control their dissemination and use or to help define policies is not institutionalised yet, but increasingly referred to by he public health insurances and hospitals. Only one academic institution is carrying out full Health Technology Assessments: the Institute of Technology Assessment at the Austrian Academy of Sciences. At the same time, within the reimbursement institutions small units carrying out "rapid" evaluations with the perspective of their institution (health insurances, hospitals) are increasingly implemented. Health Technology Assessment as an instrument for health technology regulation is nowadays often being used: for coverage and fee-setting in the private practices of the outpatient sector; to establish a positive list of the pharmaceuticals that are covered by the public health insurance scheme; as a controlling instrument in hospitals for obvious inefficient practice styles; as planning or reimbursement tool for new surgical interventions; by the medical community for professional training and education. In general, public policy is not yet aware of the potential of evaluative research, although some decision makers are becoming increasingly conscious of assessments as policy instruments.

As section 1 suggests, there may be some risk factors that could translate into an important burden of disease and financial costs. This is why the authorities have emphasised somewhat health promotion and disease prevention measures in very recent years. Currently, public and total expenditure on prevention and public health services as a % of GDP (0.2% and 0.2% in 2008) are respectively the same as and slightly below the EU average (0.2% and 0.3% in 2008). However, as a % of total current health expenditure, both public and total expenditure on prevention and public health services are well below the EU average (1.6% vs. 2.1% and 1.8% vs. 2.7% in 2008). Vaccination rates are also quite low, and far below the EU average (83% vs. 96% in 2008), while screening rates for cervical cancer are high (81.5% of the target population in 2006), but rather low as far as breast cancer screening rates are concerned (43.1%).

# 8. Challenges

A range of reforms have been implemented in recent years – or are still in the state of gradual implementation – stemming from the 2005 Health Reform. They imply substantial structural changes, with a focus on more integrated nation-wide planning, assuring and improving the quality of the health system, and ensuring financial sustainability of the health care system. As the analysis above has shown, the main challenges for the Austrian health system currently are as follows:[20]

[19] See for instance Espin, J. and Rovira, J. Analysis of differences and commonalities in pricing and reimbursement systems in Europe (2007).

[20] The OECD overall efficiency score for Austria is slightly below its group average (about 2.6 years potential gain to be made through greater efficiency in the sector compared to the group – and the OECD – average of 2.3 years). Areas for improvement include: considering whether rebalancing resources from the in-patient to the out-patient care sector could contribute to increasing health sending efficiency; introducing gate-keeping arrangements; increasing the quality of out-patient/preventive care; enhanced priority setting, more choice among providers and information on quality and prices of services; improving consistency in the allocation of responsibilities across levels of government.

- To explore if current cost-sharing could be adjusted to discourage overuse/ encourage better use of more effective and cost-effective services – e.g. use of primary care rather than specialist care, and notably more health promotion and disease prevention activities (e.g. vaccination).
- To consider how to ensure a financial basis guaranteeing the provision of health care – especially as regards the financing of health insurance funds. Decentralisation has to be accompanied by a clear attribution of responsibilities in order to get the advantages of it.
- To continue to develop a comprehensive human resources strategy that tackles spatial/regional disparities – inequalities between the Länder and between urban and rural areas – in the supply of health care and foreseen shortages in primary care staff, and that ensures sufficient numbers of staff in general and in the future in view of staff and population ageing.
- To reduce excessive demand for primary and specialist care due to seemingly low costs, and supplier-induced demand driven by the dominance of the physicians in deciding upon patients needs. In this view, to explore if the current fee-for-service system is not inducing too many visits, and what mechanisms may be existing/needed which help control the number of visits. To strengthen/rationalise primary care including through controlling more effectively the use of specialist and hospital care and promoting/coordinating health care with other forms of care such as home and community care, i.e. to foster the coordination of care between primary, secondary and hospital care. To strengthen the referral system – to introduce obligatory gate-keeping arrangements. To ensure a more integrated and coordinated chronic care system.
- To improve the cost-efficiency within hospitals, ensuring that care is provided in the most clinically appropriate and cost-effective way, for example by maximising the proportion of elective care provided on a day case basis, day-of-surgery admission and reducing inappropriate lengths of stay.
- To explore strategies to rationalise and simplify the rather complex structures of decision making and financing, going further towards the "one-stop financing" goal, also to give room to further improve quality management and efficiency. More generally to continue to enhance managerial accountability and decrease administrative costs while aligning incentives (payments, cost-sharing) with national public health goals and effectiveness and efficiency.
- To improve data collection, especially in some crucial areas such as resources and care utilisation; to improve the patient information system.
- To foster the wide use of Health Technology Assessment and information and communication technologies in health care.
- To further enhance health promotion and disease prevention activities, promoting healthy life styles and disease screening given the most recent pattern of risk factors (smoking, alcohol, cardiovascular diseases).

# Statistical Annex - Austria[21]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 10.0 | 10.1 | 9.9 | 10.1 | 10.1 | 10.3 | 10.4 | 10.4 | 10.3 | 10.3 | 10.5 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 2230 | 2365 | 2489 | 2495 | 2613 | 2705 | 2857 | 2907 | 3015 | 3158 | 3246 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 7.6 | 7.8 | 7.6 | 7.7 | 7.7 | 7.8 | 7.9 | 7.9 | 7.8 | 7.9 | 8.1 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 1695 | 1815 | 1913 | 1899 | 1980 | 2043 | 2163 | 2214 | 2291 | 2413 | 2496 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 6.6 | 7.0 | 7.4 | 7.8 | 8.1 | 8.0 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 22300 | 23400 | 25000 | 24700 | 25800 | 26300 | 27400 | 28000 | 29400 | 30600 | 30900 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | 0.9 | 1.1 | 1.1 | 1.2 | 1.3 | 1.4 | 1.6 | 1.6 | 1.7 | 1.8 | 1.8 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | 2.6 | 2.6 | 2.6 | 2.7 | 2.7 | 2.7 | 2.9 | 3.0 | 3.0 | 3.0 | 3.0 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 1.1 | 1.2 | 1.2 | 1.3 | 1.3 | 1.3 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 0.7 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | 9.1 | : | : | : | : | : | : | 12.4 | : | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | : | : | : | : | : | : | : | : | 23.2 | : | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 13.5 | 13.4 | 13.7 | 12.8 | 12.8 | 12.7 | 12.5 | 12.6 | 12.9 | 12.9 | 12.5 | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 81.0 | 81.0 | 81.2 | 81.7 | 81.7 | 81.5 | 82.1 | 82.3 | 82.8 | 83.1 | 83.3 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | 68.0 | 68.5 | 69.0 | 69.6 | 60.2 | 59.6 | 60.8 | 61.1 | 59.5 | 62.3 | 61.6 |
| Life expectancy at birth males | 74.5 | 74.9 | 75.2 | 75.7 | 75.8 | 75.9 | 76.4 | 76.7 | 77.2 | 77.5 | 77.8 | 76.3 | 75.9 |
| Healthy life years at birth males | 63.4 | 63.6 | 64.6 | 64.2 | 65.6 | 66.2 | 58.1 | 57.8 | 58.4 | 58.4 | 58.0 | 61.5 | : |
| Infant mortality | 4.9 | 4.4 | 4.8 | 4.8 | 4.1 | 4.5 | 4.5 | 4.2 | 3.6 | 3.7 | 3.7 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 99.0 | 99.0 | 99.0 | 99.0 | 97.0 | 98.0 | 98.0 | 98.0 | 98.5 | 98.7 | 98.8 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 76.0 | 76.7 | 76.8 | 76.1 | 75.8 | 75.5 | 75.7 | 76.1 | 76.0 | 76.4 | 76.9 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 15.4 | 15.2 | 15.3 | 16.0 | 16.2 | 16.5 | 16.0 | 15.7 | 15.8 | 15.4 | 15.1 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | 0.4 | 0.4 | 0.4 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | 4.2 | 4.1 | 3.8 | 3.6 | 3.8 | 3.6 | 4.0 | 3.8 | 3.8 | 3.7 | 3.7 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | 0.2 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | 2.5 | 2.8 | 2.8 | 2.6 | 2.5 | 2.4 | 2.4 | 2.6 | 2.5 | 2.4 | 2.3 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 47.6 | 47.6 | 49.8 | 52.2 | 54.9 | 57.2 | 60.8 | 62.0 | 64.0 | 65.9 | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 305.9 | 306.0 | 315.2 | 325.0 | 329.7 | 336.8 | 343.9 | 352.8 | 365.0 | 374.2 | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 715.0 | 722.0 | 728.6 | 732.1 | 724.7 | 732.7 | 724.3 | 729.1 | 739.6 | 753.6 | 774.0 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 134.4 | 132.8 | 134.6 | 137.4 | 139.9 | 141.1 | 143.3 | 146.0 | 150.5 | 153.3 | 153.0 | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 635.2 | 626.1 | 617.3 | 608.7 | 600.8 | 590.7 | 582.1 | 574.7 | 570.5 | 568.4 | 562.2 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 6.5 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.8 | 6.9 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | : | 26251 | 26895 | 26809 | 27119 | 27363 | 27539 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | : | 4070 | 4190 | 4376 | 4726 | : | 5328 | 6120 | 5031 |
| Hospital average length of stay | : | : | : | : | : | 10.0 | 9.5 | 9.0 | 8.9 | 9.0 | 8.9 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | : | 13.5 | 13.5 | 14.0 | 14.8 | : | 16.2 | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | 252.1 | 281.2 | 302.4 | 308.0 | 335.0 | 341.8 | 372.9 | 378.7 | 397.6 | 418.9 | 433.3 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 162.4 | 187.8 | 201.9 | 200.4 | 221.4 | 236.1 | 245.0 | 243.4 | 255.4 | 274.2 | 290.2 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | 12.2 | 12.8 | 13.0 | 13.2 | 13.5 | 13.2 | 13.7 | 13.8 | 13.8 | 14.0 | 14.1 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 7.9 | 8.5 | 8.7 | 8.6 | 8.9 | 9.2 | 9.0 | 8.9 | 8.9 | 9.2 | 9.5 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | 1.6 | 1.6 | 1.6 | 1.8 | 1.8 | 1.9 | 2.1 | 2.0 | 2.0 | 2.0 | 1.8 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | 1.4 | 1.4 | 1.4 | 1.6 | 1.6 | 1.7 | 1.8 | 1.7 | 1.7 | 1.7 | 1.6 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 87.0 | : | 70.7 | 82.5 | 82.5 | 83.7 | 83.0 | 92.0 | 83.0 | 84.5 | 83.0 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | : | : | : | 81.5 | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | 43.1 | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[21] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Poland

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

The GDP per capita in Poland measured in PPS (14100 in 2008) is among the lowest in the EU, considerably below the EU average of 25075 PPS. The economic performance of the Polish economy was strong in 2009, with the GDP increasing by 1.7%, i.e. the only positive growth rate in the EU. This exceptional performance during the crisis reflects a constellation of favourable factors including sound fundamentals at the outset of the crisis, a well capitalised and sound financial sector, the relatively low degree of openness of the economy, a sizeable depreciation of the Polish currency at an early stage of the crisis, the cushioning effect of real wage adjustment on employment, and timely reactions from monetary and fiscal policies. The Polish economy is projected to recover progressively as external and domestic demand picks up with real GDP growth reaching 2.7% and 3.3% in 2010 and 2011, respectively.[1]

**Recent trends of expenditure**

Total expenditure on health[2] expressed as a percentage of GDP is among the lowest in the EU. In 2008 it amounted to 7.0%, having increased from 5.9% in 1998, but was still considerably lower than the EU average[3] of 9.6%. Public expenditure on health of 5.1% of GDP and higher than in 1998 (3.9%) is also much below the EU average of 7.4%. When measured in per capita terms, the gap between Poland and the EU average is even more pronounced: total expenditure amounts to 992 PPS in 2008 (vs. EU's 2381) and public to 716 (vs. 1826).

**The role of technology**

When measured by density of diagnostic and therapeutic units, the technological advancement of the Polish health care sector is significantly behind most other European countries. Both the number of MRI (0.30) and CTS (0.97) units per 100 000 inhabitants are among the lowest in the EU in 2007 and are well below the EU average (0.98 and 1.90 respectively) and the number of PET scans per 100 000 inhabitants is also slightly below the EU average (0.10 vs.0.13 in 2008).

Total expenditure on pharmaceuticals[4] as a percentage of GDP is broadly in line with the EU average (1.6% vs. 1.5% in 2008), while when expressed as a share of total current health expenditure (24.2%) it is well above the EU average (16.9%). In both dimensions pharmaceutical spending has somewhat declined over the last years.

**Health status and healthy behaviour – life-styles – risk factors**

When compared to the other European countries, the health situation of Polish women seems slightly more favourable than that of men. Indeed, both life expectancy and healthy life expectancy of females are just marginally below the EU average in 2007 (79.8 versus 82.3 years for total life expectancy and 61.3 vs. 62.3 years for healthy life years), while for males the gap is somewhat more pronounced (71.0 versus 76.2 for total life expectancy and 57.4 versus 61.5 for healthy life expectancy).[5] Infant mortality rate of 5.6‰ in 2008, although falling significantly over the last decade (from 9.5 in 1998) is still considerably higher than the EU average of 4.3‰.

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1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on expenditure is taken from OECD health data and Eurostat database.

3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.

5 Data on life expectancy and healthy life years is from the Eurostat database.

Mortality rates in Poland are well above the average rates of the EU, although lower than most other countries of the Central and Eastern Europe. In 2002, the main non-communicable diseases accounted for about 81% of all deaths in Poland, external causes for about 7% and communicable diseases for less than 1%. In total 46% of all deaths were caused by diseases of the circulatory system and 24% by cancer. Poles have a 20% higher risk of dying from cancer than the average person of the EU15.

Although the data is scarce and lacking for the most recent years, it suggests that the lifestyle of the Polish population can be considered as relatively healthy since the obesity rate and alcohol consumption are below (although the latter has been growing constantly over the last decade) and smoking slightly above the EU average.

## 2. Expenditure prospects: population ageing and future health status

Over the decades to come the Polish population is projected to decrease significantly from 38.1 million in 2008 to 31.1 million in 2060. Starting from a lower level, life expectancy is projected to grow by 11.1 years for men and 8.1 for women, significantly more than in the EU on average. The share of the old population (65+) is expected to increase by 22.7 pps and the share of the very old (80+) by 10.1 pps.

As a result of ageing[6], public spending on health care is projected to increase by 33% or 1.3 pps of GDP, slightly more than the 25% average increase in the EU (but slightly less in terms of pps: 1.7 pps for the EU average), but the trend may be even reversed in the case of the optimistic scenario on health status (constant health scenario), which would imply a decrease by 0.6 pps of GDP. Limited expected increase in health care spending, analysed together with optimistic projections of the other age-related items of public expenditure and the current budgetary stance, results in medium risk for the long-term sustainability of the Polish public finances.

## 3. Health care coverage and expenditure

Public health insurance covers 98.1% of the population. Practically all social groups are covered by mandatory health insurance. There is no legal possibility to opt-out from the system on the grounds of income, social group or source of means of living. The law identifies the package of health services provided under the insurance scheme, as well as a list of excluded services. A number of services, defined by law, are provided for co-payments, whose level is legally limited and depends on the income of an insured person. For dental care, a precise system of point pricing with respect to a standard basket of dental procedures and materials is established.[7]

Shares of public and private expenditure in total health care spending have been stable over the last decade. Public share fluctuated around 70% to reach 72.2% in 2008, while private expenditure was around 30% of total spending (27.7% in 2008). As such, health financing is slightly more based on private sources than in the other EU countries where the private share amounts on average to 22.7%. Out-of-pocket spending accounts for a large majority of private expenditure (22.4% of total expenditure on health in 2008, from 34.6% in 1998). It suggests a relative underdevelopment of other, more institutionalised patterns of financing (such as supplementary insurance schemes). A large and constantly growing part of out-of-pocket spending has been devoted to pharmaceuticals

[6] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).

[7] As a result, Poland scores about 5.9 out of 6 on the breadth, 6 in the scope and around 5.3 on the depth of basic coverage according to the OECD scoreboard.

(60% of all private expenditure in cash). The remaining part is spent above all on non-reimbursed services provided mainly by private entities (expenditure on specialised outpatient services and examinations, dental care, hospital care, medical rehabilitation and health resort treatment, etc.) and informal payments to the public sector (mainly on hospital care, in form of gratuities in kind). A relatively small part of private expenditure covers payments and co-payments for health care provided by public providers. Such a structure of private expenditure illustrates the features of the national public health care provision: relatively easy access to primary health care, difficulties in accessing certain categories of specialised care and relatively low quality of the standard "free-of-charge" services.

Private expenditure also includes the pre-payment schemes, of which main components are "medical subscriptions" and different insurance policies protecting against the risk of high expenditures on health care. The former ones are mainly the expanded packages of health services offered by employers to their employees. They usually include services that the employers are obliged to provide in accordance with law and cover mostly outpatients services. The latter ones are still in the early stage of development and concern a minor number of patients.

# 4. Collection, pooling and allocation of financial resources

The current structure of the health care system is the outcome of a series of institutional reforms initiated in 1999. By that time health care was financed from government resources and the major health care providers, having the status of budgetary units, were allocated funds from the Ministry of Health or regional and local authorities. Expenditures were planned and distributed according to sections corresponding to the kind of costs and categories of service providers, which hindered the flexible management of funds.

As a result of the 1999 reform, the system departed from the principle of budget financing, accounting and reporting, and switched to the general rules of accountancy binding all the economic entities.[8] Seventeen (16 regional and one sectoral – for uniformed services) regional sickness funds were established to negotiate and contract services with the providers. This decision led to the artificial division of the system into 16 separated markets for health services, which strongly hindered patient mobility between regions because of complicated bureaucratic procedures. Moreover, each regional sickness fund had a monopolistic position which, together with an underdeveloped system of control, resulted in many cases of abuse and corruption.

Following strong criticism, the system was reformed again in 2003: regional sickness funds have been replaced by a centralised National Health Fund (NHF). The NHF manages the financial resources and allocates them between providers through its regional departments. It organises regular calls for tender to provide specific medical services and procedures. The generally binding terms of contracts formulate precisely the scope and general provisions of contracts and specify requirements for individual categories of services.

Funds to finance the health care system come from two main sources. First and foremost, the revenues from universal health insurance contributions collected by the NHF which finance the direct costs of health services to patients through contracts with service providers (over 80%). Second, government budgets (state, regional or local authorities) which finance public health targets, health insurance contributions for specific groups of the population (e.g. unemployed receiving social security benefits, persons receiving social pensions, farmers, war veterans, etc.), capital expenditure in public health care institutions, highly specialised tertiary care procedures

[8] As a consequence, Poland scores 6 out of 6 in the OECD scoreboard due to the very stringent budget constraint.

(such as organ transplants, heart surgery, treatments abroad) and very expensive drugs (in total around 10%).

The NHF contributions are calculated on the gross income base, which makes it a sort of earmarked type of personal income tax (PIT). The base differs slightly for some defined social groups: farmers (depending on the size of the farm and the price of grain), self-employed (depending on income but with a lower limit) and beneficiaries of social security (depending on the gross amount of benefits). The contribution rate has evolved over time and amounts currently to 9% of the base, 7.75% of which are subtracted from PIT and 1.25% are paid directly by the insured person. The Government has prepared a package of reforms which aim at improving the efficiency of health care, mainly through increasing responsibility of providers for their professional and management decisions. The reforms are to be gradually presented to the Parliament. The main proposals include the obligatory transformation of publicly owned hospitals (mostly owned by local governments) into independent companies if they accumulate debt (the state is expected to financially help the self-government entities which decide to transform). On the other hand, public hospitals would be allowed to sign contracts with insurance companies, which has not been the case so far due to the financial limits in exclusive contracts signed with the National Health Fund. The reimbursement rules are planned to be changed and made uniform, leading to lower co-payments for most groups of pharmaceuticals (e.g. the risk will be shared between the NHF and the producer in case of most expensive drugs). Negotiations between hospitals and NHF would be facilitated by the newly established state agency responsible for calculating the costs and establishing the tariffs for each medical service (although a success of such a reform would require transfer of some of NHF's competences, which is not explicitly proposed).

Moreover, the supply of specialists is expected to be boosted by shorter training periods and easier formalities (although such a change may negatively affect the quality of care), while the professional errors of doctors would be easier to prove and indemnify.

The proposed reforms go in the right direction of strengthening the pressure on the providers to efficiently manage the available funds, but fail to solve the problem of a gap between the amount of resources available and the large legal guarantees of free provision of goods and services to the population.

The re-centralisation of the system did not abolish the monopolistic position of the payer which is often accused of unfair treatment of the negotiating partners, dictating the contract conditions to the providers and artificially lowering the prices for purchased services. Consequently, the system does not provide sufficient protection to the patient, who cannot change the insurer or the conditions of the insurance.[9] Also providers are in a weak position, often forced to accept unfavourable conditions.

# 5. Providers status, referral systems and patient choice

Since the 1999 reform health care services are provided by public and non-public health care units and individual medical practitioners (or practitioners who are associated within a group medical practice). All of them are fully independent in terms of organisation, personnel, assets and finances. Public units can be founded by territorial self-governments, ministers (Minister of Health, National Defense, Interior and Administration) and medical academies. Unlike private entities, fully subject to the market rules, public health care units enjoy limited responsibility for the consequences of their economic decisions. This situation allows for a number of negative phenomena. In order to avoid the deficit of the unique public payer, the National Health Fund, the unbalances between costs

[9] Indeed, the OECD score for both the choice of insurer and for insurer levers for competition in Poland is 0 out of 6.

and revenues are being transferred to the health care units. Moreover, the lack of control by the funding bodies often leads to the generation of losses. As a consequence, practically uncontrolled process of building up debt is observed, encouraged by periodical administrative decisions to pay off existing debts from budgetary sources.

Primary health care is provided in outpatient clinics and at home (with doctors obliged to provide home services when required for medical reasons). Family physicians (or general practitioners – GPs) act as gatekeepers for specialist and hospital care. Patients have a free choice of the GP, with a limited number of changes available per year.[10] Specialist outpatient care is based mostly (about 80%) on private medical practices or specialised health centres (mainly in the big cities) which developed on the basis of the former public specialised health care centres. Inpatient hospital care is provided in predominantly public hospitals. The number of non-public hospitals, although constantly growing, is still minor (72 vs. 732 public hospitals in 2003).

While the insurance coverage is practically universal, the supply of health care is seemingly not sufficient to provide the whole population with timely and adequate care. The number of practising physicians per 100 000 inhabitants (216 in 2008) is the lowest in the EU and well below the EU average around 320. Moreover, it has fallen over the recent years (233 in 1998, 244 in 2003), mainly as a result of an outflow of specialists, unsatisfied with salaries and working conditions, abroad and to the other sectors. An interesting observation is the fact that the number of licensed physicians has been broadly constant over the same period of time, suggesting the growing gap between the potential and actual supply of doctors. The same is true for GPs (17 per 100 000 inhabitants in Poland vs. 94 in the EU in 2008), although their number has slightly increased in the last couple of years. It is due to the fact that the institution of a GP has only been introduced to the Polish health care system in 1991 and the stock of practising GPs is still in the process of building-up. The number of nurses is also low (575 per 100 000 inhabitants in 2007), but comparable with the EU average of 830 and, contrary to the number of physicians, has been increasing in the recent years (after a decrease from 621 in 1998 to 530 in 2003).

The shortages of staff are particularly perceptible in some regions and for some specialisations as the regional and sub-sectoral discrepancies in care availability are significant. Moreover, the age structure of the medical staff is suggesting possible further scarcity in the future due to the process of ageing: among licensed physicians only about 30% is younger than 40, 45% has between 41 and 60 years and as much as 25% is over 60.

A characteristic feature of the Polish health care system is the widespread phenomenon of double (or multiple) employment: physicians keep part-time salaried job in (mostly public) health care units and simultaneously act as individual medical practitioners. Indeed, only for a small minority of individual practitioners (with the exception of dentists) this occupation is reported as their main or only job. Such practice has a strong negative effect on the quality of services provided by the health care units and their economic situation, as their equipment and facilities are often used by the physicians for their secondary activities.

The capacity of Polish hospitals (441 beds per 100 000 inhabitants in 2008) is higher than the EU average (383) in spite of the substantial reduction over the last two decades (632 in 1990; 553 in 1998) which occurred in line with the decline in average length of stay (12.5 days in 1990; 8.9 in 2000; 8 in 2007 which locates Poland around the EU average). As a result of those trends, rate of occupancy of beds has increased significantly reaching 77% of available beds in 2002 (more recent data are not available).

[10] According to the OECD, the level of choice of provider in Poland has a score of 6 out of 6, while gatekeeping scores 4 out of 6.

# 6. Purchasing, contracting and remuneration systems

Physicians employed by the health care units can be remunerated according to a number of contractual arrangements, although salary is the most widespread pattern. Individually practising physicians are generally paid according to the capitation principle, on the basis of patient lists. A basic rate is usually adopted and differentiated by age for three age groups (0-6 years, 7-64 years, over 65 years) with different benefits for special groups (school children, pensioners of social welfare homes or orphanages). The exact level is negotiated periodically (usually yearly) with the NHF, which can lead to conflicts over the growth rate as compared to the scope of required procedures.

Over the last decade, salaries in the health care sector have been constantly slightly below the average salaries in the overall economy. Between 1998 and 2004 gross revenue fluctuated around 75-80% of the average, but in 2006 it has increased dramatically reaching 91%. The level of revenues varies according to the function: in 2006 physicians and specialists earned 148% of the average wage, nurses and midwives 85% and unskilled personnel 75%.

Hospitals are financed on the basis of the contracts concluded between individual entities and the National Health Fund. A uniform classification of hospital services, mainly based on defining individual groups of procedures and prices for basic units serves as a basis for those contracts. [11]

When looking at hospital activity, inpatient discharges – per 100 000 inhabitants – are below the EU average (13965 vs. 16231 in 2007) and the number of day case discharges is well below – less than half – the EU average (2904 vs. 6120 in 2007). Although it has doubled since 2003, the proportion of surgical procedures conducted as day cases (17.2%) is still well below the EU average (28.1% in 2007). As mentioned earlier, the overall hospital average length of stay is about the EU average (8 days in 2007). These figures suggest that there may be some room to increase hospital throughput/efficiency notably by improving the way surgical treatments are conducted (i.e. more use of day case surgery).

**Pharmaceuticals**

Total spending on pharmaceuticals has been increasing constantly over the last decade, reaching in 2007 almost 150% of the 2000 value (in constant prices). The fast growth in sales was not accompanied by the increase in the reimbursement financing: the total value of reimbursed drugs has increased over the same period (2000-2007) by mere 17%. Consequently, private expenditure on pharmaceuticals has risen dramatically by 62%.

The pharmaceutical market in Poland is divided into two segments: open (through pharmacies) and closed (through hospitals) markets. Over the last decade, the value of drugs sold has increased in both markets, while the quantity has decreased in hospitals and remained stable in pharmacies. These developments suggest a sharp increase in the average price of hospital drugs, driven mainly by a growing use of original drugs. In the open market, the shares of reimbursed and over-the counter drugs were broadly equal until 2004. Since then a significant increase in the quantity of prescribed and reimbursed drugs has exceeded significantly that of the OTC drugs. However, in terms of value the gap between the growth rates of the two groups has been much narrower, which suggests a much higher price dynamics of the OTC pharmaceuticals, resulting from high effectiveness of advertising campaigns and insufficient competition between the OTC drugs producers. More detailed analysis of the structure of pharmaceutical market allows observing the increase in the share of imported drugs, linked to the fall in their relative price, as well as the

[11] As a result of both capitation system for GPs and hospital system, the OECD score for remuneration incentives to raise the volume of care in Poland is 3.7 out of 6.

growth in the total value of sold generics, driven mainly by the relative increase in their prices, rather than quantities sold.

# 7. Information and monitoring, use of cost effectiveness and health promotion

The Centre for Health Care Quality Monitoring provides independent accreditation on the basis of a published set of standards. Quality requirements, national guidelines and standards are developed based on independent expertise. Further schemes include developing a better system to evaluate services. The use of technology assessment is increasing, leading to evidence-based contracting of services.

Public (0.1%) and total (0.2%) expenditure on prevention and public health services as a % of GDP are below the EU average (0.2% and 0.3% in 2008). They do not compare better as a % of total current health expenditure, with both public and total expenditure on prevention and public health services below the EU average (respectively 1.5% vs. 2.1% and 2.4% vs. 2.7% in 2008). It seems rather low given the comparatively low achievement in life expectancy and healthy life expectancy figures. While the data compares fairly good as far as life-styles are concerned, it may be very valuable to focus on disease prevention activities according to the most recent pattern of risk factors (circulatory system diseases and cancers). While vaccination rates are above the EU average (99% vs. 96% in 2007) screening rates are indeed extremely low, both for cervical cancer and for breast cancer (respectively 49% and 15.4% of the target population in 2004).

# 8. Challenges

The Polish government has prepared a package of reforms mainly targeted at reducing provision inefficiencies. Besides, as the analysis above has shown, the main challenges for the Polish health system currently are as follows:[12]

- To improve the basis for more sustainable and larger financing of health care in the future, which can improve access and quality of care and its distribution between population groups and regional areas. The currently low level of total and public financing of health care leads to insufficient supply of certain services and low quality of care. Such a situation results in a chronic existence of waiting lists and creates incentives for corruptive behaviour (expansion of a "grey zone"). Moreover, the combination of an official market mechanism with the privileged position of public health care units leads to the chronic procedure of building up debt by the public health care providers, tolerated by the authorities in order to dissimulate the inefficiencies of the system.
- To develop a comprehensive human resources strategy that tackles spatial/regional disparities, ensures sufficient numbers of staff in general and in the future in view of staff and population ageing and motivates and retains staff to the sector and to the country.
- To tackle the multiple employment phenomenon, affecting accessibility and quality of public health services, and the widespread illegal use of public equipment and facilities by the individual practitioners.

[12] The OECD overall efficiency score for Poland is above its group average (about 1.8 years potential gain to be made through greater efficiency in the sector compared to the group average of 2.7 years and the OECD average of 2.3 years). Areas for improvement include: to examine the reasons behind the high inequalities in health status; to devise strategies to improve the quality of out-patient care – combining the existing capitation system for GPs with some elements of fee-for-services could be an option; efforts to increase consistency in the allocation of resources across government levels could contribute to raise spending efficiency.

- To improve the cost-efficiency within hospitals, ensuring that care is provided in the most clinically appropriate and cost-effective way, for example by maximising the proportion of elective care provided on a day case basis, day-of-surgery admission.
- To address the inefficiencies provoked by the legally sanctioned monopolistic position of the single payer (National Health Fund). Such a structure of the system impedes free choice of insurer by the patients, artificially limits the bargaining position of health care providers during contract negotiations and provides strong incentive for corruptive behaviour
- To foster a wide use of Health Technology Assessment and information and communication technologies in health care.
- To enhance health promotion and disease prevention activities, promoting disease screening given the most recent pattern of risk factors (circulatory system diseases, cancers).

# Statistical Annex - Poland[13]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 5.9 | 5.7 | 5.5 | 5.9 | 6.3 | 6.2 | 6.2 | 6.2 | 6.2 | 6.4 | 7.0 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 479 | 496 | 507 | 551 | 626 | 633 | 680 | 717 | 767 | 872 | 992 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 3.9 | 4.1 | 3.9 | 4.2 | 4.5 | 4.4 | 4.3 | 4.3 | 4.3 | 4.6 | 5.1 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 313 | 353 | 355 | 396 | 446 | 442 | 466 | 497 | 536 | 618 | 716 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 4.1 | 4.4 | 4.6 | 4.8 | 4.9 | 5.0 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 8100 | 8600 | 9200 | 9400 | 9900 | 10100 | 11000 | 11500 | 12300 | 13600 | 14100 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | 0.6 | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | 0.4 | 0.4 | 0.4 | 0.5 | 0.6 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.1 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | 0.1 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | : | : | : | : | 1.8 | 1.9 | 1.8 | 1.7 | 1.7 | 1.6 | 1.6 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 0.5 | 0.5 | 0.6 | 0.7 | 0.7 | 0.8 | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | : | : | : | : | 12.5 | : | : | : | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | : | : | : | 27.6 | : | : | 26.3 | : | : | : | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 8.5 | 8.4 | 8.4 | 7.8 | 8.1 | 9.1 | 9.2 | 9.1 | 9.9 | 10.3 | 10.8 | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 77.4 | 77.5 | 78.0 | 78.4 | 78.8 | 78.8 | 79.2 | 79.3 | 79.7 | 79.8 | 80.0 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | : | : | 68.9 | : | : | 66.6 | 62.5 | 61.3 | 62.6 | 62.3 | 61.6 |
| Life expectancy at birth males | 68.9 | 68.8 | 69.6 | 70.0 | 70.3 | 70.5 | 70.6 | 70.8 | 70.9 | 71.0 | 71.3 | 76.3 | 75.9 |
| Healthy life years at birth males | : | : | : | : | 62.5 | : | : | 61.0 | 58.2 | 57.4 | 58.4 | 61.5 | : |
| Infant mortality | 9.5 | 8.9 | 8.1 | 7.7 | 7.5 | 7.0 | 6.8 | 6.4 | 6.0 | 6.0 | 5.6 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | : | : | : | : | : | : | : | 97.3 | 99.3 | 98.1 | 97.8 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 65.4 | 71.1 | 70.0 | 71.9 | 71.2 | 69.9 | 68.6 | 69.3 | 69.9 | 70.8 | 72.2 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 34.6 | 28.9 | 30.0 | 28.1 | 25.4 | 26.4 | 28.1 | 26.1 | 25.6 | 24.2 | 22.4 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | : | : | : | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | 2.3 | 1.5 | 2.5 | 1.6 | 1.5 | 2.1 | 1.7 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | : | : | : | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | 2.3 | 1.4 | 2.5 | 1.5 | 1.5 | 2.1 | 1.7 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | : | : | : | : | : | : | : | : | : | : | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 233.0 | 226.4 | 222.3 | 226.7 | 230.4 | 243.5 | 229.1 | 213.9 | 218.0 | 219.1 | 216.0 | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 621.0 | 574.0 | 553.2 | 544.8 | 543.3 | 530.0 | 550.8 | 564.0 | 564.6 | 574.9 | 577.0 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | : | : | 8.0 | 9.0 | 10.0 | 11.9 | 13.3 | 14.3 | 15.2 | 16.0 | 17.0 | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 552.8 | 530.2 | 515.2 | 506.8 | 465.9 | 486.4 | 478.7 | 468.8 | 465.0 | 461.5 | 441.2 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 5.4 | 5.3 | 5.4 | 5.5 | 5.6 | 6.1 | 6.2 | 6.3 | 6.6 | 6.8 | 6.8 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | : | 16799 | 17173 | 13769 | 14318 | 13965 | : | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | : | 1629 | 1878 | 2179 | 2767 | 2904 | : | 6120 | 5031 |
| Hospital average length of stay | : | : | : | : | : | 7.2 | 6.8 | 8.4 | 8.1 | 8.0 | : | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | : | 8.8 | 9.9 | 13.7 | 16.2 | 17.2 | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | : | : | : | 177.6 | 191.4 | 201.3 | 201.0 | 207.1 | 213.3 | 224.1 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 39.3 | 45.7 | 55.7 | 62.8 | 68.2 | 77.4 | 73.5 | 76.2 | 80.0 | 80.0 | 85.8 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | 29.5 | 31.6 | 31.0 | 29.8 | 28.8 | 26.1 | 24.2 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 9.5 | 9.6 | 11.4 | 11.7 | 11.3 | 12.8 | 11.3 | 11.3 | 11.1 | 9.8 | 9.3 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | : | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | : | 3.4 | 3.4 | 1.8 | 2.4 | 2.5 | 2.4 | 2.4 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | : | : | 3.3 | 3.2 | 1.5 | 1.8 | 1.8 | 1.7 | 1.5 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 98.0 | 97.6 | 98.2 | 97.7 | 97.9 | 97.9 | 98.5 | 98.8 | 99.0 | 98.9 | : | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | : | 49.0 | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | 15.4 | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[13] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Portugal

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (19000 PPS in 2008) is lower than the EU average (25075 PPS) up from 13000 in 1998. Portugal has been recording weak growth, below the EA – and EU – average since 1998. As a result of the global economic crisis, GDP growth was -2.7% in 2009 and unemployment reached 9.6% in the same year. The Government response to the crisis focused on the implementation of discretionary measures to stimulate the economy in 2008 and 2009 while pursuing some structural reforms. The recovery is projected to be slow with a forecasted economic growth of 0.5% in 2010 and 0.7% in 2011.[1] Portugal is currently running a large budget deficit (9.3% of GDP in 2009). Fiscal consolidation to bring government revenues and spending into line in the coming years may therefore have consequences for the health sector through the adoption of more consolidation measures to further improve its efficiency and rein in spending in this area. The authorities have already undertook some measures that promote efficiency in the health sector, such as hospitals expenditure reduction plans, guidelines to combat waste, expenditure reduction in the Ministry of Health Offices, pharmaceuticals expenditure audit and revision of human resources and drug policy.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (10.1% in 2008) is above the EU average[3], (9.6%) but the same as the EA average. It has increased from 8.0% in 1998 but, due to reforms in the Health Care System, it is actually lower than that registered in 2005. Public expenditure on health as a percentage of GDP is slightly below the EU average (7.1% compared to 7.4% in 2008), an increase from 5.4% in 1998. Total (1987 PPS in 2008) and public (1397 PPS in 2008) per capita expenditure are, however, lower than the EU average (2381 PPS and 1826 PPS), having increased since 1998 (1036 and 696 PPS), although less strongly in recent years.

**The role of technology**

Total (2.2% in 2006) and public (1.2% in 2006) expenditure on pharmaceuticals[4] as a percentage of GDP is respectively above and about the EU (and EA) average (respectively 1.6% and 1.0% in 2006). This is similar for total (22.8% vs. 17.2% in 2006) and public (12.7% vs. 11.5% in 2006) pharmaceutical expenditure as a percentage of total current health expenditure. This denotes an important share of private expenditure on pharmaceuticals. Note that expenditure on pharmaceuticals shows a reduction in recent years, probably as a result of the large number of policies implemented in this area aimed at controlling costs. The number of MRI units per 100 000 inhabitants is about the EU average (0.9) and below the EA average but the number of CTS units per 100 000 inhabitants is actually much above the EU average (2.6 vs. 1.7 in 2007) and shows a very large increase since 2003, perhaps the result of the increased demand for new technology including new equipment and pharmaceuticals. However, it is important that under the current fiscal consolidation increases in high-tech/ high cost equipment are pursued with caution.

**Health Status and healthy behaviour – life-styles – risk factors**

In the last decade, the health status of the Portuguese population has improved considerably. This evolution seems to be correlated with increases in financial resources devoted to health care, as well

[1] European Commission (2010), European Economic Forecast – Spring 2010.

[2] Data on expenditure is taken from OECD health data and Eurostat database.

[3] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

[4] Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.

as to the general enhancement in socioeconomics conditions. Life expectancy (82.4 years for women and 76.2 for men in 2008) is above the EU average but slightly below the EA average. Healthy life years (57.2 years for women and 59 for men in 2008) are, however, below the EU average.[5] Mortality by prostate cancer, stroke and especially road accidents (second highest in the OCED) is quite high according to OECD standards.[6] The incidence of HIV/AIDS and tuberculosis is also very high for EU and especially EA standards. The authorities also recognise health inequalities between socio-economic groups, particularly between country regions, as a policy challenge. Data suggests an increase in the proportion of the population which is obese (from 12.8% in 1999 to 15.4% in 2006) and no decrease in the last two decades in the share of the population that smokes regularly. These values deserve some attention and action.

## 2. Expenditure prospects: population ageing and future health status

The population is projected to increase by 600 000 from 2008 to 2060. Life expectancy is projected to increase by 8.3 years for men and 6.4 years for women. The share of the old (65+) is projected to increase by 13.4 pps and the share of the very old (80+) by 8.3 pps (more than the respective EU average of 13 and 7.8 pps) from 2008 to 2060.

As a result of ageing[7], health care expenditure is projected to increase by 2.2 pps of GDP above the average change in the EU of 1.7 pps. In Portugal, good health (translated by a constant health scenario) reduces the projected expenditure increase by more than half (from 2.2 pps to 0.9 pps) highlighting the importance of improving health behaviour. In this context, preserving elderly people in good health as well as autonomous, over most of their remaining years, is in general considered to have a direct impact on health and long-term care costs. Overall, projected health care expenditure increase is expected to add to the strong budgetary pressure from other age-related items of public expenditure (mainly pensions) contributing to the medium risk for long-term sustainability of public finances (2009 sustainability Report). Therefore, it is important to adopt cost-effective ageing policies that can diminish the financial impact of an ageing population on health care expenditure.

Note that after the 2006 pension reform, the increase in pension expenditure due to ageing stayed below the EA and EU averages.

## 3. Health care coverage and expenditure

A National Health System, funded through taxation, provides 100% population coverage and supplies direct acute hospital care, general practice, mother and child care and specialists consultation, although very commonly provided in the private sector too. Dental consultations, physiotherapy, diagnostic services and dialysis are predominantly provided by the private sector. The Ministry of Health is accountable for the development of the national health policy strategy, specifically the regulation, organization and management of the health care system as a whole. Portuguese health system is a network of public and private health care providers. There are also some public and private insurance schemes for certain professions (called "health subsystems") including the scheme for those in the banking sector (SAMS) or the one for civil servants (ADSE), whose service coverage overlaps to a large extent with that of the NHS. These individuals can access both sets of services and therefore have double coverage.

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[5] Data on life expectancy and healthy life years is from the Eurostat database for 2007.

[6] Mortality rates are based on the crude number of deaths according to selected causes in the WHO Mortality Database; they have been age-standardised to the 1980 OECD population, to remove variations arising from differences in age structures across countries and over time within each country (OECD Health at Glance 2009).

[7] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).

In 2006, private expenditure constituted 28.5% of total health expenditure and was therefore higher than the EU average of 22.5%. It was below that in 1998 (32.9%) but the same as in 2001. In 2002 and 2003 private expenditure decreased but increased again from 2004 onwards. A large part of private expenditure is out-of-pocket expenditure (22.9% of total health expenditure in 2006 and higher than the EU average of 14.3%), having remained rather stable since 1998 (23.0%). Cost-sharing applies to primary care and specialist consultations (typically a fixed fee), hospital care (typically a fixed fee), home care, pharmaceuticals (typically a share of the price), eye care and dental care. There are exemptions for some population groups (e.g. low income, pregnant women, children, elderly, those suffering from certain medical conditions) making up to about 55% of the population. The government has recently introduced a system of vouchers for dental care for certain population groups to improve access to these services as their coverage under the NHS is limited.[8] Since 2009, the groups covered are pregnant women, users of the NHS, elderly beneficiaries of the solidarity supplement and young people under 16 years. The vouchers maximum value ranges from €80 (for children from 7 to 10 years old and elderly beneficiaries) to €120 (for children above 13 years old and pregnant women) per year and aims to promote the reduction of the incidence and prevalence of oral diseases in this three groups by providing a set of dental care in the areas of prevention, diagnosis and treatment. The access to these dental vouchers is carried out by an indication of a GP and based on clinical criteria.

The remainder is private health insurance which has been growing over the years. 17.9% of the population takes up private duplicative health insurance (insurance covering the same goods and services as the NHS), 8.7% takes up complementary private insurance to help cover for cost-sharing, and 8.7% of the population holds supplementary health insurance to cover for the services and goods excluded from the benefit basket. It is not clear if cost-sharing encourages the use of more cost-effective services (e.g. more primary care than specialist care) although there is a compulsory referral system in place and therefore patients have to use primary care services first. From the point of view of counteracting moral hazard, if cost-sharing is fully covered by private insurance it may lose the ability to reduce overconsumption and/or encourage some services more than others.

To improve access to primary care and health promotion and disease prevention actions in more rural/ isolated parts of the country the authorities have introduced mobile units' scheme and there is a 24-hour primary care and paediatric counselling helpline. There has been a recent reorganisation of primary care health centres to a) have longer opening hours including a schedule to receive patients without prior appointments and b) to have a more multidisciplinary staff mix. These are the so-called Family Health Units (FHUs). This aims to improve access to primary care and reduce use of unnecessary emergency hospital care as well as improving care coordination in the context of chronic illnesses. To improve access to outpatient specialist consultations authorities have created an integrated nationwide system to manage access to hospital specialty consultations. In order to improve access and reduce the waiting time for hospital surgery, authorities have introduced an integrated central and nationwide system to manage patients on waiting list. In addition, they have introduced maximum waiting times for visits to GPs, outpatient specialist consultations and hospital surgery. As a result, waiting times (and the number of the people on a waiting list) have reduced from 8.6 to 6.9 months since 2008.

Therefore general improvements in service quality and access, including an increase in the cost-coverage for a part of the population, may help explain the increase in public and total expenditure observed in the last decade, although this increase has been counteracted in recent years by primary

[8] As a result, Portugal scores 6 out of 6 on the breadth and scope of basic coverage and a bit above 5 out of 6 on the depth of coverage according to the OECD scoreboard.

care and hospital reorganisation and policies to control pharmaceutical expenditure for example (see further).

# 4. Collection, pooling and allocation of financial resources

In 2008, 70.2% of total health expenditure funding came from government sources (direct and indirect taxes collected centrally) plus social security contributions, 23.1% from out-of-pocket payments and the rest from private insurance.

Public and total expenditure on health administration and health insurance as a percentage of GDP (about 0.1%) is significantly lower than the EU average (0.3 and 0.4 respectively in 2006), as is public and total expenditure on health administration and health insurance as a percentage of current health expenditure (0.8% and 1.2% vs. 3.2% and 4.5% in 2006). There has been an effort in recent years to reduce administrative costs and improve the general management of the sector, as part of the general reform of public administration. Reforms led, for example, to the centralised purchasing of services, medicines and medical devices to explore economies of scale and reduce administrative costs. There may still be some issues related to governance or decision-making coherence across levels of government. For example, there are five Regional Health Authorities which were to be responsible for purchasing primary, specialist and hospital care for their respective patients and for implementing public health objectives. However, their financial responsibility has been limited to primary care and decision-making remains highly centralised (which may not necessarily be detrimental to cost containment but can cause decision-making conflict or fragmentation). Also, while the central government regulates hospital capacity, regional health authorities can decide on hospital equipment (some of which does no longer require a need for assessment prior to a buy), which may explain a large number of CTS and its uneven distribution in the country. This may also be due to the uneven implementation of the Regional Master Plans for infrastructure and equipment across the country.

The budget for the health sector is defined annually in Parliament when the general Budget is approved. In the past, there was often overshooting of hospital expenditure. In recent years, authorities have tightened the budget constraints in the sector and implemented a variety of cost-containment and efficiency policies to control expenditure: e.g. increased cost-sharing, hospital closures, concentration and specialisation, measures to control pharmaceutical expenditure.[9]

# 5. Providers status, referral systems and patient choice

The NHS is a mix of public and private provision. Primary care, provided by general practitioners (GPs), is delivered through a network of public health centres, outreach services and non-profit organisations that provide care for NHS users. NHS outpatient specialist care is centred in hospitals outpatient wards where most specialists work. Hospital care is mostly delivered in NHS hospitals complemented with private and social entities which have contracted with the Ministry of Health to provide care for NHS patients. Virtually all health centres are public and the vast majority of hospitals are public (85.7% of total acute care beds, with 6.6% owned by private not-for-profit hospitals and 7.7% owned by private for-profit hospitals) but most diagnostic and therapeutical services are private and establish a contract with the NHS to serve NHS users. In addition to NHS provision, there is private outpatient practice, mostly in their private offices, for private patients, though often conducted by the same specialists that work for the NHS. Although the large majority of doctors are government employees, some salaried NHS doctors, depending on their type of contract, might be allowed to conduct simultaneously private and public health care services. The contracts are divided in three distinct levels: part-time contracts, where some hierarchical positions,

[9] According to the OECD, Portugal scores 6 out of 6 in the OECD scoreboard due to very stringent cost controls.

such as head of service, are not permitted; full-time, but not exclusive, being able to practice in the private sector, with 35 work hours per week; and extended full-time, where doctors have to work 42 hours per week and with exclusive NHS employment, which means no private practice allowed.

The number of practising physicians per 100 000 inhabitants (267.8 in 2004) is below the EU average (321 the same year) showing a slight increase since 1998 (258.1). The number of GPs per 100 000 inhabitants (45.6) is low and below EU average (87.7) although it shows a modest but consistent increase (43.4 in 1998). The number of licensed nurses per 100 000 inhabitants (535 in 2008) is below the EU average (746.8) and one of lowest in the EU, although it registered a significant increase over time (340.3 in 1999). Portugal has suffered from staff shortages which it has recently addressed by contracting foreign doctors and by starting two new medical degrees co-funded by the ESF. The numbers above suggest that the skill mix is improving in the direction of a more primary care oriented provision (which authorities wish to pursue) although progress has been slow. Staff supply is regulated: there are quotas for medical students and by speciality although there is no regulation in terms of physician location which explains the high concentration of physicians including GPs in big urban areas. Therefore, while there is a general shortage of staff it is important that staff increases focus strongly on supporting primary care staff and also on improving its distribution. A human resources planning instrument could be useful to help identifying in which geographic areas or medical specialties there are staff shortages, and adjust training accordingly. This should be done in conjunction with the Ministry of Education.

The authorities have recently made strong efforts to improve primary care provision and to reduce the past high emphasis on specialist hospital care. Residents have to register with a GP (called family doctor) and there is a compulsory referral system from primary care to specialist doctors and GPs act like gatekeepers to specialist and hospital care. Choice of GP, specialist or hospital is rather limited.[10] In addition to the primary care reforms mentioned above, the authorities have introduced an individual electronic NHS card and are developing a variety of e-health actions, including electronic patient records, e-prescribing, e-appointments, that aim to support and render the referral system and care coordination more effective and, as a consequence, improve effectiveness and efficiency of care by reducing the use of unnecessary specialist and hospital emergency care. Indeed, GPs consultations have been increasing and faster than emergency department episodes. However, staff shortages in general and of GPs in particular (there are reports over several thousands patients without a GP, especially in geographically isolated areas) still result in waiting times for primary care, which, combined with high patient expectations, has led to some excess and unnecessary use of specialist and hospital emergency care.

The number of acute care beds per 100 000 inhabitants (276.5 in 2008) has decreased over time (320 in 1998). It is below the EU and EA average (respectively 383.2 and 385). There is, however, a shortage of follow-up/long-term care beds/ facilities which creates bed-blockages in acute care (unnecessary and long use of acute care beds). Increases in hospital capacity and equipment are centrally or regionally determined (regulated).

There have been a number of hospital closures as part of a process of hospital concentration, specialisation and complementarity within regions, and the creation of only a few centres of excellence for certain diseases with the aim of avoiding duplication, reducing costs and exploring economies of scale. Some hospitals were turned into public corporate entities ("Hospitais EPE") with high management autonomy and establishing a contract with the central NHS authority. The main innovation introduced by this transformation was the so-called "contratos programa" (contracts), through which the hospital agrees to ensure a certain level of activity in areas like admissions, external consultations, emergency department episodes and ambulatory care cases, in

[10] Indeed, according to the OECD, the level of choice in Portugal has a score of a bit less than 1 out of 6, while gatekeeping scores 6 out of 6.

return for a yearly budget. Negative financial results should be absorbed by the hospital. Some of these policies have however been met with popular resistance and dissatisfaction and over-explored by the media so that they have not been fully implemented and various hospital organisation models co-exist.

# 6. Purchasing, contracting and remuneration systems

GPs and specialists are paid on a salary basis when working for the NHS. The new primary care organisations (FHUs), rather than the individual doctors, are now eligible to receive bonuses regarding their activity or performance as a means to encourage health promotion, disease prevention or disease management actions by GPs. Specialists when they exercise private practice, either in their private offices or in the public hospital setting, are paid on a fee-for-service basis. This dual practice, in conjunction with a fee-for-service in private provision and the presence of private insurance, could induce specialists to be more inefficient in the public area to increase demand for their private practice. To tackle dual practice perverse incentives, three different types of contracts were established, where doctors can choose to have a higher salary and therefore exclusively assigned to the NHS or to have a lower salary, but work less hours or even part-time. In addition, the 2001 Decree-Law 92/2001 regulates doctors' extra hour payments in hospital emergency departments, notably the maximum wage per hour, and corresponding to an exclusive 42 hour work schedule. The goal was to associate extra-hours payments to performance indicators concerning outpatients' visits in hospitals, in health centres and number of patients on surgical waiting lists. Through this measure and independent contracts with doctors and health institutions, the number of patients on surgical waiting lists has decreased. However, there is no available information on the impact of these payments on doctors' behaviour, regarding the dual practice.

Remuneration is determined by the central government. As a result of the need for fiscal consolidation, it is likely that national authorities will strongly control wages in the health sector as part of the wider public administration in the years to come.

Hospitals are now paid prospective global budgets, with the possibility to reallocate resources across cost-categories, as a result of the efforts in recent years to improve efficiency in the sector and move away from retrospective payment.[11] Before 1997, global budgets were based on the previous year's funding and updated according to inflation. But since 1997, the Ministry established a new budget updating rule, which considers diagnosis-related groups (DRG) information (a growing portion) as well as non-adjusted hospital outpatient volume. Hospital remuneration is defined by the government but hospitals managers have been given more autonomy over time and for example they have autonomy in recruiting health staff. In addition to the transfers from the Government, hospitals generate their own revenue, accounting for around 15 to 20% of the total hospital budget, throughout flat-rate user charges for outpatient and diagnostic services, special services (e.g. individual private rooms) and from beneficiaries of the health subsystems or private insurance.

Even though hospitals have a rather strict budget, there hasn't been any negative impact on waiting times. The pressure to increase productivity has, in fact, led to a decrease in the average time and number of people on waiting lists for surgery.

Indeed, when looking at hospital activity, inpatient and day case discharges are much lower than the EU average (respectively 9126.8 vs. 14880.6 and 954.3 vs. 5868.2 in 2005). The proportion of

[11] The OECD score for remuneration incentives to raise the volume of care in Portugal is therefore a little bit than 1 out of 6 as a result of the very limited use of activity based payment i.e. the non-combination of salaries with an element of activity based payment.

surgical procedures conducted as day cases (9.5%) is considerably lower than the EU average of 27.1% in 2005. Hospital average length of stay – ALOS – is below the EU average (6.7 days vs. 7.7 days in 2005).[12] This suggests that there could be room to increase hospital activity. It also suggests that as a result of hospital inefficiency patients may, in fact, be waiting too long for elective surgery. There is perhaps room to improve the number of discharges and the way surgical treatments are conducted. Also, while ALOS for normal birth delivery is actually lower than the OECD average (2.7 days vs. 3.2 days in 2007), the number of caesarean births is significantly higher than the EU average (346.92 vs. 249.88) and about 35% of all live births (and increasing overtime). This is significantly higher than the WHO estimate that the rate of caesarean sections should be between 10% and 15% of all births. This is the result of a combination of patients' misinformation and expectations with doctor's biased behaviour (to fix a delivery date, to induce births prior to the end of term, and remuneration fees especially if in the private sector).

**Pharmaceuticals**

The authorities have implemented a large number of policies to control expenditure on pharmaceuticals. The initial price of all reimbursable medicines is based on clinical performance, economic evaluation, the cost of existing medicines and international prices (based on the minimum manufacturing price in ES, FR and IT). Payback, price-volume agreements and price freezes and cuts are measures to control expenditure directly. The authorities apply reference pricing, whereby the maximum reimbursement level of a product is based on products of same active ingredient, form and dosage (although only for the groups of drugs for which there are generics). There is a positive list of reimbursed products which is based on health technology assessment information. Authorities promote rational prescribing of physicians through compulsory treatment guidelines or practice protocols, prescription targets complemented with monitoring of prescribing behaviour. They also promote education and information campaigns on the prescription and use of medicines. Direct advertisement of reimbursed pharmaceuticals is not allowed. The Infarmed (that regulates and controls pharmaceuticals) publishes an annual statistical report on sales growth of pharmaceutical specialities and impact on the NHS. Portugal has made a very strong effort to promote the use of generics and there is an explicit policy target on generics. The price of generics must be 35% less than the branded product when it enters the market. Initially, generics had an extra 10% reimbursement level but this has been removed after 2005. Nevertheless, generics application for reimbursement is evaluated faster than other medicines. Since 2001, medical prescriptions are in line with the international common designation (ICD), also known as generic name, but still allowing doctors to add the label name. This rule applies only to pharmaceuticals with generics on the market, not to those that continue under patent protection. In 2002, another rule was created, allowing doctors' prescriptions to be replaced with an equivalent cheaper generic by the pharmacist. However, in order to allow for the medicine replacement, the doctor has to indicate it in the prescription form, authorizing the generic or leave it blank. These new regulations, in the medicines department, have led to an increase in the use of generics. Nowadays doctors have to prescribe by active element when generics are available and pharmacists can replace the branded drugs by generics with medical authorization

[12] Although OECD data shows that ALOS for acute care in Portugal was 6.8 days compared to the OECD average of 6.5 days in 2007 and that ALOS can be higher than the OECD average for specific diseases such as acute myocardial infarction (8.5 vs. 7.4 days in 2007).

# 7. Information and monitoring, use of cost effectiveness and health promotion

The use of health technology assessment though still limited is to be gradually introduced for decision-making purposes including the development of treatment guidelines or for defining the benefit package or the extent of reimbursement /cost-sharing. The Infarmed – national agency for pharmaceuticals already conducts health technology assessment to determine reimbursement of pharmaceuticals provided under the NHS.

There are still information gaps in a number of areas and purposeful monitoring (for contracting purposes or performance evaluation) of physician and hospital activity and patient care utilisation (e.g. providers' clinical outcomes, appropriateness of processes, outputs, patient experiences and satisfaction) appears to be limited and not made public.

In order to elaborate hospitals' prospective budgets (see Section 6), allowing a more unbiased and fair allocation of resources, the need to collect more data on an individual patient basis for DRG grouping purposes arose. Therefore, hospitals instituted a basic dataset – "Folha de Admissão e Alta" - which is basically a standardized detailed information sheet about the patient. The centralized version of the system, administered by Institute for Financial Management and Informatics (IGIF) supports the process of adjusting prospective budgets for case-mix and other hospital specificities and consequently produces a more fair allocation of resources.

The central government has set a number of relevant public health objectives (Health Plan 2004-2010) in terms of processes, outcomes and reduction of inequalities and there is some accountability and responsibility for the attainment of targets. As section 1 highlights, there are indeed a number of risk factors to health which require health promotion and disease prevention measures. These could include developing health education and health promotion at school and at work and promoting physical exercise, as well as considering higher excise taxes on tobacco (to complement the smoking ban just recently introduced and which unfortunately met with public and political resistance), alcohol, soft-drinks coupled with tighter road safety measures.

Total and public expenditure on prevention and public health services as a % of GDP (respectively 0.2% and 0.1% in 2006) and as a percentage of total current health expenditure (1.9 and 1.2% in 2006) is well below the EU average (except for the first one, total prevention expenditure as a % of GDP, which is the same as the EU average). Vaccination rates (97% in 2008) are slightly above the EU average (95.8%) although they show ups and downs. Screening rates for breast cancer are relatively high (60.1% of the target population in 2003).

# 8. Challenges

The analysis above shows that a wide range of reforms have been implemented over the years, to a large extent successfully (e.g. the policies to control pharmaceutical expenditure or to strengthen primary care or to reduce hospital use or to improve data collection and monitoring), and which Portugal should continue to pursue and consolidate. The main challenges for the Portuguese health care system are as follows:[13]

[13] The OECD overall efficiency score for Portugal is above its group average (below 2 years compared to the group average of 2.6 years) and the OECD average although through further efficiency of health care delivery it can improve health outcomes and reduce health inequalities. Areas for improvement include: increasing the efficiency (output) of hospital care (inpatient and day case) and outpatient care, introducing an element of activity or performance related payment to physicians and hospital remuneration (using DRGs in the latter case), increasing the availability of

- To continue to enhance primary care provision by increasing the numbers and spatial distribution of GPs and nurses and increasing opening hours in health centres. This could improve access to care while reducing unnecessary use of hospital care and therefore overall costs. This can be helped through implementing the comprehensive e-agenda planned by the authorities.
- To investigate if there is room to include an element of activity related payment in outpatient care (e.g. through the use of mixed payment schemes) to induce a higher number of outpatient consultations.
- To increase hospital output per bed while reducing the use of unnecessary hospital care. In addition to consolidate/ finalise the measures pursued in recent years to reduce duplication and improve efficiency and quality in the hospital sector (e.g. concentration and specialisation of hospitals within regions), authorities could perhaps also consider including an element performance related payment in hospital budgeting procedures notably using information on output and outcomes. They could also consider increasing the supply of follow-up care for long-term care patients so as to reduce the unnecessary use of acute care settings for long-term care patients.
- To continue to improve decision-making coherence across levels of government and between the NHS central authority and its regional branches.
- To improve data collection in some crucial areas such as resources and care utilisation. Better monitoring of activity in the sector could be used for planning and budgeting purposes. This should include efforts to assess and publish evaluations of the quantity and quality of care provided by the various providers for example. To increase the use of health technology assessment in decision-making, including for assessing new equipment or pharmaceuticals and before buying new equipment.
- To further enhance health promotion and disease prevention activities i.e. promoting healthy life styles and disease screening given the recent pattern of risk factors (diet, smoking, alcohol, obesity) in various settings (at work, in school). The authorities could also consider what other complimentary measures such as higher excise taxes on tobacco, alcohol, soft-drinks or tighter road safety measures could complement existing measures including the smoking ban recently introduced.

information on a number of areas (notably providers outputs and outcomes) to create pressures to improve output and quality, and continue to increase the consistency of resource allocation across different levels of government.

# Statistical Annex - Portugal[14]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 8.0 | 8.2 | 8.8 | 8.8 | 9.0 | 9.7 | 10.0 | 10.2 | 9.9 | 10.0 | 10.1 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1036 | 1150 | 1315 | 1349 | 1418 | 1542 | 1611 | 1759 | 1792 | 1948 | 1987 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 5.4 | 5.6 | 6.4 | 6.3 | 6.5 | 7.1 | 7.2 | 7.3 | 7.1 | 7.1 | 7.1 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 696 | 776 | 953 | 964 | 1025 | 1130 | 1160 | 1262 | 1282 | 1383 | 1397 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 7.3 | 7.6 | 8.0 | 8.5 | 8.9 | 9.1 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 13000 | 13900 | 14900 | 15300 | 15800 | 15900 | 16100 | 17300 | 18100 | 18800 | 19000 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | : | : | : | : | 0.6 | 0.9 | : | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | : | : | 2.6 | 2.6 | 2.6 | : | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 1.9 | : | 2.0 | 2.0 | 2.1 | 2.1 | 2.2 | 2.2 | 2.2 | : | : | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | : | : | 1.1 | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.2 | : | : | 1.0 | 1.0 |
| Proportion of the population that is obese | : | 12.8 | : | : | : | : | : | : | 15.4 | : | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | : | 20.6 | : | : | : | : | : | : | 19.6 | : | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 13.2 | 13.0 | 12.9 | 12.3 | 11.6 | 11.4 | 12.3 | 12.2 | : | : | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 79.6 | 79.7 | 80.2 | 80.5 | 80.6 | 80.6 | 81.5 | 81.3 | 82.3 | 82.2 | 82.4 | 82.3 | 82.3 |
| Healthy life years at birth females | 61.1 | 60.7 | 62.2 | 62.7 | 61.8 | 61.8 | 52.0 | 56.7 | 57.6 | 57.3 | 57.2 | 62.3 | 61.6 |
| Life expectancy at birth males | 72.4 | 72.6 | 73.2 | 73.5 | 73.8 | 74.2 | 75.0 | 74.9 | 75.5 | 75.9 | 76.2 | 76.3 | 75.9 |
| Healthy life years at birth males | 59.1 | 58.8 | 60.2 | 59.5 | 59.7 | 59.8 | 55.1 | 58.4 | 59.6 | 58.3 | 59.0 | 61.5 | : |
| Infant mortality | 6.0 | 5.8 | 5.5 | 5.0 | 5.0 | 4.1 | 3.8 | 3.5 | 3.3 | 3.4 | 3.3 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 67.1 | 67.6 | 72.5 | 71.5 | 72.2 | 73.3 | 72.0 | 71.8 | 71.5 | 70.6 | 70.2 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 23.0 | 23.7 | 22.2 | 23.2 | 22.3 | 21.1 | 22.2 | 22.8 | 22.9 | 22.7 | 23.1 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | : | : | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | : | 1.4 | 1.3 | 1.1 | 1.2 | 1.3 | 1.3 | 1.2 | : | : | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | : | : | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | : | 1.2 | 1.1 | 0.9 | 0.9 | 1.0 | 1.0 | 0.8 | : | : | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | : | : | : | : | : | : | : | : | : | : | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 258.1 | 260.9 | 263.5 | 262.2 | 271.5 | 267.5 | 267.8 | : | : | : | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | : | : | 353.2 | 345.3 | 348.8 | 344.8 | 364.7 | : | : | : | : | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 43.4 | 43.7 | 44.2 | 44.5 | 44.7 | 44.9 | 45.6 | : | : | : | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 320.0 | 330.0 | 320.0 | 320.0 | 310.0 | 310.0 | 310.0 | 289.6 | 282.3 | 278.7 | 276.5 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 3.4 | 3.5 | 3.5 | 3.6 | 3.7 | 3.7 | 3.8 | 3.9 | 3.9 | 4.1 | : | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | : | : | : | 9127 | : | : | : | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | : | : | : | 954 | : | : | : | 6120 | 5031 |
| Hospital average length of stay | : | : | : | : | : | : | : | 6.7 | : | : | : | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | : | : | : | 9.5 | : | : | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | 242.3 | : | 293.4 | 310.4 | 329.5 | 329.8 | 351.9 | 380.5 | 391.0 | : | : | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | : | : | 165.3 | 176.5 | 185.9 | 191.1 | 204.2 | 218.9 | 218.5 | : | : | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | 24.2 | : | 23.4 | 24.0 | 24.2 | 22.6 | 23.0 | 22.7 | 22.8 | : | : | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | : | : | 13.1 | 13.7 | 13.6 | 13.1 | 13.3 | 13.1 | 12.7 | : | : | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | : | : | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | : | : | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | 2.5 | 2.4 | 2.2 | 2.0 | 1.9 | 1.9 | 1.9 | : | : | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | 1.5 | 1.4 | 1.5 | 1.3 | 1.2 | 1.2 | 1.2 | : | : | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 96.0 | 94.5 | 95.9 | 97.9 | 93.8 | 95.5 | 94.6 | 93.1 | 96.7 | 96.0 | 96.9 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | : | : | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | 60.1 | : | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[14] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Romania

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (12000 PPS in 2008) is well below the EU average of 25075, although it has more than doubled since 1999 (4700 PPS). Following a period of strong growth, Romania has fallen into a deep recession: GDP growth was -7.1% in 2009; but the economy shows signs of recovery with a forecasted economic growth of 0.8% in 2010 and 3.5% in 2011.[1] In addition there has been a large increase in unemployment rates and a reduction in government revenues resulting in a large structural deficit of 8.5% of GDP in 2008. The provision of international financial assistance (€19.95 bn shared by the EU, OMF, WB, EIB and EBRD) - conditional on the implementation of fiscal consolidation and financial system and structural reforms – has helped to stabilise confidence, and provided the needed liquidity to the Romanian economy. However, fiscal consolidation can have consequences for the health sector. Following years of wage increases the fiscal measures taken under the consolidation programme include the freezing and medium term moderation of public sector wages and the gradual introduction of a unitary public sector pay system but also some cuts in goods and services expenditure. In 2009, the health sector received the lowest proportion of GDP within the last 10 years as a result of a dramatic reduction in contributions and the need to rationalise public spending.[2]

**Recent trends of expenditure**

Total expenditure[3] on health as a percentage of GDP (5.4% in 2008) is well below the EU average[4] (9.6% in 2008), having increased from 4.5% in 1998. Public expenditure on health as a percentage of GDP (4.5%) is also well below the EU average (7.4% in 2008) and indeed the fourth lowest in the EU, though higher than in 1998 (2.8%). The low and rather constant ratios may be partly explained by high GDP growth prior to the 2008-2009 economic crisis (average 6.6% for the 2004-2008 period). Indeed, total (655 PPS in 2008) and public (537 PPS in 2008) per capita expenditure has increased. However, this is still considerably lower than the EU average (2381 PPS and 1826 PPS respectively) and remains the (second) lowest in the EU.

**The role of technology**

Total (1.4%) and public (0.6%) expenditure on pharmaceuticals as a percentage of GDP[5] are below the EU average (1.5% and 1.0% respectively in 2008) although showing a slight increase since 2003. Public and total expenditure on pharmaceuticals as a percentage of total current health expenditure is above the EU average in 2008 (11.6% vs. 11.2% and 25.8% vs. 16.9%) and up from 8.6% and 20.5% in 2003. Total (164 PPS) and public (74 PPS in 2008) pharmaceutical expenditure per capita are some of the lowest in the EU, having nevertheless significantly increased since 2003 (69 PPS and 29PPS). The difference between public and total expenditure reflects a large share of private expenditure on pharmaceuticals. Only a very slight increased in CTS units per 100,000

1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Romania - asisp Annual Report 2009.

3 Data on expenditure for Romania is taken from WHO health for all database and Eurostat.

4 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

5 Data on health expenditure is taken from WHO health data and Eurostat database. From 2003, the variables total and public expenditure used here follow the OECD definition under the System of Health Accounts and include HC.1-HC.9 + HC.R.1.

inhabitants can be observed: from 0.2 CTS units in 2005 to 0.4 in 2008, as part of the general effort to improve quality of care and replace outdated equipment.[6]

**Health status and healthy behaviour – life-styles – risk factors**

Life expectancy in 2008 (77.2 years for women and 69.7 years for men) is much below the EU average and one of the lowest in the EU.[7] Interestingly, healthy life years (62.6 years for women and 60 years for men) are about the EU average. Gender differences in health are high. Life expectancy, in the case of men, shows a consistent increase from 1998 onwards following the decline observed during 1992-1997, a period of substantial economic and political transition. Romania has one of the highest premature mortality (defined as standardised mortality rates all causes, for those aged 0-64) in the EU, and especially high in the case of men: 226 deaths for females (0-64) and 538.7 deaths for males (0-64) per 100 000 inhabitants, numbers that are considerably higher than the respective EU averages in 2008. Infant mortality at 11‰ is also considerably higher than the EU average of 4.3‰, as is maternal mortality.

Mortality rates associated with ischaemic heart disease and diseases of the circulatory systems are some of the EU highest, as are the death rates associated with cervical cancer for women and lung cancer for men. The incidence rate of tuberculosis is high and Romania is considered a priority country by the WHO in this area. Deaths by infectious and parasitic diseases are more common in Romania than in other EU Member States. In 2008, 20.2% of the population was a regular smoker (down from 20.8% in 2000, and 21.4% in 2003).[8] Alcohol consumption is back to the level of 1997, after an unclear but rather decreasing trend (11.8 litres in 2006, compared to 10 litres in 1998, 9.1 in 2000, but 12.6 in 2004). There are also important socio-economic differences in health and certain groups (e.g. the Roma) suffer from worse health and worse access to health care than the majority of the population. All these values on the health status of the population deserve some attention and action to protect population health outcomes and reduce the burden of disease. Some of the above causes of mortality and morbidity can be prevented and/or treated if diagnosed on time.

## 2. Expenditure prospects: population ageing and future health status

Population is projected to decrease by 4 500 000 people from 2008 to 2060. Life expectancy is projected to increase by 6.8 years for men and 6.9 years for women, both larger increases than the average projected increases for the EU as a whole but smaller than other EU Member States with similar life expectancy levels in 2008. The share of the old (65+) is projected to increase by 20 pps (higher than the EU average of 13 pps) and the share of the very old (80+) by 10.3 pps (higher than the EU average of 7.8 pps) from 2008 to 2060.

As a result of ageing[9], health care expenditure is projected to increase by 1.4 pps of GDP (below the average change in the EU of 1.7 pps). Good health (translated by a constant health scenario) reduces the projected expenditure increase by half, from 1.4 to 0.7 pps, highlighting the importance of improving health behaviour in a country with both a low health status and low expenditure levels and currently fiscally constrained.

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6 Data on equipment comes from Eurostat database.
7 Data on life expectancy and healthy life years is from the Eurostat database.
8 Data on life-styles comes from EUROSTAT and WHO health data.
9 I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf).

# 3. Health care coverage and expenditure

Mandatory social health insurance based on employment contributions (defined as a percentage of income and paid by the employer, 7%, and the employee/insured, 6.5%, while those self-employed pay 7%) covers 100% of the population. Many groups including children, dependants, disabled, unemployed, military personnel and war veterans, and those on sickness or maternity leave had free access to health insurance, although recently the authorities have reduced the groups exempted as there were about 5 million contributors and 22 million beneficiaries. 42 District Health Insurance Funds (DHIFs) purchase and reimburse care for their respective population by establishing contracts with care providers, while the National Health Insurance House (NHIH) which regulates and administers the mandatory health insurance establishes contracts with the College of Physicians, defining remuneration systems. There are also two countrywide insurance funds: one for the Ministry of Transport and one for the Ministry of Defence and security agencies. The State budget (through taxation revenues) covers public health services funding (health promotion and disease prevention activities) and capital investment. The basic benefits package is defined yearly in agreement between the NHIH and the Ministry of Public Health, and approved by the Government.

The share of private expenditure on health in total health expenditure (18% in 2008) is below the EU average (22.7% in 2008) as a result of a large reduction in out-of-pocket expenditure (17.6% of total health expenditure in 2008 vs. 32.3% in 2000 and 37.9% in 1998) and the efforts by national authorities to improve access to care by certain groups of the population. However, there remains about 5% of the population that is not correctly insured and cannot access services because they do not pay contributions, lack the appropriate official papers and residency requirements or have not registered with a family doctor/GP. More recently, the authorities have given the uninsured access to emergency care and certain preventive health programmes, through a legal act. Cost-sharing applies to medicines and stays which are longer than a certain threshold in balneary settings. Children, low income individuals and emergency patients are exempted. As it stands, cost-sharing does not necessarily encourage a greater use of primary care services vis-à-vis specialist and inpatient care, or a greater use of more cost-effective services although it encourages the use of generics (see further). There appear to be plans to introduce a system of co-payments coupled with exceptions for those unable to pay. This system should be designed as to encourage the use of primary care vis-à-vis other services if they are not necessary. There are reports of significant informal (non-official) payments. While they may increase the income of physicians, informal payments do not bring additional revenues to the insurance funds, do not encourage a more effective use of services and constitute an additional barrier to access as there are no exemptions for low income or high risk groups. Some studies estimate that they increase out-of-pocket expenditure to more than 30%. Hence, it would be worth investigating if the current cost-sharing could be adjusted to encourage greater use of more effective and cost-effective services: e.g. more use of primary care than specialist care, more health promotion and disease prevention activities (e.g. vaccination), more cost-effective pharmaceuticals, while tackling informal payments.

The distribution of primary care staff and facilities is still problematic in more rural and isolated parts of the country making access difficult in those areas.

# 4. Collection, pooling and allocation of financial resources

In 2007, 80.3% of total health expenditure funding comes from social health insurance contributions plus government sources (taxes at central level), 19.4% comes from out-of-pocket payments, 0.3% from private insurance and the remainder from international organisations. An issue of concern is that the share of non-contributing individuals such as children and pensioners is very high. The authorities have recognised the narrow revenue base and this is why taxation and recently taxation on alcohol and tobacco has been used as a source of resources to the sector. The

government has acknowledged the need for sustained reform of tax administration to improve revenue collection, reduce administrative costs and the direct tax burden for tax payers.

From 1999 to 2002, the 42 DHIFs collected insurance contributions from their respective districts retaining 75% of those revenues and sending 25% to the National Health Insurance Fund which then can reallocate part of the contribution revenues (25%) across funds. Now, the DHIFs collect the contributions only from the self-employed, while a central office of the Ministry of Finance collects all other contributions at national level. The NHIH then allocates the resources to the DHIFs on the basis of a formula whose criteria include number of insured persons and population risks. As stated, the NHIH and the 42 DHIFs use the social insurance contributions to establish contractual arrangements with public and private providers, remunerate doctors, and reimburse medicines. There are two additional country funds; one for transport and one for security. Finally, there are also 42 District Public Health Authorities in charge of implementing national health policy (health promotion and disease prevention programmes) on behalf of the Ministry of Public Health, who defines overall national health strategy. Despite this vast organisation, total and public expenditure in administration and insurance as a % of GDP (0.2% for both in 2008) is respectively below and about the EU average (0.4% and 0.3% in 2008). But total and public expenditure on administration and insurance as a % of total current expenditure on health at 6.4% are well above the EU average in 2007 (4.6% and 3.3% respectively), even though the very recent trend seems to be decreasing. For a country spending overall far less than the EU average in terms of total expenditure on health as a percentage of GDP such percentages dedicated to administration do therefore deserve attention to ascertain if there are possibilities to streamline administrative processes and reduce expenditure in administration. The authorities acknowledge the lack of experience and managerial capacity and the lack of adequate communication and coordination between the institutions as important problems in the sector and have set the need to improve institutional capacity (managerial skill, accountability processes…), improve budgeting and accounting procedures as their policy priorities under public administration reform.

There is an overall budget constraint defined annually for public spending on health – with the Ministry of Health defining the resources allocated to each of the subsectors of care (primary, secondary, tertiary…) – which is often reached due to the scarcity of resources allocated to the sector (as said much lower than the EU average) vis-à-vis the demand for care.

# 5. Providers status, referral systems and patient choice

Public and private provisions coexist. Primary care is provided by independent general practitioners and nurses operating in private practices. Ambulatory specialist care is provided in specialised centres and hospital outpatient departments. Inpatient hospital care is provided in hospitals mostly publicly owned and increasingly the responsibility of local authorities. All these providers establish contracts with the DHIFs.

The total number of practising physicians per 100 000 inhabitants (222 in 2007 vs. 192.8 in 2000) is well below the EU average (324.1 in 2007) being the second lowest in the EU. This may explain the difficulties in availability and distribution of physicians across the country. Data on the physician skill-mix indicates that the number of GPs per 100 000 inhabitants (80.9 in 2006) is below the EU average but still one of the highest in the EU, as part of authorities' long term effort to improve primary care provision. The number of nurses (639.9 in 2007) per 100 000 inhabitants is below the EU average of 830.[10] Romania has suffered heavily from staff migration to other EU countries

[10] Data on health care staff comes from EUROSTAT database.

where qualified health staff was needed and wage levels were higher.[11] About 46% of all physicians were more than 45 years of age in 2007 which indicates that ageing can also affect the provision of health. In order to retain staff, the authorities had increased wages in the sector but this trend has been reversed and the hiring of new personnel has been put on hold with the need to improve fiscal imbalances as a result of the crisis. While this may be manageable in the short run and in the context of a global economic downturn, it may not be sustainable from a human resources point of view when recovery starts in other EU countries. In the long-run, authorities need to develop efforts to implement a comprehensive human resources strategy to motivate and retain staff to the sector in view of possible staff shortages due to migration and ageing.

In the last decade, national authorities have made a significant effort to enhance primary care provision and strengthen the referral system from primary care to specialist doctors and the gatekeeping role of GPs (to reduce the unnecessary use of specialist and hospital care). All inhabitants have to register with a GP, who acts like a family doctor and as a gatekeeper referring patients to specialist and hospital care. However, despite it being mandatory, many have not yet registered with a GP and the referral system is often bypassed by some groups of the population. In addition, urgent /after hours access to primary care services is very limited resulting in an unnecessary use of hospital emergency wards. Patients can choose their GP and choose the specialist and hospital after referral. This referral and coordination role is to be further enhanced through the use of ICT systems and the implementation of electronic patient records and electronic monitoring of prescriptions, which can help control expenditure in the long-run.

Romania has seen a large reduction in the number of acute care beds per 100 000 inhabitants in the last decade (451 in 2008 vs. 525.1 in 1998) but its number is still higher than the EU average (383.2). Many hospital beds in Romania are however not necessarily used for acute care but for other conditions such as long-term hospitalisation of patients with chronic diseases. Further reductions in hospital capacity appears to be an area where further improvements can still be made but the total number of beds and its use will, in the medium and long-run strongly depend on the changes in the provision of long-term care services implemented in Romania (which can reduce bed blocking in acute care settings) as well as changes in surgical practices (see further).

Public (3.1%) and total (3.1%) capital expenditure as percentage of total health expenditure is below the EU average (2.4% and 4.1% in 2008), despite a steady increase in recent years.

# 6. Purchasing, contracting and remuneration systems

Payments systems have evolved much over the years involving a mixture of remuneration schemes. GPs receive a mix of capitation and fees for defined activities (health promotion, disease prevention and disease management activities). This mixed system intends to render primary care more attractive and provide incentives for primary care provision including some health promotion, disease prevention activities and disease management. Ambulatory specialists are remunerated on a fee-for-service basis while hospital staff is paid on a salary basis.

Hospital use and admissions rates are said to be relatively high, partly reflecting underutilisation of primary care and outpatient services and a referral system which is not yet 100% effective, although the average length of hospital stay (7.8 days) is slightly below the EU average (7.9 in 2008). There is no information on the proportion of hospital surgery done as day cases and whether this has increased over the decade. Further reducing the emphasis on hospital care, by further reducing hospital capacity, increasing bed occupancy rates and bed turnover rates, increasing the number and

[11] During the first year of EU membership 4 700 doctors (10% of total) asked for the necessary papers required to work elsewhere in the EU (ASISP).

share of day case surgery and outpatient cases, and concentrating high-tech complex care in a few facilities (centres of excellence) are perhaps areas where further improvements can still be made and indeed priorities the authorities may wish to pursue as they could lead to better value for money in the sector. Acute care hospitals remuneration is based on prospective activity-based payment using DRGs and fee-for-services or flat rate per case. Although significantly improved and based on complex criteria, the basis for establishing contracts between the DHIFs and the various providers could be further improved to favour cost-effective interventions in the long-run (see further).

**Pharmaceuticals**

Imported medicines now come from Western Europe rather than the former Soviet Union, which has resulted in a large increase in prices and costs. In order to control overall expenditure, the authorities now implement a number of policies. The initial price decision is based on a) international manufacturing prices (the minimum price of AT, BG, CZ, DE, DK, HU, IT, LT, PL, SK, UK), while the authorities use discounts/rebates and payback practices, together with reference pricing whereby the maximum reimbursement level of a new drug is based on the lowest price of existing drugs that have the same active ingredient and form, and positive lists. Moreover, the authorities have progressively provided more information and training to physicians and monitor their prescription patterns. In addition, there is a defined annual budget for pharmaceutical expenditure. Finally, doctors are obliged to prescribe by active ingredient and not by the commercial names of medicines and pharmacies are encouraged to suggest the generic medicine when asked for a branded good.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Data has much improved in recent years but there is still some fragmentation in data collection systems. Information on and monitoring of physician and hospital activity could however be useful in a system that separates the purchasing from the provision functions to establish contracts and define prospective budgets.

Currently there is no structure to conduct health technology assessment. Such an assessment would require additional administrative capacity and scientific know-how. The NHIH has nevertheless created a planning and prognosis centre. Therefore, cost-effectiveness knowledge is not yet used to determine the benefit package or the extent of cost-sharing for different types of care or develop treatment guidelines to harmonise and rationalise medical practices across the country although recent reforms assume this possibility in the near future.

Successive governments have defined public health priorities with the objective to continuously improve the health status of the population. As section 1 highlights, there are indeed a number of risk factors to health which need addressing. In addition, vaccination rates (97% for polio) are above the EU average but have declined since 2000 and cancer screening programmes are opportunistic or limited to certain regions (only one region appears to have an organised screening programme for cervical cancer). Total (0.3%) and public (0.3%) expenditure on prevention and public health as a % of GDP is nevertheless about and above the EU average (respectively 0.3% and 0.2% in 2008); while total (6%) and public (5.9%) expenditure on prevention and public health as a proportion of total current health expenditure on health are far above the EU average of respectively 2.7% and 2.1% in 2008, denoting some recent stronger focus on health promotion and disease prevention and authorities' emphasis to improve life-styles.

# 8. Challenges

The analysis above shows that a number of reforms have been implemented over the years aiming to improve access to care and the efficiency of care delivery and which Romania should continue to pursue. Reforms have met with a number of obstacles and there is still room for improvement in a number of areas. The main challenges for the Romanian health system are as follows:

- To make more use of cost-effectiveness information, as planned, in determining the basket of goods and the extent of cost-sharing and define the latter to induce cost-effective behaviour. To explore if current cost-sharing could be adjusted to encourage greater use of more effective and cost-effective services: e.g. more use of primary care than specialist care, more health promotion and disease prevention activities (e.g. vaccination), more cost-effective pharmaceuticals.
- To improve the basis for more sustainable and larger financing of health care in the future to improve access as well as quality of care and its distribution between population groups and regional areas.
- To define a comprehensive human resources strategy to ensure a balanced skill-mix, avoid staff shortages and motivate and retain staff to the sector.
- To continue to enhance and better distribute primary health care services and basic specialist services to improve equity of access and the effectiveness and efficiency of health care delivery. To continue the efforts to ensure an effective referral systems from primary to specialist and hospital care and improving care coordination between types of care, notably by ensuring that users register with their GP and through the development of electronic patient records in the future.
- To continue the efforts to decrease over and unnecessary use of hospital inpatients care by decreasing the number of hospital beds, through hospital specialisation and concentration where possible, by increasing day case surgery, by improving the provision of after-hours primary care services, by strengthening the referral system, by enhancing the provision of long-term care services, and by reducing the number of uninsured who tend to use emergency services (for which they are covered) rather than primary care services (not covered).
- To continue to improve accountability and governance of the system and identify possible cost-savings in the health sector administration, as it currently involves many national and district institutions. To ensure that resource allocation between regions is not detrimental to poorer regions.
- To continue to improve data collection and monitoring of inputs, processes, outputs and outcomes so that regular performance assessment can be conducted and use to continuously improve access, quality and sustainability of care.
- To clearly establish public health priorities and enhance health promotion and disease prevention activities, i.e. promoting healthy life styles and disease screening given the recent pattern of risk factors (smoking, alcohol) and the pattern of both infectious and non-infectious diseases.

# Statistical Annex - Romania[12]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 4.5 | 5.2 | 5.2 | 5.4 | 5.7 | 5.3 | 5.5 | 5.5 | 5.1 | 5.2 | 5.4 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 206 | 243 | 258 | 301 | 343 | 346 | 404 | 432 | 462 | 544 | 655 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 2.8 | 3.4 | 3.6 | 3.6 | 3.8 | 4.5 | 4.1 | 4.4 | 4.1 | 4.3 | 4.5 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 128 | 159 | 179 | 200 | 229 | 294 | 301 | 348 | 368 | 446 | 537 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 3.6 | 3.8 | 4.1 | 4.4 | 4.7 | 4.9 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | : | 4700 | 5000 | 5500 | 6000 | 6500 | 7400 | 7900 | 9100 | 10400 | 12000 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | : | : | : | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | 0.1 | 0.1 | 0.1 | 0.2 | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | : | : | 0.2 | 0.2 | 0.3 | 0.4 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 0.9 | : | : | : | : | 1.1 | 1.5 | 1.6 | 1.4 | 1.4 | 1.4 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | : | : | : | : | : | 0.5 | 0.5 | 0.7 | 0.6 | 0.6 | 0.6 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | 8.6 | : | : | : | : | : | : | : | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | : | : | 20.8 | : | : | 21.4 | : | : | : | : | 20.2 | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 10.0 | 9.0 | 9.1 | 12.0 | 10.8 | 10.8 | 12.6 | 10.5 | 11.8 | : | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 73.8 | 74.2 | 74.8 | 74.9 | 74.7 | 75.0 | 75.5 | 75.7 | 76.2 | 76.9 | 77.2 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | : | : | : | : | : | : | : | 62.3 | 62.6 | 62.3 | 61.6 |
| Life expectancy at birth males | 66.3 | 67.1 | 67.7 | 67.5 | 67.4 | 67.7 | 68.3 | 68.7 | 69.2 | 69.7 | 69.7 | 76.3 | 75.9 |
| Healthy life years at birth males | : | : | : | : | : | : | : | : | : | 60.4 | 60.0 | 61.5 | : |
| Infant mortality | 20.5 | 18.6 | 18.6 | 18.4 | 17.3 | 16.7 | 16.8 | 15.0 | 13.9 | 12.0 | 11.0 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | : | : | : | : | : | : | : | : | : | : | : | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 62.1 | 65.5 | 67.7 | 65.9 | 66.7 | 84.8 | 74.6 | 80.4 | 79.7 | 82.1 | 82.0 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 37.9 | 34.5 | 32.3 | 34.1 | 33.3 | 14.8 | 24.1 | 18.5 | 19.8 | 17.2 | 17.6 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | : | : | : | : | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | 5.4 | 4.4 | 3.4 | 6.4 | 6.4 | 2.8 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | : | : | : | : | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | : | 5.4 | 4.4 | 3.4 | 6.4 | 6.4 | 2.8 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | : | : | : | : | : | : | 47.6 | 46.5 | 46.8 | 46.0 | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | : | 188.2 | 192.8 | 199.6 | 196.0 | 199.6 | 208.1 | 217.4 | 215.8 | 222.0 | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | : | : | 530.1 | 549.5 | 566.8 | 554.3 | 560.3 | 571.0 | 586.9 | 639.9 | : | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | : | : | : | : | : | : | : | 65.8 | 80.9 | : | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 525.1 | 520.0 | 537.9 | 555.6 | 528.7 | 452.3 | 443.5 | 456.3 | 456.6 | 448.1 | 451.0 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 6.8 | 6.4 | 5.1 | 5.4 | 5.7 | 5.6 | 5.8 | 5.9 | 5.6 | 5.6 | 5.4 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | 21274 | 22495 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 6120 | 5031 |
| Hospital average length of stay | : | : | : | : | : | : | : | : | : | 7.8 | 7.8 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | : | : | : | : | : | : | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | : | : | : | : | 69.5 | 108.1 | 122.1 | 128.0 | 141.5 | 163.9 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | : | : | : | : | : | 29.2 | 34.3 | 57.9 | 53.0 | 65.5 | 73.7 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | : | 20.5 | 27.0 | 28.3 | 28.0 | 26.5 | 25.8 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | : | 8.6 | 8.6 | 13.4 | 11.6 | 12.3 | 11.6 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | : | 0.3 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | : | : | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | : | : | 6.3 | 6.7 | 6.7 | 5.4 | 6.7 | 6.0 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | : | : | : | 6.3 | 5.8 | 6.2 | 5.2 | 6.5 | 5.9 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 98.0 | 98.0 | 99.0 | 98.8 | 98.8 | 97.2 | 97.2 | 96.9 | : | : | : | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | : | : | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[12] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Slovenia

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

The gap between Slovenian (22800 PPS in 2008) and average EU GDP per capita (25075 PPS) has been narrowing down at a fast pace over the last decade (13300 PPS vs. 17584 PPS in 1998) although showing an opposite trend for 2009 (20602 PPS vs. 23552 PPS). Indeed, the negative impact of the economic and financial crisis on the Slovenian economy has been very strong (GDP growth slowdown from 6.8% in 2007 to 3.5% in 2008 and -7.8% in 2009). In the years to come a slow but robust recovery is expected (1.1% in 2010 and 1.8% in 2011).[1]

**Recent trends of expenditure**

In 2008 total expenditure on health care[2] in Slovenia amounted to 8.3% of GDP, having slightly increased from 7.9% in 1998. This is below the EU average[3] of 9.6%. The same applies to public expenditure on health care of 6% of GDP which is below 7.4% of the EU and has remained broadly constant over the last decade (+0.1%). Also when measured in per capita terms, both total and public health care expenditure are lower than the EU average: 1899 PPS vs. 2381 PPS and 1372 PPS vs. 1826 PPS respectively (figures for 2008).

**The role of technology**

The Slovenian health care sector is slightly less equipped than the other EU countries in diagnostic and therapeutic units. In 2007, the numbers of MRI units (0.3), angiography units (0.5) and CTS (1.1) per 100000 inhabitants were well below the EU average (0.86, 0.7 and 1.7 respectively).[4] Total expenditure on pharmaceuticals is above the EU average when measured as % of GDP (1.6% vs. 1.5% in 2008) and calculated as percentage of total current health expenditure (19.7% vs. 16.9% in 2008).

**Health status and healthy behaviour – life-styles – risk factors**

The indicators of health status of the Slovenian population appear similar to those of the EU average. Life expectancy, both of women (82.6 years) and of men (75.5 years) is about the same than in the other EU countries (respective averages of 82.3 and 75.9 years), while healthy life expectancy matches the EU average for women (62.3 years) but is slightly lower for men (58.6 vs. 61.5 years).[5] Infant mortality of 2.1‰ (2008) is the second lowest in the EU, well below the EU average of 4.4‰.

Over the last decade the main non-communicable diseases accounted for about 80% of all deaths in Slovenia; external causes for 9%; and communicable diseases for less than 1%. In total, 38.8% of all deaths were caused by diseases of the circulatory system, followed by neoplasms (30.3%), ischaemic heart disease (10%), injuries and poisoning (9.9%) and cerebrovascular diseases (8.4%).[6] Mortality by age and sex shows a pattern similar to the European averages.

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1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on expenditure is taken from Eurostat and OECD health data.

3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 Data on technology is taken from OECD health data and Eurostat database.

5 Data on life expectancy and healthy life years is taken from the Eurostat database. Data on life-styles is taken from the Eurostat database and the OECD health data.

6 WHO Regional Office for Europe (2009), Highlights on health in Slovenia 2007.

The lifestyle-related risk factors are in general less prevalent than in the other EU countries. Percentage of regular smokers (18.9% in 2007) is below the EU average (22.7%) and alcohol consumption (10.9 litres per capita in 2008) is close to the EU average number (10.6 litres)

# 2. Expenditure prospects: population ageing and future health status

The Slovenian population is projected to decrease from 2 million in 2008 to 1.8 million in 2060. Life expectancy is projected to increase by 9 years for men and 6.7 for women, i.e. somewhat faster than in the EU on average. Slovenia is expected to be strongly affected by the ageing process. From already high starting levels, the share of the old population (65+) is expected to more than double (from 16.1% to 33.4%) and the share of the very old (80+) to increase almost fourfold (from 3.5% to 13.9%).

Driven by the change in demographic structure, public spending on health care is projected to increase by 29% or 1.9 pps of GDP, slightly more than 25% average increase in the EU (1.7 pps).[7] Good health (translated by a constant health scenario) reduces the projected expenditure increase to 1.0, highlighting the importance of improving health behaviour. Such a large projected growth in health care spending, together with considerable expected increase in the other age-related items of public expenditure and the unfavourable current budgetary stance, results in high risk for the long-term sustainability of the Slovenian public finances.

# 3. Health care coverage and expenditure

Slovenian health system is a Bismarckian system based on statutory health insurance, which is fully regulated by national legislation and administered by the single insurer, Health Insurance Institute of Slovenia (HIIS), an independent from government public institution.

The health insurance system is mandatory, providing universal coverage. The insurance covers the contributors (employees, pensioners, farmers, self-employed), their dependants (subsidized by the compulsory health insurance), but also unemployed and individuals without income (whose contributions are paid by the National Institute for Employment, central government and municipalities). The benefits package comprises a wide coverage of primary, secondary and tertiary services, pharmaceuticals, medical devices, long sick leave and travel's costs. Nevertheless, private sources account for 27.8% and exceed the EU average (22.7%)[8] which illustrates that when accessing health-care services, people increasingly rely on private sources expenditures. Private sources consist of two main sources of financing: out-of-pocket payments, representing around 13.4% and voluntary health insurance accounting for 12.7% (2008). Private expenditure has been increasing considerably over the recent years: its average nominal yearly growth over the period 2000-2008 has amounted to 9.6%. Voluntary health insurance has two main forms: complementary VHI provides insurance to cover co-payments only, and supplementary VHI provides insurance for a higher standard and a wider scope of benefits than the mandatory insurance. Since public entities have gradually reduced health financing over the last decade, the share of the population holding voluntary complementary health insurances has increased a lot and about 85% of the whole population in 2008 were covered.[9] To avoid cream-skimming by insurers and to equalize the variations in risk structure, a risk-equalisation scheme was introduced in 2005 to ensure equal premiums for all insured individuals, no matter what age group they fall into.

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[7] I.e. considering the "pure ageing scenario" of the projections (see the 2009 EPC/EC Ageing report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf).

[8] OECD health data combined with Eurostat data from 2003 for OECD Member States.

[9] Source: Ministry of Health.

Out-of-pocket payments exist as two main mechanisms: cost sharing and direct payments. Cost sharing takes the form of flat rate co-payments and applies to most types of health care services and to all patients with the exception of some vulnerable social groups (children, unemployed, those with income below a given threshold, chronically ill). However, since large majority of patients are covered by voluntary insurance covering complementary co-payments, this form hardly exists in the form of direct payments. The latter are used, however, in case of visits to the providers who do not have a contract with the HIIS, to the specialists without a GP's referral and to the private dentists. The out-of-pocket payments are also used to avoid waiting times and pay for extra services, not included in the general benefit package of the social insurance system.

# 4. Collection, pooling and allocation of financial resources

Compulsory health insurance contributions constitute the major source of health care financing with 67.1% of total expenditure (2006).[10] General national and municipal-level taxation represents 5.2% of expenditure, and is mostly devoted to the financing of capital investments in hospitals, specialised health institutions at national and regional levels, national health programmes, medical education and research (Ministry of Health) and public health centres and public pharmacies (municipalities).

Contributions to fund the HIIS are related to earnings from employment. The contribution rate amounts to 13.45% of gross income, out of which 6.36% is paid by the employee and 7.09% by the employer. They represent the major source of public funding. The other public source of finance is general taxation. This non-earmarked revenue allocated for health is estimated annually and accounted for about 0.95% of the total state expenditure and 1.2% of municipalities' total expenditure in 2005.[11]

Within each annual financial plan the HIIS defines a maximum overall amount to be spent on health services in the upcoming year. This annual budget is defined in cooperation with the Ministry of Health and the Ministry of Finance, taking into consideration the macroeconomic situation which affects the expected revenues of the system. The national health budget is determined at the national level, with no further geographical disaggregation (local tax revenue is managed separately by local authorities according to their own criteria).

Purchasing process is composed of two stages. First stage consists of partnership negotiations with different groups of health care providers over the volume of services to be provided and reimbursed by the HIIS. The second stage involves the individual providers in the negotiations on the type and volume of services that will be provided, the tariffs for these programmes and services, methods of payment, quality requirements, the supervision of the implementation of the contract and the individual rights and responsibilities of the contracting parties. The reimbursements are capped, thus the services provided in excess of the contracted amounts are not paid for. The same applies to the services which have been contracted but actually not provided.

Voluntary health insurance is provided by one non-profit public insurance company obliged by law to provide VHI for co-payments and three profit-oriented private insurance companies.

According to the OECD, the public expenditure on health administration and health insurance as a percentage of GDP (0.3%) and as a percentage of current health expenditure (4.0%) is slightly below the EU average in 2008 (respectively 0.4% and 4.4%). Over the last decade, major efforts

[10] Statistical Office of the Republic of Slovenia 2009.
[11] Source: Ministry of Finance.

have been done to reduce administrative costs and improve the general management of the sector and ,given the system's organization and regulation, Slovenia should continue in that direction.

# 5. Providers status, referral systems and patient choice

Primary health care is provided by a mix of public and private providers. Public providers include health care centres and health stations, institutions established and owned by local communities. Private providers are individual health care professionals working individually or in group practices offering various combinations of services and specialties.

The patients can choose the primary care provider among those who have a contract with the HIIS and have the right to change them once a year. The personal physician plays the role of the gatekeeper since his referral is necessary to proceed to specialist and hospital care. The referral is not required only in case of chronic diseases or long-term treatment when many consecutive contacts with a specialist are necessary. Moreover, patient can select a private physician of his choice, but must cover all costs out of pocket.

Specialist outpatient care is provided in hospitals or private health facilities, while ambulatory services are provided in the polyclinics affiliated with hospitals, in community health centres or in private specialists' offices.

It is a common practice that specialists work part time in health centres, based on an employee contract. There exist also some fully private polyclinics, having or not contacts with HIIS and paid either in the form of social insurance reimbursement, or as out-of-pocket payments.

The number of practising physicians (241 per 100000 inhabitants), and especially that of general practitioners (50 per 1000000 inhabitants) was in 2008 significantly below the averages for the whole EU (321.6 and 94.1, respectively), which suggests under provision and problems with access to the primary health care, especially in light of the gatekeeper function exercised by the latter. Number of nurses, however, is in line with the EU averages (794 per 100000 in Slovenia vs. 879 in the EU). Due to a lack of providers (for example, dental care) or long waiting times for some specialized services and surgeries, access to some health care services remains limited. Specific incentives could be developed to promote and encourage staff to work in some specialities currently in shortage on the one hand and to decrease geographical disparities on the other hand and more generally, the human resources strategy needs to tackle staff and population ageing in the future.

There were 29 hospitals in Slovenia in 2006 and a large majority of them were state owned. Although legal provisions allow for establishment of new private hospitals, privatisation remained limited and there have not been significant private investments in health infrastructure.

The capacity of acute care hospitals (385 beds per 100 000 inhabitants), average length of stay (7.7 days) and the number of inpatient discharges (16154 per 100 000 inhabitants) are similar to the average figures for the EU and suggest an efficient utilisation of hospital care. However, the data about the proportion of surgical procedures conducted as day cases is low compared to EU average (13.3% vs. 20.8% in 2008). This suggests that a strategy to increase day case interventions should be then encouraged also to reduce waiting times for surgery.

# 6. Purchasing, contracting and remuneration systems

Payment mechanisms and levels are regulated based on annual contractual arrangements between the HIIS and health care providers as explained before. Each programme has an annual budget at the national level, which is then translated into caps in budgets for individual providers.

Primary care providers are paid through a combined system of capitation and fee-for service payments. The reimbursable volume of services is outlined in prospectively determined annual contracts. Half of the value of these services is paid per capita for the patients registered with the physician, while the other half on the basis of fee-for-service, according to the number of services provided.

Outpatient specialist care is remunerated on the basis of fee-for-service, according to an HIIS classification of services, whereas the volume of services provided is outlined in the contracts.
In order to promote the preventive services and reduce the specialists' referrals, one of the eligibility criteria for HIIS payments is the implementation by the providers of prospectively determined volumes of preventive services.

Hospital care is reimbursed according to a Diagnosis-Related Group (DRG) model, which replaced in 2003 the per-case payment system, which consisted in payments for complete inpatient episodes, and as such did not accounted for the differences in severity of cases and provided a perverse incentive to increase the number of single inpatient admissions. DRG model is based on a classification of 653 diagnosis-related groups, which are defined by the clinical diagnosis, procedures undertaken and length of treatment. Payment is based on the volume and value of programmes determined prospectively in the contract. The annual volume of a health care programme reimbursable by the HIIS is limited by the budget, and defined on the basis of the respective programme executed during the previous year, adjusted by the additional annual programmes aiming at improving access to health services and the efficiency of providers. The cost weight used to calculate the value of case-mix is calculated as the relative price of each DRG in comparison to the average DRG price at national level. Since 2005, two procedures, dialysis services and transplantation programme, have been excluded from the prospective DRG model and reimbursed retrospectively on the fee-for-service and per-case basis respectively.

The hospitals' employees are salaried under general rules, with some specialists having a special health care contract. Different payment mechanisms are valid for certain types of services: for non-acute impatient care reimbursement is based on prospectively determined number of bed days, for psychiatric care and rehabilitation programme on prospectively determined number of cases, dental services on the fee-for service model.

**Pharmaceuticals**
In 2008 pharmaceutical spending accounted for 1.6% of GDP and 19.7% of total health care expenditure, slightly above the average figures for the EU (1.5% and 17.1% respectively).

An international pricing system determines ex-factory prices with respect to the level in comparable EU Member States while reference pricing uses the national system of reference prices for mutually interchangeable pharmaceuticals. The system is based on generic substitution of products officially recognised as mutually interchangeable (based on their essential similarity) and listed in a national list of substitutable pharmaceuticals. The lowest drug price in the same group will be used as reference price.

Members of a special committee, formed of experts from various health care fields, decide the levels of reimbursement based on cost-benefit analyses and available financial resources. A positive list details pharmaceuticals that are reimbursable (75% reimbursed by the compulsory insurance and the rest either by complementary insurance either by out-of-pocket payments).

Each Physician has a prescribing number in order to control the volume and the type of pharmaceuticals prescribed. Appropriate penalties can be issued by the HIIS to contracted physicians in case of irregularities.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Information and communication technologies are still not sufficiently spread in the Slovenian health care system, although their introduction dates back to the early 1990s. A number of projects have been implemented over the last years aiming mainly at the consolidation of the reporting systems and their coordination between different levels of care. An important step in the development of a national health information system was the introduction, as early as in 1999, of the health insurance card. This will result in more reliable patient-level information on the dispensed pharmaceuticals, on the differences in medical doctors' prescribing behaviour and on the quality and adequacy of care in general.

In 2005, the eHealth 2010 Strategy was launched, aiming at increasing the active role and responsibility of citizens in preserving their health, providing health professionals with safe and reliable access to key information in electronic medical records, facilitating planning and management of health care system on the basis of high quality and trustworthy data. A number of projects have been launched since, evaluated and managed by the newly established national-level bodies for planning, coordination, management and control of the development and application of health care informatics.

Health technology assessment is performed at a very basic level. An important step forward has been the launch of a programme for the standardisation of equipment and the introduction of technical guidelines. In 2005, a standard procedure for assessing and implementing new or adapted health care programmes and other new methods of work among the programs of health care in Slovenia was introduced. It was revised then in 2009. In 2010 Ministry of Health started with activities to set up an HTA network for the organized and systematic assessment of health care technologies (old and new) for all submitted health technologies proposals.

Health prevention and promotion is mainly done through State's and HIIS's large scale programmes, GPs and nurses thanks to a strong emphasis given on health promotion and prevention during education and employers for occupational diseases. In 2008, public expenditure on prevention and public health services as a % of GDP (0.3%) and as a percentage of total current health expenditure (3.9%) is above the EU average (0.3% and 2.7% respectively). The most recent health promotion campaigns included[12]; tacking regional health inequalities, HIV/AIDS prevention, anti-smoking and alcohol policy, food and nutrition, enhancing physical activity, improving mental health and reducing all forms of addiction or dependency. Vaccination rates for polio are high (97%) and have increased (90% in 1998). The proportion of screening rates for cervical cancer is also quite high (70.5% of the target population in 2007).

[12] National Institute of Public Health and Ministry of Health.

# 8. Challenges

Following the analysis above, the main challenges for the Slovenian health system currently are as follows:

- To ensure continuous development of human resources and provide incentives for professionals in order to boost the supply of physicians, especially general practitioners and specialisations in shortages like dental physicians.
- To tackle the issue of long waiting lists for some health care services by more efficient allocation of human and capital resources between sectors and specialisations through active purchasing of services by public health insurance institute and by promoting day cases for surgical procedures.
- To promote effective use of the new medical and information technologies. However, given the size of the public health budget, it may be useful to carefully consider each further addition to the existing high-cost equipment and whether they are cost-effective.
- To improve geographical access to doctors especially between urban and rural areas through incentives system directed at doctors, especially primary care staff.
- To stress new forms of care such as non-acute care, home care, home nursing and other forms of long-term care.
- To strengthen coordination between public and private provision of care at the national as well as local level.
- To strengthen the role of primary sector and family doctors in a form of gatekeeping as well as coordination and integration of care among different health care levels.
- To promote use of quality indicators and patient related oriented measures for health care procedures.
- To strengthen the role of health promotion and disease prevention in the overall health care system and in other sectors of economy (industry, workplace, education, culture etc).

# Statistical Annex - Slovenia[13]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 7.9 | 7.9 | 8.3 | 8.6 | 8.6 | 8.6 | 8.4 | 8.4 | 8.2 | 7.8 | 8.3 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1052 | 1129 | 1264 | 1360 | 1458 | 1494 | 1569 | 1657 | 1709 | 1727 | 1899 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 5.9 | 5.9 | 6.1 | 6.3 | 6.3 | 6.2 | 6.1 | 6.1 | 6.0 | 5.6 | 6.0 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 794 | 854 | 936 | 997 | 1071 | 1074 | 1145 | 1191 | 1238 | 1244 | 1372 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 6.8 | 7.3 | 7.8 | 8.2 | 8.4 | 8.5 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 13300 | 14400 | 15200 | 15800 | 16800 | 17300 | 18700 | 19700 | 20700 | 22100 | 22800 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | : | : | : | 0.2 | 0.3 | 0.3 | : | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | 0.4 | 0.5 | 0.5 | 0.5 | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | : | 0.9 | 1.0 | 1.1 | 1.1 | : | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | 0.1 | 0.1 | 0.1 | 0.1 | : | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | : | : | : | : | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.5 | 1.6 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | : | : | : | : | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | 0.9 | 0.9 | 1.0 | 1.0 |
| Proportion of the population that is obese | : | : | : | 12.3 | : | : | : | : | : | 16.4 | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | : | 24.5 | : | 23.7 | : | : | : | 23.0 | 18.5 | 18.9 | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 8.3 | 7.9 | 11.6 | 7.8 | 12.5 | 12.2 | 13.9 | 10.5 | 12.4 | : | 10.9 | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 79.2 | 79.5 | 79.9 | 80.4 | 80.5 | 80.3 | 80.8 | 80.9 | 82.0 | 82.0 | 82.6 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | : | : | : | : | : | 59.9 | 61.0 | 62.3 | 60.9 | 62.3 | 61.6 |
| Life expectancy at birth males | 71.3 | 71.8 | 72.2 | 72.3 | 72.6 | 72.5 | 73.5 | 73.9 | 74.5 | 74.7 | 75.5 | 76.3 | 75.9 |
| Healthy life years at birth males | : | : | : | : | : | : | : | 56.3 | 57.6 | 58.6 | 59.4 | 61.5 | : |
| Infant mortality | 5.2 | 4.5 | 4.9 | 4.2 | 3.8 | 4.0 | 3.7 | 4.1 | 3.4 | 2.8 | 2.1 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 98.0 | 98.0 | 98.0 | 98.0 | 98.0 | 99.0 | 99.0 | 99.0 | 99.0 | 99.0 | 100.0 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 75.5 | 75.7 | 74.0 | 73.5 | 73.4 | 71.9 | 72.9 | 71.9 | 72.4 | 72.0 | 72.3 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 11.8 | 12.4 | 11.5 | 10.5 | 11.6 | 11.9 | 11.7 | 12.5 | 11.8 | 13.3 | 13.4 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | : | : | : | 0.4 | 0.4 | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | 4.7 | 4.8 | 4.3 | 4.3 | 4.4 | 4.3 | 4.0 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | : | : | : | : | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | : | : | : | 2.7 | 2.9 | 2.6 | 2.3 | 2.2 | 2.2 | 1.8 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 50.2 | 45.6 | 48.9 | 48.7 | 49.5 | 51.1 | 34.6 | 51.8 | 52.8 | 54.3 | 55.5 | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 216.8 | 214.2 | 216.9 | 218.9 | 224.2 | 226.3 | 231.2 | 236.0 | 237.3 | 238.4 | 238.0 | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | : | : | 685.0 | 711.8 | 715.8 | 736.6 | 741.9 | 749.5 | 762.1 | 773.0 | 794.0 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | : | : | 45.7 | 46.3 | 46.7 | 46.3 | 46.4 | 48.7 | 48.8 | 50.0 | 50.0 | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 461.6 | 458.5 | 446.1 | 424.0 | 414.6 | 401.3 | 385.1 | 388.2 | 384.4 | 378.4 | 385.4 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 7.1 | 7.4 | 6.8 | 6.7 | 6.4 | 6.9 | 7.0 | 7.2 | 6.6 | 6.7 | 6.7 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | : | : | 15472 | 15358 | 16045 | 16168 | 16154 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | : | : | 1665 | 2026 | 2142 | 2234 | 2484 | 6120 | 5031 |
| Hospital average length of stay | : | : | : | : | : | : | 7.9 | 7.9 | 7.7 | 7.7 | 7.7 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | : | : | 9.7 | 11.7 | 11.8 | 12.1 | 13.3 | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | : | : | : | : | 305.7 | 324.4 | 342.0 | 350.4 | 342.0 | 360.0 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | : | : | : | : | : | 186.3 | 198.0 | 209.2 | 214.8 | 204.9 | 213.0 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | 22.1 | 21.8 | 21.7 | 21.7 | 21.7 | 20.8 | 19.7 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | : | : | : | : | 13.6 | 13.3 | 13.3 | 13.3 | 13.3 | 12.5 | 11.7 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | : | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | : | 3.8 | 3.6 | 3.8 | 3.7 | 3.8 | 3.9 | 3.9 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | : | : | 2.9 | 2.8 | 2.9 | 2.8 | 2.8 | 2.9 | 2.8 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 90.2 | 93.3 | 93.0 | 92.6 | 93.2 | 87.6 | 93.0 | 96.8 | 96.8 | 98.0 | 97.0 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | : | : | : | : | 70.5 | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[13] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Slovakia

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

Slovak GDP per capita in 2008 (18100 PPS), although more than twice as high as in 1998 (8800 PPS) is still well below the EU average of 25075 PPS. Given its high degree of trade openness, the Slovak economy has been particularly exposed to the crisis. A plunge in exports, investments and private consumption resulted in output contraction of 4.7% in 2009 after years of buoyant growth when the GDP growth rate averaged 7% during the period 2003-2008. The Slovak economy is projected to recover progressively as external and domestic demand picks up with real GDP growth reaching 2.7% and 3.6% in 2010 and 2011, respectively.[1]

**Recent trends of expenditure**

In 2008 total (public plus private) expenditure[2] on health amounted to 7.8% of GDP and was considerably lower than EU average[3] of 9.6% even after rising significantly from 5.7% in 1998. Public expenditure of 5.4%, although also well below EU average of 7.4% had remained broadly constant over the last decade (+0.2%). This could suggest that growth in total spending has been mainly due to an increase in private expenditure and partly to the fact that the health system accumulated in the meantime major debt and arrears with their suppliers, particularly pharmaceutical companies (0.7% of GDP on average between 2004 and 2006[4]). Also when measured in per capita terms health care expenditure are significantly below the EU average: in 2008, total spending amounts to 1421 PPS compared to EU average of 2381 PPS and public spending to 982 PPS, compared to EU average of 1826 PPS respectively.

**The role of technology**

Total (2.2%) expenditure on pharmaceuticals as a percentage of GDP in 2008 is well above the EU average (1.5%) while on the other hand, public (1.6%) expenditure on pharmaceuticals as a percentage of GDP in 2008, although broadly similar to a decade ago (1.5% in 1999), still exceeds considerably that of the EU average (1.0% of GDP).

The Slovak health care sector is equipped comparably to the other European countries in diagnostic and therapeutic units. The number of angiography units per 100000 inhabitants in 2008 (0.8) exceeds the EU average (0.7 in 2007), while those of MRI units (0.6), CTS units (1.4) and PET scanners (0.1) are just below EU average[5]. The numbers and their increase probably relates to a national effort to replace outdated equipment and improve the quality of care provided. However, given the size of the public health budget, it may be useful to carefully consider each further addition to the existing high-cost equipment and whether they are cost-effective.

**Health status and healthy behaviour – life-styles – risk factors**

The health situation of the Slovak population is slightly worse than that of the average Europeans. Women live slightly longer than men both in absolute terms and in comparison with the EU

1 European Commission (2010), European Economic Forecast – Spring 2010.
2 Data on expenditure is taken from OECD health data.
3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.
4 Ministry of Finance and Ministry of Health.
5 Data on technology is taken from OECD health data and Eurostat database.

averages: female life expectancy at birth is 78.4 years compared to 80.8 in the EU, while for men it is 70.6 compared to 74.1 in the EU.[6] The opposite can be observed in healthy life years: the gap between Slovakia and the other countries is narrower for men (55.4 vs. 60.6 years) than for women (55.9 vs. 62.0 years). Infant mortality of 5.9‰, although having declined significantly over the recent decade (8.7‰ in 1998), is still among the highest in the EU and well above the EU average of 4.3‰. Neuropsychiatric conditions and cardiovascular diseases account for the highest burden of disease, both among males and females. The main causes of death are circulatory system diseases (54%), cancer (22%) and other non-communicable diseases (13%).[7] In terms of healthy lifestyles, the proportion of the population which is obese (16.9% in 2008) and the percentage of regular smokers (25% in 2007) are slightly above the EU average. In comparison, alcohol consumed per year on average (9.6 litres in 2008) is above the EU average but has not really decreased over the last decade (-0.2). These values, especially on obesity and smoking, merit some attention and action. Health inequalities across socio-economic groups, measured in term of age of death dispersions is about OECD average.[8]

## 2. Expenditure prospects: population ageing and future health status

Over the decades to come Slovak population is projected to decrease significantly from 5.4 million in 2008 to 4.5 million in 2060. Life expectancy is projected to grow by 11.1 years for men and 8.6 for women, significantly more than in the EU on average. Slovakia is expected to be one of the countries most affected by the ageing process. The share of the old population (65+) is expected to more than triple (from 12% to 36.1%) and the share of the very old (80+) to increase fivefold (from 2.6% to 13.2%).

Driven by the change in demographic structure, public spending on health care is projected to increase by 46% or 2.3 percentage points of GDP, significantly more than the 25% - 1.7 pps - average increase in the EU.[9] Good health (translated by a constant health scenario) reduces the projected expenditure increase to 1.2, highlighting the importance of improving health behaviour. Such a large projected growth in health care spending, together with considerable expected increase in the other age-related items of public expenditure and the current budgetary stance, results in high risk for the long-term sustainability of Slovak public finances.

## 3. Health care coverage and expenditure

The Slovak health care system is a compulsory social health insurance scheme covering all residents. In practice, a small share of the population (4.6% in 2008), which does not pay the required contributions[10] and are not entitled to automatic membership[11], is not covered. A small number of services (e.g. dentistry and cosmetic surgery) are not covered and patients pay part of drugs' costs out-of-pocket. Voluntary private health insurance plays a small though growing role, mainly due to the broad coverage of mandatory public insurance. Private health insurance mostly corresponds to supplementary private health insurances that cover non-essential services not provided under social health insurance.

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[6] Data on life expectancy and healthy life years is taken from the Eurostat database. Data on life-styles is taken from the Eurostat database and the OECD health data.

[7] WHO Europe (2006), Highlights on health in Slovakia 2005.

[8] OECD (2010) "Health Care Systems: Efficiency and Institutions", Economics Department Working Papers No. 769, p11, box 1.

[9] I.e. considering the "pure ageing scenario" of the projections (see the 2009 EPC/EC Ageing report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).

[10] Economically inactive persons who should pay the insurance by themselves but do not.

[11] Old-age pensioners, persons on early retirement or those receiving a disability pension whose degree of incapacity is 70% or more.

Insured persons are allowed to choose his/her health insurance company among three health insurance companies. The State pays contributions of some social groups (dependent children, pensioners, persons taking care of children aged up to 3 years) to ensure their health insurance coverage.

Symbolic lump sum fees (co-payments) for practically all medical services and goods were introduced in 2003 but in 2006 most of them were abolished (visits at primary outpatient care, hospital stays) or considerably lowered (drug prescriptions). The only fees which remained unchanged were those for emergency services, ambulance transportation and spa treatment. The aim of introducing those fees was to limit excess demand which was to large extent fulfilled. However, unexplored question remains whether this measure prevented especially lower income groups from accessing the health care services and hence influenced the health status.

As a consequence of a series of reforms, the share of private expenditure has increased sharply over the last decade. It grew from below 10.9% in 2002 to 26.2% in 2003 and further to 31.0% in 2008, well above the EU average of 22.7%.[12] Out-of-pocket expenditure (OOP) followed the same tendency, growing from 10.9 to 25.7% of total health expenditure well above the EU average of 14.4%.[13]
The First significant increase of OOP occurred in 2003-2004 due to introduction of:
(1) Fees for services.
(2) Co-payments on pharmaceuticals, which was substantial part of these two.
Therefore abolition of fees for services did not have significant impact on overall private expenditure. Other three reasons that have driven private expenditure in subsequent years were:
(1) Higher consumption of drugs while relative co-payments rose on a relatively low pace.
(2) People are wealthier and therefore can afford extra, rather luxury goods and services (including in health-care).
(3) Additional out of pocket payments have been introduced after abolition of above mentioned fees (visit of physicians in reserved time, payment for choice of gynaecologist by obstetric care, increase of payments for dental services and for additional services related to health care...).
(4) Relatively poor quality of state-owned providers.
However, importantly, data on these issues are poor and therefore (2) and (3) remain rather presumptions than empirical facts.

In addition to formal OOP there are considerable and unmeasured informal payments. However, persistent informal payments (which are not adjusted to individual socio-economic characteristics) can negatively impact on access. They are also a source of inefficiency as they do not encourage a more effective use of services or provide finance to the system that is then invested in main priorities.

# 4. Collection, pooling and allocation of financial resources

Public funding accounted for about 69% of total health expenditure in 2008. Social health insurance accounted for 90% of public funding while government financing accounted to 10%. Out-of-pocket (OOP) expenditure accounted for about 25.7% and the rest came from private insurance, corporations and non-profit institutions. Indeed OOP is almost the only source of private financing in Slovakia, as private health insurance is virtually non-existent.

[12] OECD health data combined with Eurostat data from 2003 for OECD Member States
[13] As a result, Slovakia scores 6 out of 6 on the breadth, about 5.9 in the scope and about 4.8 on the depth of basic coverage according to the OECD scoreboard.

Public health insurance is assured by three health insurance companies, one of which is state-owned and two have the form of private joint stock companies.[14] The market is dominated by the state-owned company, whose share in 2007 amounted to 69%. Mandatory insurance contribution amounts to 14% of the gross monthly earning for employees[15] and 14% of the assessment base for the income tax divided by a predefined coefficient for the self-employed people. The minimum and maximum assessment bases for both groups equal statutory minimum wage and threefold of the average monthly wage respectively. The contributions paid by the State on behalf of some social groups (dependent children, pensioners, persons taking care of children aged up to 3 years) have increased gradually over the recent years from 4% of average wage in 2006 to 4.9% in 2009. The supervision is carried out by the Ministry of Health and Office for the Supervision of Health Care. The economic activity of the funds has been constrained by 2006 regulation which restricts utilisation of profit gained from public insurance to payments for health care provision (thus in practice preventing them from paying profit to shareholders). Moreover, a risk equalisation principle has been introduced by the State which can redistribute companies' revenues in order to compensate the existing structural differences between insurance funds. Redistribution criteria include sex, age and the number of policyholders whose contribution is paid by the State. Further improvements in the formula would be however beneficial.

Total expenditure on administration and insurance as a percentage of GDP is below the EU average (0.3% vs. 0.4% in 2008) while public expenditure on administration and insurance as a percentage of GDP is about the EU average (0.3% in 2008). Total and public expenditure on administration and insurance as a percentage of total current expenditure on health show the same tendency (4.1% and 4.1% in 2008 vs. 4.4% and 3.1%). This suggests that the system is quite expensive to run and that the use of several sub-national administrative levels involved in either the collection or the purchasing of services could be rationalised. Given the size of the public budget allocated to health and the current economic situation it may be then worth exploring if there are gains to be made in terms of administrative costs associated with the collection and distribution of funds.

There is no stringent cost-containment. The State defines annually health care expenditure targets for different health services but overshooting is possible and not penalised.

# 5. Providers status, referral systems and patient choice

Provision of health care is decentralised and based on a public-private mix. General practitioners (GPs) and specialists are either independent private providers, either public providers. Public and private health care providers conclude contracts with the health insurance companies in order to be eligible for reimbursement. Most of private primary care providers have these contracts, only some private primary care providers are working on the basis of direct payments (dentists), i.e. without contracts with health insurance companies. Facilities and equipments are usually rented from State's facilities.

The patient can choose freely his GP. A so-called "exchange card", introduced in 2008, works as a referral tool from GP to a specialist or hospital.[16] It does not have to be used only in some specific cases (immediately after an injury, systematic care, visits to an outpatient psychiatric care, dentist and gynaecologist).

Secondary and tertiary care is provided in a number of general and specialised hospitals, polyclinics, hospices and nursing homes. The ownership and management of most public

[14] One more private fund operated until May 2008, when it withdrew from the market.
[15] Employees and employers pay 4 and 10% respectively.
[16] According to the OECD, Slovakia scores 6 out of 6 on the level of choice of provider and gatekeeping in the OECD scoreboard.

institutions has been decentralised from central to regional level. Health insurance companies are obliged to contract all GPs and pharmacies, and a specified minimum number of specialists and hospitals. The 2007 reform introduced healthcare districts, whereby all GPs, gynaecologists and dentists are obliged to provide care to each patient resident in their respective territorial districts, who in turn has the right to choose freely his/her physician. Moreover, a minimum network of public health care providers was established (including 34 hospitals, all of which are state-owned), which resulted in an overwhelming practice of selective contracting by the health care funds. Meanwhile, contracts and payments to smaller and private hospitals have been reduced, which led, in several cases, to a closure of some departments. While choosing the providers beyond the list of minimum public network each fund could establish its own evaluation criteria. Only in 2009 the government adopted an official list of indicators to assess the quality of providers.

Underfunding and high debt of the hospitals remain a major challenge since it implies that they are unable to afford certain drugs and medical equipment. Budget constraints and funding could be improved in that area[17].

As a consequence of the above mentioned reforms, the total number of practising physicians has fallen slightly over the last decade and in 2007 amounted to 300 per 100000 inhabitants, very close to the EU average. The same trend concerned nurses, whose most recent (2006) available number of 632.6 per 100000 inhabitants is however well below the EU average of 821.2. Even lower in comparison to the other countries (EU average of 92.2 per 100000) is the number of general practitioners (36.3) in 2006. Together with a well-above average number of acute care beds in 2008 (486.7 vs. 383.2 in EU), it is a clear sign of underdevelopment of primary care sector, overutilization of the acute care sector and inefficiency of the referral system. In term of practising physicians across regions, derived from the number of physicians per capita in each region expressed as a percentage of the number of physicians per capita at the national level, Slovakia shows the highest inequality of the European OECD countries.[18]

Shortages of GPs can lead to high waiting times to visit GPs and therefore individuals skip the referral system and go straight to hospital, making unnecessary use of emergency care. To implement a well-functioning referral system and choice requires continuing the efforts so far to change the skill mix and improve the distribution of primary care across the country and perhaps increasing the possibility to access primary care / GPs after normal office hours (although office hours are already long compared to other countries). Long waiting lists are also observed for non-emergency treatments, surgeries, and services and informal payments are often used in order to reduce wait.

# 6. Purchasing, contracting and remuneration systems

Primary care physicians are paid mainly on a capitation basis. Specialists are paid on a fee-for-service basis. The current system of financing health care is then based on a combination of a point and fixed price system. For out-patient care, each medical service has a point value listed in the Slovak Ministry of Health.[19] For in-patient care, hospitals get a fixed-rate payment for each day in the hospital. The rate is determined by the prize and number of completed hospitalisations or visits in a given department, as well as by the type and size of facility.[20]

[17] Accordingly, Slovakia scores 2 out of 6 in the OECD scoreboard due to the soft budget constraint.

[18] OECD (2010) "Health Care Systems: Efficiency and Institutions", Economics Department Working Papers No. 769, p11, box 1.

[19] List of Medical Services, No. 221/1993.

[20] The OECD score for remuneration incentives to raise the volume of care in Slovakia is a bit less than 3 out of 6.

Health insurance companies are responsible for contracting hospitals. They sign contracts with health care providers for different quantity of health care services on the basis of selected regional needs. They have the possibility to differentiate the quantity of health care services purchased according to quality of providers. In case of need of hospitalization the referral of general practitioner is requested except in case of immediate hospitalization. Patient for health care provided in this context does not have to pay any fee.

In case of out-patient medical treatment, there is the direct access to the contracted physician of the primary care (information about the contracted physicians shall be provided by each of the health insurance companies). Patient does not pay for the care provided. If the out-patient medical treatment of specialist is needed, generally the referral of primary care physician is requested. Patient for health care provided by the specialist does not pay any fee.

In case of need of out-patient dental treatment there is the direct access to the contracted dentist (information on the contracted dentists shall be provided by each of the health insurance companies. Dental treatment using the "standard" materials is reimbursed only by the public health insurance. If you are interested in health care using the above-standard materials, you will pay the price difference between standard and above-standard materials. Price of above-standard material is determined by each dental ambulance itself. Therefore the price for dental treatment and prosthetics varies in different clinics. The dentist is obliged to inform the patient in advance about the expenses for services with the patient participation and about the expenses of direct payment and in what amount.

In the case of need of emergency unit (Medical First Aid or Hospital Emergency Service) in the hospital there is a fee 1.99 €. If is found necessary to keep the patient in the in-patient care in the hospital after examination, the charge 1.99 € doesn't apply.

When looking at hospital activity, inpatient discharges (18174 in 2008) are above the EU average (16231 in 2007) but average length of stay is about the EU average (7.9 days in 2008). The proportion of surgical procedures conducted as day cases is low especially in public institutions.[21] A strategy to increase outpatient and day case interventions should be then encouraged. This strategy should probably include a change in hospital remuneration and the current remuneration is probably conductive to a higher number of inpatient admissions. Further reducing hospital capacity, increasing bed occupancy rates and bed turnover rates, increasing the number of day case surgery and outpatient cases, and concentrating high-tech complex care in a few facilities (centres of excellence) are perhaps areas where further improvements can be made (see further).

Finally, on average, wages of health care workers are still below the average wage in the Slovak economy and health spending could then come under pressure from demands for wage increases.

**Pharmaceuticals**

If the sickness needs the usage of drugs/medicines or the usage of medical devices the general practitioner prescribes the prescription. Drugs and medical devices can be obtained in any of the pharmacies in Slovakia (there are more than one thousand pharmacies in Slovakia). The pharmacy is obliged to deliver the prescribed drug. It does not make any difference either it is the contract or non-contract pharmacy. Drugs are divided into three categories by law according to their clinical performance and economic evaluation:

- medicines for the full payment of health insurance company.
- medicines for partial payment of health insurance company and with the co-payment of the patient.

[21] International Association for Ambulatory Surgery (2006), "Day surgery development and practice" report

- medicines for the full payment of the patient.

The physician who prescribes the prescription is obligated to inform on the category of the drug. When the category with the cost-sharing of the patient is concerned it is paid directly in the pharmacy. The pharmacy is obliged to issue the receipt of the amount of payment of the patient participation and of the co-payment. Patient does not claim for reimbursement of the cost-sharing and co-payment at the health insurance company.

Total pharmaceutical spending accounts for 29.6% of total health expenditure in 2008, the share which, although it has fallen sharply since the peak of 40.2% in 2003, is still the second highest in the EU. In order to reduce it, a number of measures have been adopted starting from 2007. VAT on drugs and medical goods was lowered from 19% to 10%, the prices of reimbursed drugs were twice administratively decreased, a profit margin (first degressive, then flat) on drugs was introduced and the drugs' price setting mechanism was changed from internal to external reference pricing.[22] Good clinical practices and prescriptions guidelines are issued by the Ministry of Health to the physicians as well as information to the patients and pharmacists about existing generic substitutes for example. However, additional policies could be envisaged like co-payment rates revisions, refinement of the international price referencing system or financial incentives to implement generic substitution among others.

# 7. Information and monitoring, use of cost effectiveness and health promotion

The health data collection is realised by the National Health Information Centre which collaborates closely with national and international relevant authorities. It registers basic information for assessing the health status of the population and provides fundamental epidemiologic and clinical features related to the diseases' incidence and causes for professionals.

The use of information technology in health care system is not sufficiently developed. The insurance companies have an obligation to evaluate the quality of health care providers and rank them according to their success rate in fulfilling the criteria for quality indicators drawn up by the Ministry of Health. The Ministry also issues expert guidelines in order to introduce new, effective and uniform diagnostic and medical procedures for the treatment of selected, society-wide serious illnesses. However, there are no information on the effective working of the system.

Healthy lifestyle and disease prevention activities have not yet received the same emphasis than in other countries in the EU, as seen by its pattern of expenditure and some indicators like total expenditure on prevention and public health services as % of GDP which is below the EU average (0.2% vs. 0.3% in 2008). Vaccination rates are above the EU average (99% vs. 96% in 2008) but the proportion of screening rates for breast cancer is really low (21.3% of the target population in 2007) even if it has increased slightly since 2000 (+14.4%).

# 8. Challenges

The analysis above shows that a range of reforms have been implemented in recent years like for example to improve hospital efficiency, to improve data collection or to control overall expenditure and pharmaceutical expenditure in particular. Therefore, Slovakia should continue to pursue them

[22] Law on price referencing was adopted and strictly enforced and has brought substantial savings of about 13% until end 2009.

together with new challenging reforms. The main challenges for the Slovakian health care system are as follows:[23]

- To ensure the long-term sustainability of the insurance system the equity of and the accessibility to care.
- If several insurance companies continue to operate, it could be beneficial to introduce effective competition rules and level playing field for state and private-owned insurance companies, by preventing state's involvement in the management of companies' profits.
- To promote the supply of general practitioners by removing the restrictions on the volume and range of primary health services and introducing the performance element to payment schemes. To continue recent efforts to limit the overutilization of acute care beds, by introducing effective referral system and control of admissions.
- To reduce hospitals deficits by controlling strictly budgets and by improving hospital management.
- To promote use of generic substitutes among GPs, pharmacists and participants. To introduce a national procurement system for pharmaceuticals in order to enhance the bargaining power of hospitals against pharmaceuticals companies.
- To introduce the benefit package and the negative list of services, not (fully) covered by the social insurance, including at least services considered as a luxury.
- To continue to improve data collection and monitoring of inputs, processes, outputs and outcomes so that regular performance assessment can be conducted and use to continuously improve access, quality and sustainability of care.
- To reduce use of informal payments in out-of-pocket expenditure.

[23] The OECD overall efficiency score for Slovakia is much lower than its group average (about 4.1 years potential gain to be made through greater efficiency in the sector compared to the group average of 2.6 years) and below the OECD average (2.3 years).

# Statistical Annex - Slovakia[24]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 5.7 | 5.8 | 5.5 | 5.5 | 5.6 | 5.8 | 7.2 | 7.0 | 7.3 | 7.7 | 7.8 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 501 | 519 | 525 | 571 | 624 | 669 | 890 | 954 | 1101 | 1305 | 1421 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 5.2 | 5.2 | 4.9 | 4.9 | 5.0 | 5.1 | 5.3 | 5.2 | 5.0 | 5.2 | 5.4 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 457 | 465 | 470 | 510 | 556 | 591 | 656 | 710 | 753 | 872 | 982 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 5.2 | 5.7 | 6.2 | 6.7 | 7.1 | 7.2 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 8800 | 9000 | 9500 | 10400 | 11100 | 11500 | 12300 | 13500 | 15000 | 16900 | 18100 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | 0.1 | 0.1 | 0.2 | 0.2 | 0.4 | 0.4 | 0.4 | 0.6 | 0.6 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.7 | 0.8 | 0.8 | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | 0.9 | 1.0 | 1.1 | 1.2 | 1.4 | 1.4 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | : | 2.0 | 1.9 | 1.9 | 2.1 | 2.2 | 2.3 | 2.2 | 2.2 | 2.2 | 2.2 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | : | 1.5 | 1.5 | 1.6 | 1.8 | 1.9 | 1.7 | 1.7 | 1.6 | 1.5 | 1.6 | 1.0 | 1.0 |
| Proportion of the population that is obese | 16.2 | : | : | : | : | 15.4 | 16.5 | 17.6 | : | 16.7 | 16.9 | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | : | : | : | : | 24.3 | : | : | : | 25.0 | : | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 9.8 | 10.0 | 8.9 | 8.7 | 8.8 | 7.4 | 9.4 | 9.0 | 8.6 | 8.9 | 9.6 | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 77.0 | 77.4 | 77.5 | 77.7 | 77.7 | 77.7 | 78.0 | 78.1 | 78.4 | 78.4 | 79.0 | 82.3 | 82.3 |
| Healthy life years at birth females | : | : | : | : | : | : | : | 56.4 | 54.4 | 55.9 | 52.3 | 62.3 | 61.6 |
| Life expectancy at birth males | 68.6 | 69.0 | 69.2 | 69.5 | 69.8 | 69.8 | 70.3 | 70.2 | 70.4 | 70.6 | 70.8 | 76.3 | 75.9 |
| Healthy life years at birth males | : | : | : | : | : | : | : | 54.9 | 54.3 | 55.4 | 51.8 | 61.5 | : |
| Infant mortality | 8.7 | 8.3 | 8.6 | 6.2 | 7.6 | 7.9 | 6.8 | 7.2 | 6.6 | 6.1 | 5.9 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 100.0 | 100.0 | 98.8 | 97.9 | 97.3 | 96.9 | 95.6 | 97.6 | 96.3 | 95.5 | 95.4 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 91.6 | 89.6 | 89.4 | 89.3 | 89.1 | 88.3 | 73.8 | 74.4 | 68.3 | 66.8 | 69.0 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 8.4 | 10.4 | 10.6 | 10.7 | 10.9 | 11.7 | 19.2 | 22.6 | 25.9 | 26.2 | 25.7 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | 3.0 | 3.0 | 2.7 | 0.6 | 0.5 | 5.3 | 4.1 | 4.1 | 3.8 | 4.1 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | 0.2 | 0.2 | 0.1 | 0.0 | 0.0 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | 3.0 | 3.0 | 2.7 | 0.6 | 0.5 | 4.3 | 4.1 | 4.1 | 3.8 | 4.1 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 45.3 | 47.5 | 53.0 | 52.0 | 54.0 | 55.3 | 56.4 | 57.7 | 56.7 | 56.0 | 56.1 | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 296.0 | 331.9 | 336.0 | 335.0 | 332.5 | 328.3 | 331.5 | 302.8 | 315.9 | 300.0 | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | : | 729.1 | 750.7 | 733.0 | 713.0 | 679.7 | 663.8 | 631.6 | 632.6 | : | : | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 36.5 | 41.5 | 43.2 | 44.0 | 43.6 | 43.2 | 43.2 | 36.9 | 36.3 | : | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 588.9 | 584.8 | 567.6 | 544.6 | 535.7 | 509.1 | 483.5 | 501.1 | 487.7 | 491.5 | 486.7 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 15.0 | 15.0 | 15.0 | 13.0 | 13.0 | 12.4 | 11.9 | 11.3 | 0.0 | 11.2 | 12.1 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | 19876 | 20534 | 19634 | 18986 | 19095 | 19124 | 19290 | : | 18174 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 6120 | 5031 |
| Hospital average length of stay | : | : | 9.9 | 9.5 | 9.0 | 8.8 | 8.7 | 8.4 | 8.3 | : | 7.9 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | : | : | : | : | : | : | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | 120.4 | 126.2 | 135.2 | 164.1 | 187.0 | 210.2 | 304.1 | 327.5 | 361.0 | 392.0 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | : | 91.8 | 104.2 | 111.8 | 138.7 | 154.6 | 160.0 | 223.6 | 238.7 | 250.0 | 279.0 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | 34.8 | 34.7 | 34.7 | 37.6 | 40.2 | 34.2 | 33.3 | 31.1 | 29.4 | 29.6 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | : | 26.5 | 28.6 | 28.6 | 31.7 | 33.3 | 26.0 | 24.5 | 22.7 | 20.3 | 21.1 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | : | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.4 | 0.2 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | : | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | : | 1.9 | 1.7 | 3.0 | 2.4 | 4.5 | 5.0 | 3.0 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | : | : | 1.9 | 1.7 | 1.9 | 1.3 | 1.9 | 2.1 | 2.0 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 98.0 | 98.4 | 98.3 | 98.9 | 98.4 | 97.7 | 99.0 | 99.0 | 99.0 | 99.3 | 99.0 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | : | : | : | : | : | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | 6.9 | 9.1 | 11.4 | 12.4 | 14.8 | 17.1 | 19.5 | 21.3 | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[24] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Finland

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (29400 PPS in 2008) is well above the EU average (25075 PPS in 2008) up from 15800 in 2000. From 2000 to 2008 Finland grew at an average rate of 3.2%. As a result of the global economic crisis, GDP growth was -7.8% in 2009 and the unemployment rate reached 8.2% in the same year. The response to the crisis was to implement a fiscal stimulus package to limit economic contraction. The economy shows signs of recovery with a forecasted economic growth of 1.4% in 2010 and 2.1% in 2011.[1] As a consequence of the crisis and the fiscal stimulus, the budget deficit reached 2.2% of GDP in 2009 and is forecasted to reach 3.8% in 2010. Fiscal consolidation to bring government revenues and spending into line in the coming years may have consequences for the health sector through consolidating current measures to improve its efficiency.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (8.4% in 2007) is below the EU average[3] (9.6% in 2008) and the EA average (10% in 2008). It has increased from 7.4% in 1998. Public expenditure on health as a percentage of GDP is below the EU average (6.2% vs. 7.4% in 2008), having increased from 5.3% in 1998. Total (2460 PPS in 2008) and public (1827 PPS in 2008) per capita expenditure are about the EU average (2381 PPS and 1826 PPS in 2008), having consistently increased since 1998 (1426 PPS and 1024 PPS).

**The role of technology**

Total (1.2%) and public (0.7%) expenditure on out-patient pharmaceuticals[4] as a percentage of GDP were below the EU average (respectively, 1.5% and 1%) in 2008. Total (15%) and public (8.5%) pharmaceutical expenditure as a percentage of total current health expenditure is also below the EU average (respectively, 16.9% and 11.2% in 2008). The low shares relate to the large number of policies in place in this area. The number of MRI units (1.5) in 2007 and the number of PET scanners (0.1) in 2006 per 100 000 inhabitants were respectively above or about the respective EU average (1 in 2007, 0.1 in 2006), while the number of CTS units (1.6) per 100 000 inhabitants was below the EU average (1.9 in 2007). They show a small increase over time. The numbers ranking among the high ones in EU may be partly explained by the fact that the decision on high-cost equipment is decentralised to the municipal level.

**Health Status and healthy behaviour – life-styles – risk factors**

Life expectancy (83.3 years for women and 76.5 years for men in 2008) is above the EU average (82.2 and 75.8 years) but below the EA average (83.4 and 77.6 years). Healthy life years (59.4 years for women and 58.6 for men in 2008) are below the EU average (respectively, 62.3 and 61.5 years).[5] Mortality by ischemic heart disease and prostate cancer is, however, relatively high by OECD standards.[6] The authorities have recognised health inequalities between socio-economic

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1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on expenditure is taken from OECD health data and Eurostat database.

3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.

5 Data on life expectancy and healthy life years is from the Eurostat database.

6 Mortality rates are based on the crude number of deaths according to selected causes in the WHO Mortality Database; they have been age-standardised to the 1980 OECD population, to remove variations arising from differences in age structures across countries and over time within each country (OECD Health at Glance 2009).

groups as a policy challenge. Data shows a consistent increase in the proportion of the population which is obese (from 9.5% in 1998 to 15.7% in 2007) and in the per capita consumption of alcohol (from 8.6 litres in 1998 to 10.3 litres in 2008). It also shows a relatively high share of the population that smokes regularly despite a significant reduction (from 25.1% in 2000 to 20.4% in 2008). These values deserve some attention and action.

## 2. Expenditure prospects: population ageing and future health status

Population is projected to increase by 100 000 from 2008 to 2060. Life expectancy is projected to increase by 6.2 years for women (slightly less than the EU average of 6.9 years) and 8.2 years for men (slightly less than the EU average of 8.5 years). The share of the old (65+) is projected to increase by 11.3 pps and the share of the very old (80+) by 6.5 pps (less than the respective EU average change of 13 pps and 7.8 pps) from 2008 to 2060.

As a result of ageing[7], health care expenditure is projected to increase by 1.4 pps of GDP (below the average change in the EU of 1.7 pps). Good health (translated by a constant health scenario) reduces the projected expenditure increase by a very large amount (from 1.4 pps to 0.2 pps) showing the importance of improving health behaviour.

## 3. Health care coverage and expenditure

From a financial point of view, the Finnish health care system has three main parts:

- municipal health care services,
- private health services,
- occupational health services.

An integrated but decentralised system of municipal health care services, funded on the basis of taxes (central and local taxes), provides full population coverage. On the basis of legal provisions (harmonised legislation and guidelines), the 342 municipalities (in 2010, compared to 415 in 2008) are responsible for providing or funding a wide range of health services (including health promotion, disease prevention and rehabilitation) for their residents (still less than 10 000 in the majority of municipalities). Primary care is provided by individual municipalities or by groups of municipalities whereas the specialised health care is organised through federations of municipalities. This is coupled with a compulsory national medical insurance (run by KELA, the Social Insurance Institution) covering all residents[8], financed through the state (50%) and the insured (50%). This covers part of patients' expenditure on outpatient drugs, transportation costs but also part of private health care (mainly outpatient visits and ambulatory care in big cities). In addition, employers provide/ buy occupational health services predominantly preventive and first aid care, but also basic outpatient care for common illnesses in the case of larger companies. The role of compulsory occupational health care is significant, as it covers around one third of the total population. Supplementary private health care insurance is available but has only a minor role.

Most municipal health services (primary, outpatient specialist care, hospital day case and inpatient care, dental care, physiotherapy) involve a fee at the point of use. Children and those who have reached an upper limit for out-of-pocket payments are exempted from cost-sharing. The occupational health care is free of charge to the employee. Under the national medical insurance the cost-sharing applies to pharmaceuticals and many private health care services (see the previous paragraph). Eyeglasses and contact lenses are, for example, not funded or provided by local or state

[7] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf).

[8] This is a part of the national health insurance scheme that covers both the medical insurance and the sickness and parenthood allowances scheme.

authorities. It is not clear whether the current cost-sharing design induces a greater use of more cost-effective services (e.g. primary care vs. specialist care when this is not necessary) although there is a referral system from primary to specialist care in place in municipal health care.

11.4% of the population buys supplementary private insurance (to cover the services not covered by public provision/ funding) and 11.5% buys complementary health insurance to cover cost-sharing.. If cost-sharing is fully covered by private insurance it may lose the ability to reduce overconsumption and/or encourage some services more than others, although complementary insurance is taken by a relatively small share of the population. In 2008, private expenditure and out-of-pocket expenditure were 25.8% and 19.4% of total health expenditure and therefore above the EU average (22.7% and 14.4%). The share of private especially out-of-pocket expenditure has registered a consistent reduction since 1998 (28.2% and 21.9% in 1998) as part of the authorities' efforts to reduce financial barriers to access (note that 1% of the population was exposed to catastrophic health expenditures).[9]

To improve access and reduce the waiting times for primary care, legislation was introduced which establishes the right to immediate access to health centres by phone during working hours or a visit within 3 working days. To reduce waiting times for hospital surgery, which was seen as a problem in Finland, legislation provides that a referral must be assessed within 3 weeks and hospital treatment provided within 6 months. When this is not possible, patients can be treated in another hospital district or in the private sector at the authorities' expenses. In many areas there are phone services and web pages in place to help patients access the system. Waiting times have seen a reduction since these systems have been implemented. Some hospital districts provide online data on waiting times. In addition, the National Institute for Health and Welfare publishes general statistics on waiting times.

General improvements in service access, including an increase in cost-coverage, may help explain the increase in public and total expenditure observed in the last decade.

# 4. Collection, pooling and allocation of financial resources

In 2008, 74.2% of total health expenditure funding came from public sources, including central and local taxation (59.2%) and social insurance contributions (15.0%), 19.4% from out-of-pocket payments and the rest from private insurance. As far as the municipal health services are concerned, the bulk of financing of the system comes from local taxes (flat-rate taxes) and state taxes, the latter turned into subsidies to municipalities. The health care financing share of the state in 2008 was 24.2% and the share of municipalities was 35.0%, making up the total of 59.2%. In municipal health care, the share of state financing in 2008 was 32.7%.

The level of taxes which will be allocated to the health sector is defined by the Parliament (in the case of national taxation) and by municipalities (for local taxes). The Parliament defines the social contributions for health under the compulsory medical insurance scheme. The parliament determines also resource allocation across regions. The State, municipalities and clients finance running costs of municipal health care services. Municipal tax revenues and state funding are used for both health care and other services such as education and social services. Revenue from state taxes is passed on to municipalities in the form of non-earmarked block grants. The state grants are allocated to municipalities according to a weighted capitation formula, which is designed to adjust the grants, at least partly, for differences in the need for services. In the case of health services, the

[9] As a result, Finland scores almost 6 out of 6 on the breadth, almost 6 in the scope and a bit less than 5 on the depth of basic coverage according to the OECD scoreboard.

formula takes, in particular, account of the age structure of the population and an indicator of morbidity. No part of the state grant is earmarked specifically to health care.

Municipalities together with collective providers agree on the remuneration methods for providers. The Commission for Local Authority Employers, representing the municipalities, negotiates with the labour unions over the salaries of municipal health staff. Hospitals and primary care health centres then exercise their autonomy to recruit medical staff and other health professionals. Some municipalities provide services directly or together with other municipalities, or (often for larger urban centres) buy care from private provider on the basis of contracts, in a purchaser-provider type of model. The Ministry of Social Affairs and Health defines general policy guidelines and regulation.

This suggests a rather decentralised decision making and resource allocation process, within a general and nationally agreed regulatory framework, and in the presence of a not explicitly defined basic benefit package. Nevertheless, the level of expenditure in administering such a system is not high. Public (0.2%) and total (0.2%) expenditure on health administration and health insurance as a percentage of GDP is below the EU average (0.3% and 0.4% respectively in 2008). So is public and total expenditure on health administration and health insurance as a percentage of current health expenditure (2.0% and 2.4% vs. 3.1% and 4.4% in 2008).

There are, however, concerns that such a decentralised decision making process, with municipalities having a significant degree of freedom to plan and steer the services as they see best and a weak national steering, has lead to large disparities in the availability and quality of service provision, including e.g. high-cost equipment, and waiting times to for a doctor's appointment and for hospital elective surgery, and has reduced the ability to explore economies of scale and scope in care delivery. Some municipalities had problems in recruiting physicians and provide services in the quantities needed by their residents. This is partly why a municipal and service structure reform (PARAS) was introduced in 2007 with a transition period of up to 2012.

The PARAS reform aims to control expenditure / reduce costs, as well as increase the quality of care and reduce geographic disparities in care provision, via a reduction in the number of municipalities (merging of municipalities) and an increase in the population served by each local authority (20 000 inhabitants compared to 5000 inhabitants, the average prior to 2009). This allows for the concentration/ specialisation in the provision of certain services (e.g. hospital care, very specialised services) and a higher funding ability to increase the pool of services provided in primary care. It is not yet possible to see the consequences of that reform in terms of expenditure savings. In addition, national authorities have recently reviewed and implemented national treatment and quality guidelines and extended the regulatory role of National Supervisory Authority for Welfare and Health to cover both individual health care professionals and health care organisations and health related institutions.

In addition, concerns have been expressed[10] that the dual public financing through taxation and national health insurance can reduce overall efficiency in the delivery and use of those services (outpatient and ambulatory services) that are covered by the two. Indeed, national health insurance does not appear to set financial limits on providers, which would lead to rationing of services, while municipal services face strict budget constraints. It also weakens gate-keeping. This dual financing also may create inequities in the use of services as poor people tend to use private services less as they still have to pay a relatively high share of the cost.

[10] HiT, 2008 and OECD Reviews of Health Systems: Finland, OECD, 2005.

Overshooting of the budget target is allowed and the consequences of reaching the spending target included an increase in social insurance contributions or taxes and the implementation of a number of cost-containment policies such as an increase in user charges.[11]

# 5. Providers status, referral systems and patient choice

Primary care is provided by general practitioners (GPs) in public health centres while outpatient specialist care is provided in outpatient hospital departments. Federations of municipalities form hospital districts (20 districts in total excluding the Åland Island) and own public hospitals. About 89% of all hospital beds are public. The 20 hospital districts are further grouped into 5 tertiary care regions around universities with medical schools. Private provision, often through group practices, mostly concerns outpatient specialist and simple ambulatory services, and typically takes place in urban areas. Private physicians can, however, refer patients to public hospitals. Private physicians are often public sector physicians that work in the private sector on a part-time basis.

The number of practising physicians per 100 000 inhabitants (272 in 2008) is below the EU average (321.6 in 2008) though showing a consistent increase since 1998 (232.3). The number of GPs per 100 000 inhabitants (103 in 2008) was above the EU average (92.2 in 2006), showing a large increase since 1998 (34.5). The number of nurses per 100 000 inhabitants (1547 in 2007) is well above the EU average (830 in 2007) having consistently increased throughout the decade. Authorities acknowledge shortages of staff in some specialties and in some geographic areas. A shortage of GPs in certain municipalities may explain longer waiting times to see a GP. Some municipalities have had to recruit GPs from private companies and pay higher wages which has fuelled some tensions in the public sector. Wages for nurses are deemed low in the health sector compared to other sectors. Staff shortages may be reinforced by the projection that about 43% of all health and social welfare staff working for municipalities will retire by 2020. These elements suggest that a comprehensive human resources strategy may be necessary in order to ensure that the skill mix goes in the direction of a primary care oriented provision, which authorities wish to pursue, that training and recruitment can compensate for staff losses due to retirement and that licensed staff remain or are brought back into the sector. While relatively low wages may have contributed to the below average health expenditure, they may have also pull away a number of licensed staff. Recognising such challenges, authorities have increased the number of study places for doctors and dentists. Staff supply is regulated in terms of quotas for medical students but not in terms of the location of physicians.

Authorities have made some efforts to use primary care vis-à-vis specialist and hospital care. While residents are free to contact a GP, there is in municipal health care a compulsory referral system from primary care to specialist doctors i.e. GPs act like gatekeepers to specialist and hospital care. However, in some areas, shortages in GPs may have led to perceived long waiting times for GP visits and therefore led to unnecessary visits to specialists or emergency departments. Some municipalities report weaknesses in primary care vis-à-vis secondary specialist and hospital care because of their weaker control over hospital costs vis-à-vis primary care. As a consequence, the latter is the one easier to ration, contrary to the aim of encouraging primary care vs. secondary care. Choice of GP, specialist and hospital is allowed but limited.[12] Increasing patient choice is, in fact, a priority of national authorities. A government proposal on a new health care act was presented to the parliament is June 2010. The aim of the new health care act is to give clients the opportunity to choose where they are treated. This freedom of choice would come into effect in two phases by 2014. Authorities have started projects for introducing a number of ICT and e-health solutions to

[11] According to the OECD, Finland scores 2 out of 6 in the OECD scoreboard due to the not very stringent budget controls.

[12] Indeed, according to the OECD, the level of choice of provider in Finland has a zero score out of 6, while gatekeeping scores 4 out of 6.

allow for nationwide electronic exchange of medical data (including patient electronic medical records) to support and render the referral system and care coordination more effective, reduce medical errors and increase cost-efficiency. A stronger emphasis on primary care will require, however, sufficient numbers of staff and the right skill mix.

The number of acute care beds per 100 000 inhabitants (191.2 in 2008) is well below the EU average of 383.2. It has consistently decreased in recent times (260.6 in 1998) and stands as the EU lowest. In some areas there may be a shortage of follow-up/long-term care beds/ facilities which creates bed-blockages in acute care (unnecessary and long use of acute care beds) and may contribute to longer waiting times for surgery. There appears to be no regulation in terms of increases in hospital capacity or equipment capacity, which may partly explain the numbers of units of high-cost equipment rather being among the high ones in EU, as seen in section 1. Hospitals have autonomy to recruit medical staff and other health professionals. Private hospitals are free to establish and expand their capacity in compliance with quality and safety requirements.

# 6. Purchasing, contracting and remuneration systems

Public sector physicians (GPs and specialists) are paid a salary. The pay scale for medical staff and other health professionals is set at national level. The labour unions negotiate with the Commission for Local Authority Employers over salaries. The Government does not have a role in this procedure. Physicians are not eligible to receive bonuses regarding their activity or performance, although a small share of the salary of dentists and primary care physicians is paid following a fee-for-service principle. However, in some cases, patients are assigned a specific doctor and this is paid through a mix of salary (60%), capitation (20%), fee-for-service (15%) and other allowances (5%), so as to encourage timely provision and care coordination. The municipalities get to decide whether they want to organise GP's services this way. It would perhaps be interesting to investigate if this element of performance based payment related to health promotion, disease prevention or disease management actions by GPs could be used more widely, to render primary care more attractive notably in the regions where shortages are felt. Private sector providers are free to set fee / price of service. Fee-for-service is widely used. The possibility to conduct private practice may induce doctors to remain in certain areas or reduce their output in the public sector to induce demand for their private practice.

The municipalities remunerate the hospital districts for their services. In most hospital districts some type of payment per case basis using DRGs[13] is in use. Hospital remuneration methods are negotiated at local level.

When looking at hospital activity, inpatient discharges (18821 per 100 000 inhabitants in 2008) are above the EU average (16231 in 2007) while the number of day case discharges (5429 in 2008) is below the EU average vs. 6120 in 2007). The proportion of surgical procedures conducted as day cases (22.4% in 2008) is below the EU average (28.1% in 2007). Overall hospital average length of stay (9.7 days in 2008) is higher than the EU average (8 days in 2007) although the length of stay for acute care is lower.[14] These figures suggest that there may be some room to increase hospital throughput/efficiency notably by improving the way surgical treatments are conducted (i.e. more use of day case surgery) and by providing alternative care services for long-term care patients in particular psychiatric patients. These figures may help explain why waiting times for elective surgery may be deemed long. The new municipal reform reducing the number of municipalities

[13] The OECD score for remuneration incentives to raise the volume of care in Finland is almost 4 out of 6 as a result of the use of activity related payment elements in hospital remuneration.

[14] OECD Health at Glance 2009.

aims at concentrating /centralising hospital services to induce hospital efficiency and savings but it was not yet possible to observe the full impact of those reforms on hospital activity.

Recognising the problems described in previous sections, the authorities have made a proposal for a reform – the Health Care Act – and have held wide consultations on these proposals. Some stakeholders' comments included providing wider responsibilities to nurses or the proposal to follows what resembles the Danish health system whereby the five tertiary health districts would be responsible for purchasing all primary, specialist, hospital and tertiary care for their residents with funding coming from both municipal and national taxes. Several stakeholders commented that primary care should be further strengthened. In May 2010 new legislation was passed, allowing nurses to prescribe autonomously a limited number of drugs. Special postgraduate education is required for the permission to write prescriptions.

**Pharmaceuticals**

The authorities have implemented a large number of policies to control expenditure on pharmaceuticals. Initial price is based on clinical performance, economic evaluation, the cost of existing treatments and international prices (NL, BE, ES, IE, IS, UK, IT, AT, EL, LU, NO, PT, FR, SE, DE, and DK). The government has used price freezes and cuts and there is a positive and a negative list of reimbursed products which is based partly on health technology assessment information when available. Authorities promote rational prescribing of physicians through treatment guidelines complemented with monitoring of prescribing behaviour and education and information campaigns on the prescription and use of medicines. The structure of co-payments change in 2006 so that the co-payment is now a share of the medicine's cost rather than a fixed amount for any "visit" to the pharmacy, which appears to have encouraged patients to buy excessive quantities of medicines. There is an explicit generics policy. Prescription by active element is in place although its application is rare. Nevertheless, pharmacies are obliged to dispense the cheaper product and replace the prescription by a generic medicine if available. Generics face a fast track registration and lower registration fees. Patients aware of the generic substitution appear to request cheaper medicines and electronic systems allow doctors (and therefore the patients) to access the prices of medicines when prescribing medicines. Generic substitution is particularly important when patients have to incur a large share of the cost. In April 2009, reference pricing was introduced. The reimbursement is based on the reference price that is the price of the cheapest substitutable product plus a small premium. If the patient chooses a product whose retail price exceeds the reference price, he/she must pay the share above the reference price. Both generic substitution and reference pricing systems have had notable downward effects on the pharmaceutical expenditure. Authorities (through KELA, the Social Insurance Institution) monitor the general consumption of prescribed medicines closely and evaluate the budgetary impact of generic substitution.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Finland has an extensive information management and statistics systems and comprehensive data is gathered on physician and hospital activity and quality and health status. Hospital benchmarking data is available allowing for costs and efficiency comparisons. Existing clinical guidelines and practice protocols are coupled with the monitoring of physician activity and feedback to physicians (for example on their prescription behaviour) to encourage compliance with those guidelines. Through surveys, authorities are planning to collect information on patient's experience and satisfaction with the care obtained. They also want to make information publicly available.

The Centre for Health Economics (CHESS) at the National Institute for Health and Welfare undertakes high-quality health economics research on issues relevant for health policy. CHESS focuses on quality and efficiency of health services, financing and provision of health services and

evaluation of health services system. The Finnish Office for Health Technology Assessment (Finohta) produces, supports and coordinates health care technology assessment in Finland. It disseminates assessment results and experiences, both national and international, within the health system. The Pharmaceuticals Pricing Board confirms the reimbursement (including the level of reimbursement) and a reasonable wholesale price for pharmaceuticals.

The Parliament, the Government through the Ministry of Health, and municipalities set public health priorities in terms of outcomes and the reduction of health inequalities. For example, a shared project of the National Institute for Health and Welfare and the Finnish Institute of Occupational Health (the TEROKA project) aims to develop information on health inequalities and to promote the reduction of inequalities. As section 1 suggests there are indeed a number of risk factors that can translate into an important burden of disease and financial costs. Authorities have strongly emphasised health promotion and disease prevention measures in recent years as well as emphasising the important contribution other policy areas can make to improve the health of the population ("Health in all Policies"). Recent legislation will define more explicitly the promotion and preventive services to be provided at municipal level. Promotion and prevention are seen by authorities as a means to ensure long-term sustainability of the health budget: they reduce the development of disease; the need for care; and, the consequent need for funding. Public and total expenditure on prevention and public health services as a % of GDP were above the EU average (0.3% and 0.5% vs. 0.2% and 0.3% in 2008). This was also the case as a % of total current health expenditure (3.6% and 5.7% vs. the EU averages of 2.1% and 2.7% in 2008). Vaccination rates are above the EU average (97% vs. 96% in 2007), while screening rates for cervical and breast cancer are high (70.5% and 86.2% of the target population in 2006).

# 8. Challenges

The analysis above shows that a wide range of reforms have been implemented over the years, to a large extent successfully (e.g. to reduce waiting times, to improve hospital efficiency, to improve data collection and monitoring, to control pharmaceutical expenditure), and which Finland should continue to pursue. The main challenges for the Finnish health care system are as follows:[15]

- To ensure greater coherence between the sources of financing so that they reinforce equity and efficiency in the system.
- To enhance primary care provision by increasing the numbers and spatial distribution of GPs and nurses and by rendering referral system to specialist care more effective.
- To consider whether it is worth introducing some element of performance related payment physicians' remuneration (e.g. through the use of mixed payment schemes) to encourage health promotion, disease prevention and disease management activities or the treatment of vulnerable populations and increase outpatient output and render primary care more attractive. More generally, to ensure sufficient numbers of staff in view of ageing of staff and population.
- To increase hospital efficiency by increasing the use of day case surgery and increasing the supply of follow-up care for long-term care patients so as to reduce the unnecessary use of acute care settings for long-term care patients. In addition, measures pursued in recent years should be consolidated to reduce duplication and improve efficiency and quality in the hospital sector (e.g. concentration and specialisation of hospitals within regions).

[15] The OECD overall efficiency score for Finland is below its group average (about 3.5 years potential gain to be made through greater efficiency in the sector compared to the group average of 2.6 years) and below the OECD average (2.3 years). Areas for improvement include: reinforcing control on resources, enhancing priority setting and reinforcing gate-keeping arrangements to shift resources from inpatient to out-patient care; assess whether a reform of physicians compensation could help improving outpatient care quality.

- To ensure a greater use of health technology assessment to determine new high-cost equipment capacity as well as the benefit basket and the cost-sharing design across medical interventions as is currently done with medicines.
- To further enhance health promotion and disease prevention activities i.e. promoting healthy life styles and disease screening given the recent pattern of risk factors (diet, smoking, alcohol, obesity) in various settings (at work, in school).

# Statistical Annex - Finland[16]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 7.4 | 7.4 | 7.2 | 7.4 | 7.8 | 8.1 | 8.2 | 8.5 | 8.3 | 8.2 | 8.4 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1426 | 1513 | 1614 | 1689 | 1833 | 1905 | 2071 | 2169 | 2258 | 2405 | 2460 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 5.3 | 5.3 | 5.1 | 5.3 | 5.6 | 5.9 | 6.0 | 6.2 | 6.2 | 6.1 | 6.2 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 1024 | 1082 | 1146 | 1213 | 1326 | 1381 | 1512 | 1594 | 1685 | 1796 | 1827 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 5.6 | 6.0 | 6.3 | 6.5 | 6.5 | 6.5 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 19400 | 20500 | 22300 | 22900 | 23600 | 23400 | 25200 | 25700 | 27200 | 29400 | 29400 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | 0.8 | 0.9 | 1.0 | 1.1 | 1.3 | 1.3 | 1.4 | 1.5 | 1.5 | 1.5 | 1.6 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | 2.0 | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | 1.2 | 1.3 | 1.4 | 1.4 | 1.3 | 1.4 | 1.4 | 1.5 | 1.5 | 1.6 | : | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | : | : | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 1.0 | 1.1 | 1.1 | 1.1 | 1.2 | 1.2 | 1.3 | 1.3 | 1.2 | 1.2 | 1.2 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 | 0.7 | 0.6 | 0.7 | 1.0 | 1.0 |
| Proportion of the population that is obese | 9.5 | 10.1 | 11.2 | 11.4 | 11.8 | 12.8 | 14.0 | 14.1 | 14.3 | 14.9 | 15.7 | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 25.1 | 23.2 | 23.4 | 23.8 | 23.4 | 22.2 | 23.0 | 21.8 | 21.4 | 20.6 | 20.4 | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 8.6 | 8.6 | 8.6 | 9.0 | 9.2 | 9.3 | 9.9 | 10.0 | 10.1 | 10.5 | 10.3 | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 81.0 | 81.2 | 81.2 | 81.7 | 81.6 | 81.9 | 82.5 | 82.5 | 83.1 | 83.1 | 83.3 | 82.3 | 82.3 |
| Healthy life years at birth females | 58.3 | 57.4 | 56.8 | 56.9 | 56.8 | 56.5 | 52.9 | 52.4 | 52.7 | 58.0 | 59.4 | 62.3 | 61.6 |
| Life expectancy at birth males | 73.6 | 73.8 | 74.2 | 74.6 | 74.9 | 75.2 | 75.4 | 75.6 | 75.9 | 76.0 | 76.5 | 76.3 | 75.9 |
| Healthy life years at birth males | 55.9 | 55.8 | 56.3 | 56.7 | 57.0 | 57.3 | 53.1 | 51.7 | 52.9 | 56.7 | 58.6 | 61.5 | : |
| Infant mortality | 4.2 | 3.6 | 3.8 | 3.2 | 3.0 | 3.1 | 3.3 | 3.0 | 2.8 | 2.7 | 2.6 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 71.8 | 71.5 | 71.1 | 71.8 | 72.3 | 72.5 | 73.0 | 73.5 | 74.6 | 74.6 | 74.2 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 21.9 | 22.2 | 22.3 | 21.6 | 21.2 | 20.9 | 20.5 | 20.1 | 19.0 | 18.9 | 19.4 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | 3.4 | 3.1 | 2.8 | 2.7 | 2.7 | 2.7 | 2.6 | 2.5 | 2.6 | 2.3 | 2.2 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | 3.2 | 2.9 | 2.6 | 2.6 | 2.5 | 2.5 | 2.5 | 2.3 | 2.4 | 2.1 | 2.0 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | : | 44.5 | 46.0 | 48.1 | 50.0 | 51.8 | 53.3 | 54.2 | 55.1 | 56.0 | 56.5 | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 232.3 | 240.3 | 250.1 | 250.3 | 253.0 | 256.7 | 259.5 | 263.9 | 268.7 | 269.5 | 272.0 | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | : | : | 1436.0 | : | : | : | 1545.0 | 1580.0 | 1583.0 | 1547.0 | : | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 34.5 | 36.3 | 37.7 | 38.7 | 39.7 | 40.6 | : | 101.0 | 102.0 | 101.0 | 103.0 | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 260.6 | 250.4 | 241.7 | 237.6 | 232.6 | 230.5 | 224.8 | 220.3 | 213.8 | 205.0 | 191.2 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 4.2 | 4.3 | 4.3 | 4.3 | 4.2 | 4.2 | 4.2 | 4.3 | 4.3 | 4.2 | 4.3 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | 21045 | 20842 | 20514 | 20126 | 19620 | 19004 | 18821 | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | : | : | 4985 | 5051 | 5192 | 5552 | 5403 | 5429 | 5434 | 6120 | 5031 |
| Hospital average length of stay | : | : | : | : | 12.9 | 12.7 | 12.5 | 12.5 | 12.7 | 12.9 | 12.4 | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | : | : | 19.2 | 19.5 | 20.2 | 21.6 | 21.6 | 22.2 | 22.4 | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | 199.0 | 224.3 | 237.8 | 253.8 | 277.8 | 291.2 | 321.4 | 336.6 | 323.3 | 339.0 | 352.0 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 94.0 | 109.6 | 114.5 | 125.6 | 140.6 | 147.2 | 167.7 | 175.9 | 179.1 | 186.8 | 195.0 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | 14.6 | 15.6 | 15.5 | 15.8 | 16.1 | 16.2 | 16.4 | 16.4 | 15.2 | 15.0 | 15.2 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 6.9 | 7.6 | 7.5 | 7.8 | 8.1 | 8.2 | 8.5 | 8.6 | 8.4 | 8.2 | 8.5 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | 4.8 | 4.8 | 4.9 | 4.9 | 5.0 | 5.1 | 5.1 | 5.3 | 5.4 | 5.8 | 5.7 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | 3.0 | 3.0 | 2.9 | 2.9 | 3.0 | 3.0 | 3.1 | 3.2 | 3.4 | 3.7 | 3.6 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 95.0 | 95.0 | 95.9 | 95.9 | 95.3 | 96.0 | 96.0 | 97.0 | 97.0 | 97.0 | 97.0 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | 67.5 | 71.8 | 71.5 | : | 69.0 | 70.5 | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | 88.0 | : | 87.7 | : | 86.0 | 86.2 | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[16] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# Sweden

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (30100 PPS in 2008) is well above the EU average (25075 PPS in 2008) up from 24100 in 2000. From 2000 to 2007 Sweden grew at an average rate of 3.6%. As a result of the global economic crisis, GDP growth was -4.9% in 2009 and the unemployment rate reached 8.3% in the same year. The response to the crisis was to implement a fiscal stimulus package to limit economic contraction. The economy shows signs of recovery with a forecasted economic growth of 1.8% in 2010 and 2.5% in 2011.[1] As a consequence of the crisis and the fiscal stimulus, the budget deficit reached 0.5% of GDP in 2009 and is forecasted to reach 2.1% in 2010. Fiscal consolidation to bring government revenues and spending into line in the coming years may therefore have some consequences for the health sector through consolidating current measures to improve its efficiency.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (9.2% in 2008) is slightly below the EU average[3] (9.6%) and the EA average (10% in 2008). It has increased from 8.2% in 2000 but it is lower than between 2002-2003. Public expenditure on health as a percentage of GDP is, however, slightly above the EU average (7.6% vs. 7.4% in 2008), having increased from 7% in 1998 but again same as in 2002 and lower than in 2003. Total (2838 PPS in 2008) and public (2323 PPS in 2008) per capita expenditure is above the EU average (2381 PPS and 1826 PPS in 2008), having consistently increased since 2000 (1989 PPS and 1688 PPS).

**The role of technology**

Total (1.2%) and public (0.7%) expenditure on pharmaceuticals as a percentage of GDP[4] was below the EU average (respectively 1.5% and 1.0%) in 2008. This is similar for total (13.9% vs. 16.9% in 2008) and public (8.1% vs. 11.2% in 2008) pharmaceutical expenditure as a percentage of total current health expenditure. The low shares probably relate to the large number of policies in place in this area. There was no information on the number of MRI units, CTS units, and PET scanners per 100 000 inhabitants.

**Health Status and healthy behaviour – life-styles – risk factors**

Life expectancy (83.3 years for women and 79.2 years for men in 2008) is above the EU average (82.2 and 75.8) and the EA average for men (around the EA average for women). Healthy life years (68.7 years for women and 69.2 for men in 2008) are above the EU average.[5] Mortality by ischemic heart disease, prostate cancer and suicide is relatively high by OECD standards.[6] Data shows an increase in the proportion of the population which is obese (from 8.1% in 1998 to 10.2% in 2007, with fluctuations over the period), a reduction in the share of the population that smokes regularly (from 19.1% in 1998 to 14.5% in 2006) and an increase in per capita consumption of alcohol (from

1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on expenditure is taken from OECD health data and Eurostat database.

3 The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 Expenditure on pharmaceuticals used here corresponds to category HC.5.1 in the OECD System of Health Accounts. Note that this SHA-based estimate only records pharmaceuticals in ambulatory care (pharmacies), not in hospitals.

5 Data on life expectancy and healthy life years is from the Eurostat database.

6 Mortality rates are based on the crude number of deaths according to selected causes in the WHO Mortality Database; they have been age-standardised to the 1980 OECD population, to remove variations arising from differences in age structures across countries and over time within each country (OECD Health at Glance 2009).

5.8 litres in 1998 to 6.9 litres in 2007). Although these are some of the best figures in the EU, authorities show concern over some of these trends and the need to monitor them.

## 2. Expenditure prospects: population ageing and future health status

Population is projected to increase by 1 700 000 from 2008 to 2060. Life expectancy is projected to increase by 6.2 years for women (slightly less than the EU average of 6.9 years) and 6.5 years for men (less than the EU average of 8.5 years). The share of the old (65+) is projected to increase by 9.1 pps and the share of the very old (80+) by 7.2 pps (less than the respective EU average change of 13 pps and 7.8 pps) from 2008 to 2060.

As a result of ageing[7], health care expenditure is projected to increase by 0.9 pps of GDP (much below the average change in the EU of 1.7 pps). Good health (translated by a constant health scenario) could reduce the projected expenditure increase to zero, highlighting the importance of improving health behaviour.

## 3. Health care coverage and expenditure

A regionally based National Health Service (NHS), funded on the basis of taxes (central, county and municipal taxes), provides full population coverage. On the basis of legal provisions (harmonised legislation and guidelines) and under the supervisor role of the Government through the Ministry of Health and Social Affairs, the counties or regions (18 counties, 2 regions and one independent island community) and the municipalities are responsible for providing or funding a wide range of health related services. Regionally organised services include primary, specialist outpatient and hospital care, health promotion, disease prevention and rehabilitation. Municipalities are responsible for the provision or funding of care for the elderly and the disabled, and long-term psychiatric care for their residents.

Most services (primary, outpatient specialist care, hospital day case and inpatient care, dental care, physiotherapy) involve a fee at the point of use. This fee may vary across services and across counties or regions. In addition, eyeglasses and contact lenses and physiotherapist services are not funded or provided by counties or regions and high cost-sharing applies to dental care, dental prostheses and pharmaceuticals. It is not clear whether the current cost-sharing design induces a greater use of more cost-effective services (e.g. primary care vs. specialist care when this is not necessary). Children, those with certain medical conditions and those who have reached an upper limit for out-of-pocket payments are exempted from cost-sharing. 2.3% of the population buys supplementary private insurance (to cover the services not covered by public provision/ funding). In 2008, private expenditure and out-of-pocket expenditure were 18.1% and 15.6% of total health expenditure and therefore respectively below and above the EU average (22.7% and 14.4%). The share of private and out-of-pocket expenditure was higher in 2008 than in 1998, though lower than in 2001 and in 2004-2007.[8]

To improve access and reduce the waiting times for primary care, legislation was introduced to allow for the choice of primary care physician and the contracting with private primary care providers. To reduce waiting times for hospital surgery and reduce important regional variations in the waiting time, which are seen as a problem in Sweden (e.g. for hip replacement and cataracts), a law from July 2010 regulates the waiting time guarantee which provides a national time guarantee

[7] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf).

[8] As a result, Sweden scores 6 out of 6 on the breadth, almost 6 in the scope and a bit less than 5 on the depth of basic coverage according to the OECD scoreboard.

for care (i.e. care must be provided within 3 months) and an optional agreement between the councils allows patients a free choice of hospital. In addition, the Swedish Association for Local Communities and Regions together with the National Board of Health and Medical Care publish comparisons of the quality and efficiency of health care in different counties or regions and hospitals. Waiting times – reported by the county/regional level to the national administration according to agreed guidelines – have seen some reduction since these systems have been implemented.

Hence, some efforts to improve access may help explain the increase in public and total expenditure observed in the last decade though it does not appear to be the main explanation.

# 4. Collection, pooling and allocation of financial resources

In 2008, 81.9% of total health expenditure funding came from public sources, including central taxes (about 2% of the expenditure in the form of state grants earmarked for certain purposes), county taxes (about 71% of the total expenditure) and local taxes (about 8%), 15.6% from out-of-pocket payments and the rest from private insurance.

The level of taxes to be earmarked to the health sector is defined by the central government (general taxation), the counties or regions (county taxation) and the municipalities (for local taxes). The Parliament, the central government, the county government and the municipal government set the public budget for health, in each respective responsibility. The central government determines resource allocation across regions (based on demographic and mortality/morbidity data and historic costs). The funds to be allocated to each sector/ type of care are determined by the counties or regions and the municipalities given their respective responsibilities. Hospitals then exercise their autonomy to recruit medical staff and other health professionals and negotiate salaries. The Ministry of Social Affairs and Health defines general policy guidelines and regulation.

This suggests a rather complex and decentralised decision making and resource allocation process, within a nationally agreed regulatory framework but in the presence of a not explicitly defined basic benefit package. Nevertheless, the level of expenditure in administering such a system is not high. Public (0.1%) and total (0.1%) expenditure on health administration and health insurance as a percentage of GDP is below the EU average (0.3% and 0.4% respectively in 2008), as is public and total expenditure on health administration and health insurance as a percentage of current health expenditure (1.4% and 3.1% vs. 1.4% and 4.4% in 2008).

There are concerns that such decentralised decision making process has lead to large disparities in the organisation, availability, and quality of service provision, and has reduced the ability to explore economies of scale and scope in care delivery. Given national staff shortages, some counties have had more problems in recruiting physicians, especially those rural and more remote areas. This is why there is an ongoing process to merge county councils into regions: to strengthen the financial basis and organise services in a more rational way. The Responsibility Committee in 2007 suggested the grouping of the 18 counties into six to nine regions. The reform would aim to control expenditure / reduce costs, as well as increase the quality of care and reduce geographic disparities in care provision, via, on the one hand, an increase in the population served by health services in each region and therefore a higher pooling of funds and, on the other hand, the concentration/ specialisation in the provision of certain services (e.g. hospital care, very specialised services). The reform is still in its very beginning though: the issue is for the moment pursued by local governments, with few governmental initiatives in this area. Therefore, it is not yet possible to see the consequences of such a reform in terms of expenditure savings. There have been a number of hospital mergers or the creation of hospital groups as a means to render some hospitals viable. These have been accompanied, however, by some public discontentment.

Interestingly, while in the 1990s mostly councils were using a purchaser-provider split, they now appear to have gone back to the more traditional way of public provision and administration. In some counties there has been a move towards integrating each hospital with primary care and municipal services.

There is a strict health budget defined annually by regions and for different health services. Budget deficits in the sector have occurred in the past and have resulted in a number of cost-containment policies and stricter budget rules.[9]

# 5. Providers status, referral systems and patient choice

As care provision is defined at the county level, there are some differences in the way the various types of care are organised. In general, primary care is provided by general practitioners (GPs) in public health centres while outpatient specialist care is provided in outpatient departments in public hospitals. There are 79 hospitals in Sweden, many of which are local hospitals with limited specialisation, some of which are regional hospitals offering a wider range of specialties and 8 are regional highly specialised university hospitals. About 98% of all hospital beds are public. Provision has traditionally been public but private provision notably in terms of private primary care providers, with whom the councils or regions establish contracts, has been encouraged. Some hospitals are run by private companies but are financed by public funds. There are also some private practices of physiotherapists or psychiatric care. Private provision is more common in densely populated urban areas. Still, dual practice of private physicians should be of minor significance, since private practitioners who are reimbursed according to a national tariff are prevented by law to also occupy public-sector employment.

The number of practising physicians per 100 000 inhabitants (358 in 2006) is above the EU average (323 in 2006) and showing a consistent increase since 1998 (298). The number of GPs per 100 000 inhabitants (60.2 in 2006) is below the EU average (92.2 the same year), but showing an increase from 1998. The number of nurses per 100 000 inhabitants (1155 in 2006) is well above the EU average (821 in 2006) having consistently increased throughout the decade, by a bit more than 10% since 1998. The authorities acknowledge shortages of physicians in some specialties and in some counties. In particular, they acknowledge a general shortage of GPs, especially significant in certain municipalities, which results in longer waiting times to see a GP. As a consequence, patients tend to see specialists or go to emergency care directly but unnecessarily. This has forced some counties to recruit GPs from abroad or pay higher wages, increasing the costs of health care delivery. Staff shortages may be reinforced by the fact that 59% of all physicians were more than 45 years old in 2006 and many will retire in less than 10 to 15 years. These elements suggest that a comprehensive human resources strategy may be necessary in order to ensure that the skill mix goes in the direction of a primary care oriented provision, which the authorities wish to pursue, that training, recruitment and bringing licensed but non-practising physicians back into the sector can compensate for staff shortages and losses due to retirement. Staff supply is regulated in terms of quotas for medical students and by speciality but not in terms of the location of physicians, which explains the disparities in staff availability across counties or regions.

Authorities' efforts to encourage the use of primary care vis-à-vis specialist and hospital care have included contracting with private primary care providers and allowing patient choice of GP. These may not have yet proven very successful because a stronger emphasis on primary care requires sufficient numbers of staff and the right skill mix, which are currently lacking. This means that

[9] According to the OECD, Sweden scores 6 out of 6 in the OECD scoreboard due to the very stringent budget controls.

residents are free to choose and register with a GP but there is no compulsory referral system from primary care to specialist doctors i.e. GPs acting as gatekeepers to specialist and hospital care. Choice of GP, specialist and hospital is allowed and a priority for the authorities,[10] and even seen as possibly strengthening the role of primary care. Indeed, experience from recent primary care reform in Stockholm County Council "Vårdval Stockholm" shows that increased elements of patient choice and competition has led to, with respect to the impact on other subsectors and ancillary services, the observation of no "spillover" effects. On the contrary, primary care has increased its share of total ambulatory care and utilization of medical services declined slightly. There has also been a relatively large proportion of new entrants into the primary care sector. The implementation of the customer choice reform within primary care across the country, as one part of a new national legislation, may thus strengthen the role of primary care.[11] Moreover, authorities have been introducing a number of ICT and e-health solutions to allow for nationwide electronic exchange of medical data (including patient electronic medical records) to support care coordination, reduce medical errors and increase cost-efficiency.

The number of acute care beds per 100 000 inhabitants (217.9 in 2005) is far below the EU (and EA) average of 402.1 in 2005. It has consistently decreased in recent times (257.1 in 1998) and is one of the EU lowest. However, structural differences have to be taken into account when analysing these figures. For instance, the "Ädel-reform" of 1992 transferred the responsibility for those considered medically treated to the social care sector (especially the elderly, who instead receive social care in the elderly care sector), which had a significant impact on demand for health care beds. In addition, the average length of stay has been effectively shortened in Sweden by utilising open specialised care to a larger extent than previously. Still, in some areas there may be a shortage of follow-up/long-term care beds/ facilities which creates bed-blockages in acute care (unnecessary and long use of acute care beds) and may contribute to longer waiting times for surgery. While counties or regions plan for the number of hospitals and the provision of specific specialised services, there appears to be no regulation in terms of the number of beds or the supply of high cost equipment capacity, which may explain county/ regional and even hospital differences in the numbers of units of high-cost equipment. Hospitals have autonomy to recruit medical staff and other health professionals and to determine their remuneration level.

# 6. Purchasing, contracting and remuneration systems

Public sector physicians (GPs and specialists) are paid a salary. Salaries are determined at hospital level. Physicians appear not to be eligible to receive bonuses regarding their activity or performance.[12] It would perhaps be interesting to investigate if an element of performance-based payment related to health promotion, disease prevention or disease management actions or treatment of vulnerable patients by GPs could be used more widely, to render primary care more attractive in general and in the regions where the more severe shortages are felt in particular.

Hospitals are paid a combination of payment-per-case basis using DRGs (55%) and global budget.[13] Hospital remuneration methods are defined at central level with the DRG weights and other service rates negotiated at county/regional level and municipal level.

[10] According to the OECD, the level of choice of provider in Sweden has indeed a score of 6 out of 6, while gatekeeping scores 0 out of 6.

[11] There is indeed a national regulation that all counties should have a "patient/care choice system" for the selection of primary care provider ("Vårdvalssystem").

[12] As for the private practitioners, they are reimbursed according to a national tariff, and thus compensated on a fee-for-service basis. A small portion of the private health care production is in fact conducted by private practitioners. Other private health care production is instead based on local contractual arrangements where decisions on doctors' payment in large are decentralized to the private healthcare provider.

[13] The OECD score for remuneration incentives to raise the volume of care in Sweden is a bit more than 2 out of 6 as a result of the use of activity related payment elements in hospital remuneration though not in other areas.

When looking at hospital activity, inpatient discharges – per 100 000 inhabitants – are below the EU average (14910 vs. 15986) and the number of day case discharges is well below the EU average (1314 vs. 5828 in 2006). The proportion of surgical procedures conducted as day cases (8.1%) is far below the EU average (25.6% in 2006). Overall hospital average length of stay (6.4 days in 2006) is also below the EU average (8.1 days in 2006). These figures suggest that there may be some room to increase hospital throughput/efficiency notably by improving the way surgical treatments are conducted (i.e. more use of day case surgery) and by providing alternative care services for long-term care patients in particular psychiatric patients. These figures may explain why waiting times for elective surgery may be deemed long. The new county/ regional reform, which merges the current number of counties in a few regions aims at concentrating / centralising / specialising hospital services to induce hospital efficiency and savings but it was not yet possible to observe the full impact of those reforms on hospital activity.

**Pharmaceuticals**

The authorities have implemented a number of policies to control expenditure on pharmaceuticals, although some policies have been discontinued in recent years (e.g. reference pricing which was discontinued in 2002). Initial price is based on economic evaluation. The authorities use price volume agreements with pharmaceutical companies. There is a positive list of reimbursed products which is based on health technology assessment information/ economic evaluation. Authorities promote rational prescribing of physicians through treatment and prescription guidelines complemented with monitoring of prescribing behaviour and education and information campaigns on the prescription and use of medicines. There are monthly, quarterly and annual evaluations at county level on prescriptions and co-payments and physicians receive feedback. These are coupled with pharmaceutical budgets at county level. There are also information and education campaigns directed at patients and cost-sharing to encourage a rational use of medicines on the patients' side. Patients pay the full price up to a certain cost level (900 SEK), after which there are some reductions in the additional costs. In a year the maximum amount a patient can pay in reimbursable medicines is 1800 SEK. There is an explicit generics policy. Generic substitution takes place i.e. pharmacies are obliged to dispense the cheaper product and to replace the prescription by a generic medicine when available. If patients refuse a generic they will have to pay the difference between the reimbursement price of the branded drug and the pharmacy retail price of the cheapest available generic. Moreover, this cost is deemed extra and will not be considered in the computation of the maximum costs a patient can incur in a year on medicines. Although prescription by active element is not compulsory, doctors are encouraged to prescribe generic alternatives. Generics face a fast track registration and speedy decision.

# 7. Information and monitoring, use of cost effectiveness and health promotion

Sweden has extensive information management and statistics systems and comprehensive data is gathered on physician and hospital activity and quality and health status. Data is provided at county/ region and municipal level and compiled by the Swedish Association for Local Communities and Regions together with the National Board of Health and Welfare. Some of this information is published, and allows for public comparisons of counties/ regions and hospitals in terms of activity and quality too. Physicians are monitored and are given feedback on their prescription behaviour.

The Swedish Council on Technology Assessment on Health conducts and gathers information on health technology assessment and conducts economic evaluation and cost-effectiveness analysis which is used to define whether new medicines are covered by the health system and to what extent (level of reimbursement) as well as to define clinical guidelines for medicines.

The central Government, through the Ministry of Health and Social Affairs, sets and monitors public health priorities in terms of process, outcomes and the reduction of health inequalities. As section 1 suggests there are some risk factors that can translate into an important burden of disease and financial costs. Authorities have emphasised health promotion and disease prevention measures in recent years. Promotion and prevention are seen by the authorities as a means to ensure long-term sustainability of the health budget: they reduce the development of disease and therefore the need for care and therefore the need for funding. Public and total expenditure on prevention and public health services as a % of GDP are the same as the EU average (0.2% and 0.3% in 2008). But as a % of total current health expenditure, both public and total expenditure on prevention and public health services are above the EU average (2.7% vs. 2.1% and 3.6% vs. 2.7% in 2008). Vaccination rates are also above the EU average (98% vs. 96% in 2008), while screening rates for cervical cancer are high (78.6% of the target population in 2006).

# 8. Challenges

The analysis above has shown that a range of reforms have been implemented in recent years. For example, the reduction of waiting times, improvements to hospital efficiency, improved data collection and monitoring and the control of pharmaceutical expenditure, some to a large extent successful, and which Sweden should continue to pursue. The main challenges for the Swedish health care system are as follows:[14]

- To ensure the coherence of resource allocation to different types of care in different regions controlling for demographic and mortality/morbidity characteristics of the population.
- More generally, to develop a comprehensive human resources strategy that tackles current shortages in primary care staff and ensures sufficient numbers of staff in general and in the future in view of staff and population ageing.
- To enhance primary care provision by increasing the numbers and spatial distribution of GPs and primary care nurses. To couple these measures with a referral system to specialist care either through financial incentives (reimbursement levels higher if a referral takes place) or by making it compulsory. At the same time exploring if current cost-sharing arrangements can be adjusted to render primary care more attractive. This could improve access to care while reducing unnecessary use of hospital care and therefore overall costs.
- To increase hospital efficiency by increasing the use of day case surgery and increasing the supply of follow-up care for long-term care patients so as to reduce the unnecessary use of acute care settings for long-term care patients, notably psychiatric patients. To consolidate the measures pursued in recent years to reduce duplication and improve efficiency and quality in the hospital sector (e.g. concentration and specialisation of hospitals within regions), notably through the finalisation of the current administrative reform.
- To ensure a greater use of health technology assessment to determine new high-cost equipment capacity as well as the benefit basket and the cost-sharing design across medical interventions as is currently done with medicines.
- To consider whether it is worth introducing some element of performance related payment in physicians' remuneration (e.g. through the use of mixed payment schemes) to encourage health promotion, disease prevention and disease management activities or the treatment of vulnerable populations and increase outpatient output.

[14] The OECD overall efficiency score for Sweden is slightly below its group average (about 1.8 years potential gain to be made through greater efficiency in the sector compared to the group average of 1.4 years) but above the OECD average (2.3 years). Areas for improvement include: incorporating an activity based component in the existing remuneration of physicians notably to increase the number of consultations per physician; improving information on the quality of services and use too as pressure to improve providers' activity; increase consistency in the allocation of resources across levels of government.

# Statistical Annex - Sweden[15]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 8.2 | 8.3 | 8.2 | 9.0 | 9.3 | 9.4 | 9.2 | 9.2 | 9.1 | 8.9 | 9.2 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1697 | 1843 | 1989 | 2154 | 2305 | 2391 | 2484 | 2477 | 2603 | 2784 | 2838 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 7.0 | 7.1 | 7.0 | 7.3 | 7.6 | 7.8 | 7.5 | 7.5 | 7.4 | 7.3 | 7.6 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 1456 | 1580 | 1688 | 1762 | 1892 | 1973 | 2032 | 2023 | 2123 | 2276 | 2323 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 7.3 | 7.5 | 7.7 | 7.9 | 8.0 | 8.0 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 20800 | 22300 | 24100 | 24000 | 24800 | 25400 | 27000 | 27100 | 28600 | 30600 | 30100 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | : | : | : | : | : | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | 1.1 | 1.1 | 1.1 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.2 | 1.2 | 1.2 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 1.0 | 1.0 |
| Proportion of the population that is obese | 8.1 | 8.1 | 9.2 | 9.2 | 10.2 | 9.7 | 9.8 | 10.7 | 9.6 | 10.2 | : | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 19.1 | 19.3 | 18.9 | 18.9 | 17.8 | 17.5 | 16.2 | 15.9 | 14.5 | : | : | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 5.8 | 6.1 | 6.2 | 6.5 | 6.9 | 6.9 | 6.5 | 6.6 | 6.9 | 6.9 | : | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 82.1 | 82.0 | 82.0 | 82.2 | 82.2 | 82.5 | 82.8 | 82.9 | 83.1 | 83.1 | 83.3 | 82.3 | 82.3 |
| Healthy life years at birth females | 61.3 | 61.8 | 61.9 | 61.0 | 61.9 | 62.2 | 60.9 | 63.1 | 67.1 | 66.6 | 68.7 | 62.3 | 61.6 |
| Life expectancy at birth males | 76.9 | 77.1 | 77.4 | 77.6 | 77.8 | 78.0 | 78.4 | 78.5 | 78.8 | 79.0 | 79.2 | 76.3 | 75.9 |
| Healthy life years at birth males | 61.7 | 62.0 | 63.1 | 61.9 | 62.4 | 62.5 | 62.0 | 64.2 | 67.1 | 67.5 | 69.2 | 61.5 | : |
| Infant mortality | 3.5 | 3.4 | 3.4 | 3.7 | 3.3 | 3.1 | 3.1 | 2.4 | 2.8 | 2.5 | 2.5 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 85.8 | 85.7 | 84.9 | 81.8 | 82.1 | 82.5 | 81.8 | 81.6 | 81.6 | 81.7 | 81.9 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 13.6 | 13.4 | 13.8 | 15.9 | 15.5 | 15.4 | 15.9 | 16.3 | 16.2 | 15.8 | 15.6 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | 0.6 | 0.5 | 0.5 | 2.4 | 2.3 | 1.5 | 1.7 | 1.5 | 1.6 | 1.6 | 1.4 | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | 0.6 | 0.5 | 0.5 | 2.4 | 2.3 | 1.5 | 1.7 | 1.5 | 1.6 | 1.6 | 1.4 | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | 55.2 | 56.7 | 57.9 | 58.7 | 59.4 | 59.7 | 59.6 | 61.8 | 59.0 | : | : | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 297.5 | 302.1 | 307.8 | 317.5 | 327.0 | 335.4 | 342.2 | 348.7 | 356.6 | : | : | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | 1041.0 | 1053.0 | 1060.0 | 1075.0 | 1097.0 | 1109.0 | 1128.0 | 1141.0 | 1155.0 | : | : | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 51.4 | 52.0 | 52.8 | 54.6 | 56.0 | 57.0 | 57.7 | 58.9 | 60.2 | : | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | 257.1 | 253.9 | 247.9 | 234.1 | 227.9 | 222.7 | 222.2 | 217.9 | : | : | : | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 2.9 | 2.9 | 2.8 | 2.9 | 3.0 | 2.8 | 2.8 | 2.8 | 2.8 | : | : | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | 15272 | 14997 | 14781 | 14751 | 14729 | 14817 | 14910 | : | : | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | 1194 | 1210 | 1208 | 1211 | 1278 | 1326 | 1314 | : | : | 6120 | 5031 |
| Hospital average length of stay | : | : | 6.8 | 6.7 | 6.7 | 6.5 | 6.4 | 6.4 | 6.4 | : | : | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | 7.3 | 7.5 | 7.6 | 7.6 | 8.0 | 8.2 | 8.1 | : | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | 231.7 | 255.2 | 274.8 | 300.4 | 323.7 | 328.8 | 345.0 | 339.8 | 355.0 | 374.5 | 373.8 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | 159.3 | 180.0 | 192.2 | 187.9 | 202.6 | 204.6 | 210.0 | 205.2 | 210.8 | 218.6 | 217.1 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | 14.3 | 14.6 | 14.5 | 14.6 | 14.7 | 14.4 | 14.5 | 14.3 | 14.2 | 14.1 | 13.9 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | 9.8 | 10.3 | 10.2 | 9.1 | 9.2 | 8.9 | 8.8 | 8.6 | 8.4 | 8.2 | 8.1 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | : | : | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | : | : | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | : | : | 3.5 | 3.7 | 3.3 | 3.3 | 3.5 | 3.2 | 3.5 | 3.6 | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | : | : | 2.6 | 2.8 | 2.5 | 2.4 | 2.7 | 2.3 | 2.7 | 2.7 | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 99.2 | 99.0 | 99.0 | 98.6 | 99.0 | 99.0 | 98.6 | 98.7 | 98.7 | 98.7 | 98.3 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | : | : | 72.0 | : | : | : | 78.6 | : | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | : | : | : | : | : | : | : | : | : | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[15] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.

# United Kingdom

## 1. Recent trends in health spending and general expenditure drivers

**General economic situation**

GDP per capita (29100 PPS in 2008) is well above the EU average (25075 PPS in 2008) up from 22700 in 2000. From 2000 to 2007 the UK grew at an average rate of 2.8%. As a result of the global economic crisis, GDP growth was -4.9% in 2009 and the unemployment rate reached 7.6% in the same year. The response to the crisis was to implement a fiscal stimulus package to limit economic contraction. The economy shows signs of recovery with a forecasted economic growth of 1.2% in 2010 and 2.1% in 2011.[1] As a consequence of the crisis and the fiscal stimulus, the budget deficit reached 11.5% of GDP in 2009 and is forecasted to reach 12% in 2010. Fiscal consolidation to bring government revenues and spending into line in the coming years may therefore have some consequences for the health sector, although the new government formed in May 2010 has made a specific commitment to ring-fence health service spending against such pressures.

**Recent trends of expenditure**

Total expenditure[2] on health as a percentage of GDP (8.7% in 2008) is below the EU average[3] (9.6% in 2008). It has consistently increased from 6.7% in 1998. Public expenditure on health as a percentage of GDP is about the EU average (7.2% vs. 7.4% in 2008), having increased from 5.4% in 1998. Total (2559 PPS in 2008) and public (2115 PPS in 2008) per capita expenditure are above the EU average (2381 PPS and 1826 PPS in 2008), having consistently increased since 1998 (1335 PPS and 1072 PPS).

**The role of technology**

Total and public expenditure on pharmaceuticals as a percentage of GDP (1% and 0.9% in 2008) or as a percentage of total current health expenditure (12.4% and 10.5% in 2008) are below the respective EU averages (1.5%, 1%, 16.9% and 11.2% in 2008). The number of CTS units (0.7 in 2008) and the number of angiography units (0.1 in 2007) per 100 000 inhabitants are well below the respective EU average (1.1 in 2008 and 0.7 in 2007). The number of CTS units shows a small increase over time. The number of MRI units (0.6 in 2008) and the number of PET scanners (0.1 in 2005) are respectively slightly below and the same as the respective EU averages (0.7 in 2008 and 0.1 in 2005).[4] Such values are likely the result of policies to ensure a cost-effective use of medicines and high-cost-equipment.

**Health Status and healthy behaviour – life-styles – risk factors**

Life expectancy (81.9 years for women and 77.7 years for men in 2007) is above the EU average (82.3 and 76.2 in 2007). Healthy life years (66.1 years for women and 64.9 for men in 2007) are above the EU average (62.3 and 61.5 in 2007).[5] However, mortality by ischemic heart disease, breast cancer and prostate cancer is relatively high by OECD standards.[6] The authorities are also concerned with the observed health inequalities across regions and socio-economic status. Data

1 European Commission (2010), European Economic Forecast – Spring 2010.

2 Data on expenditure is taken from OECD health data.

3 The EU averages are weighted averages using either GDP, or population, or expenditure or current expenditure on health in millions of units or units of staff where relevant. The EU average for each year is based on all the available information in each year.

4 Data on technology is taken from OECD health data and Eurostat database.

5 Data on life expectancy and healthy life years is from the Eurostat database. Data on life-styles is taken from OECD health data and Eurostat database.

6 Mortality rates are based on the crude number of deaths according to selected causes in the WHO Mortality Database; they have been age-standardised to the 1980 OECD population, to remove variations arising from differences in age structures across countries and over time within each country (OECD Health at Glance 2009).

shows a consistent increase in the proportion of the population which is obese (from 19% in 1998 to 24.5% in 2008). It also shows a slight increase in per capita consumption of alcohol (from 9.8 in 1998 to 10.8 litres in 2008), although the 2008 value is lower than those registered between 2002 and 2006. Data shows a reduction in the share of the population that smokes regularly (from 27% in 1998 to 22% in 2008). These figures merit monitoring and action, especially in relation to breast cancer mortality, obesity and alcohol consumption.

## 2. Expenditure prospects: population ageing and future health status

Population is projected to increase by 15 400 000 from 2008 to 2060. Life expectancy is projected to increase by 6.4 years for women (slightly less than the EU average of 6.9 years) and 7.7 years for men (less than the EU average of 8.5 years). The share of the old (65+) is projected to increase by 8.6 pps and the share of the very old (80+) by 4.5 pps (less than the respective EU average change of 13 pps and 7.8 pps) from 2008 to 2060.

As a result of ageing[7], health care expenditure is projected to increase by 2.2 pps of GDP (above the average change in the EU of 1.7 pps). Good health (translated by a constant health scenario) reduces the projected expenditure increase by about half to 1 pps, highlighting the importance of improving health behaviour.

## 3. Health care coverage and expenditure

A National Health Service, organised in four health systems - England, Wales, Scotland and Northern Ireland, provides full population coverage. It is funded on the basis of national taxation, Primary Care Trusts commission a wide range of services (including primary care, specialist outpatient care, hospital acute care, health promotion, disease prevention, rehabilitation, mental health care, ambulance care) for the residents in their catchment area, on the basis of legal provisions and clinical guidelines and under the supervisor role of the Government through the Department of Health (DoH) and 10 Strategic Health Authorities.

Services are free at the point of need to all residents. Cost-sharing is limited and applies to some prescription drugs (1/4 of NHS prescriptions), optical and dental services. Cost-sharing schemes vary across the four countries (e.g. there are no prescription fees in Wales and reduced prescription fees in Scotland). Eyeglasses and contact lenses are mostly not funded or provided by the NHS. Children, elderly, pregnant women, those with certain medical conditions, those with an income below a certain threshold, beneficiaries of social benefits and those who have reached an upper limit for out-of-pocket payments are exempted from cost-sharing. 11.1% of the population buys duplicative private insurance (to cover the same services that are publicly provided/ funded). In 2008, private and out-of-pocket expenditure were 17.4% and 11.1% of total health expenditure and therefore below the EU average (22.7% and 14.4%) in 2008. The share of private and out-of-pocket expenditure was lower in 2008 than in 1998 (19.6% and 14.1%), showing a consistent decrease in the share of private expenditure.[8]

Increasing the choice of primary care physician is currently seen as a means to improve access and reduce the waiting times for primary care visits. To reduce waiting times for hospital elective surgery and reduce geographic disparities in the wait, significant additional investment has been made in the health sector in recent years. This was coupled with targets to receive treatment

[7] I.e. considering the "pure ageing scenario" of the projections (see The 2009 Ageing Report at: http://ec.europa.eu/economy_finance/publications/publication14992_en.pdf ).

[8] As a result, the UK scores 6 out of 6 on the breadth, almost 6 in the scope and 5.5 on the depth of basic coverage according to the OECD scoreboard.

following a GP referral (18-week target in England and Scotland and a 26-week target in Wales and Northern Ireland, the latter to be cut to 13 weeks in 2009). Patients waiting longer than the target were often referred for treatment to private hospitals or hospital abroad. Both inpatient and outpatient waiting time statistics are published across the four countries in the UK. To improve access to medicines, Northern Ireland will stop applying prescription fees in 2010, as is currently the case in Scotland and Wales. In addition, public comparisons of different Trusts in terms of several performance indicators are available to help patients exercise choice and to encourage providers to improve their activities.

Surveys show that patients are generally satisfied with the NHS, especially those who have received NHS care. Nevertheless, previous concerns, often expressed in the political and media arenas, that the NHS was underfunded resulting in longer waiting times, that choice was limited as was the access to certain drugs, and that the UK registered lower health outcomes than other EU countries, for example in terms of cancer survival rates, have led to important public investments in the sector (including in facilities and cost-coverage). This partly explains the increase in public and total expenditure observed in the last decade.

# 4. Collection, pooling and allocation of financial resources

In 2008, 82.6% of total health expenditure funding came from public sources, 11.1% from out-of-pocket payments, 4% from non-profit institutions serving households and 1.2% from private insurance.

The total budget of public funds to be allocated to the health sector is defined by the UK Parliament, the UK government and the Scottish, Welsh and Northern Ireland governments. Scotland, Wales and Northern Ireland receive a funding block from HM Treasury and are responsible for the resource allocation in their respective countries. The central government determines resource allocation across countries and regions based on demographic and mortality/morbidity data and historic costs. The funds to be allocated to each sector/ type of care are determined by the UK government and the Scottish, Welsh and Northern Ireland governments given their respective responsibilities. The UK Department of Health (DoH) defines general policy guidelines and priorities. The head of the DoH, the Secretary of State for health responds to the UK Prime Minister. The basic benefit package is not explicitly defined but there is a negative list of interventions (services and goods not provided under the NHS).

There is no information on public and total expenditure on health administration and health insurance as a percentage of GDP or as a percentage of current health expenditure notably because the UK does not use the System of Health Accounts to monitor health expenditure.

There are, however, concerns that such decentralised decision making process has lead to disparities in the availability and quality of service provision. For example, some PCTs provide drugs prior to or independently of the NICE[9] decision while others do not. There are also regional and country differences in the waiting times for elective surgery and in the supply of physicians.

There is a strict health budget defined annually by country and for different health services.[10] Overall health spending for England and the overall block grants to the Scotland, Wales and

[9] The National Institute for Health and Clinical Excellence is an independent body which provides guidance on health issues, including assessing the value for money of new drugs and treatments to determine whether the NHS should offer them.

[10] According to the OECD, the UK scores 6 out of 6 in the OECD scoreboard due to the very stringent budget controls.

Northern Ireland are fixed in advance in spending reviews, typically for three-year periods. The next spending review (which will cover the four financial years to 2014-15 is due on 20 October).

# 5. Providers status, referral systems and patient choice

As care provision is defined at country level there are some slight differences between England, Wales, Scotland and Northern Ireland in the way care is purchased and delivered.

In England, NHS Trusts (Primary Care Trusts, Acute Trusts, Foundation Trusts, Ambulance Trusts, Mental Health Trusts, and Care Trusts) are responsible for providing care to all residents. 152 Primary Care Trusts (PCTs) are the local organisations in charge of ensuring residents are provided primary care and much of secondary care. Indeed, PCTs control 80% of the NHS budget by commissioning primary care and much of secondary care for their local population through contracts with primary care staff and with other Trusts. Primary care is provided by independent general practitioners (GPs), dentists, or opticians working mostly in private group practices. NHS walk-in centres provide primary care during out-of-office hours as they have longer opening hours than most independent GPs, while the NHS direct phone line and web site provide information on health, allowing people to conduct an initial disease assessment and find information on health providers. 169 Acute Care Trusts (ACTs) in England and 130 Foundation trusts (a type of hospital with large autonomy and run by local managers, staff and the public) provide outpatient specialist care and day case and inpatient hospital care. ACTs oversee NHS hospitals and specialist care centres. Some of these are regional or national centres for more specialised care. About 96% of all acute care hospital beds are public and 4% are owned by not-for-profit private hospitals. Private provision mostly relates to common, non-elective surgical treatments as well as dental and optical care. Salaried public hospital physicians are allowed to conduct private practice on a part-time basis but only under certain circumstances so as to reduce possible perverse incentives to reduce public sector activity and increase demand for their private practice.

Scotland, Wales and Northern Ireland have slightly different models. In Scotland, 14 NHS Boards are responsible for the provision of health services by creating community health partnerships. Community health partnerships work with local authorities, clinical teams and the voluntary sector to support health improvement of local communities. In 2009, the Welsh Assembly launched a consultation to end the internal market in Wales and create a unified health system through the Public health Wales National Health Service Trust. This resulted in the redesign of healthcare delivery in Wales. The 22 Local health Boards who were responsible for commissioning health services for their residents were reduced to 7. The 13 NHS Trusts that provided hospital care were reduced to 3. In Northern Ireland, 4 Health and Social Services Boards are responsible for commissioning health services from a range of providers. 5 (formerly 19) Health and Social Services Trusts are the main service providers.

The number of practising physicians per 100 000 inhabitants (261 in 2008) is well below the EU average (324.1 in 2008) though showing a consistent increase since 1998 (190). The number of GPs per 100 000 inhabitants (79 in 2005) is slightly below the EU average (88.7 in 2005), but showing a consistent increase from 1998 (63). The number of nurses per 100 000 inhabitants (1005 in 2008) is well above the EU average (830 in 2007), though showing a reduction in recent years. Authorities have always recognised general shortages of physicians, which are more severe in some areas. Staff shortages may be reinforced by the fact that 36.8%% of all physicians are more than 45 years old and 11.9% are between 55-64 years and therefore will retire in 10 to 15 years, although this value is low compared to many other EU countries. Changes in remuneration and wage increases have been used to attract licensed but not-practicing physicians back into the sector. In addition, authorities have hired foreign staff. They have used national procurement to have more GPs in areas where shortages were perceived. These suggests the need to continue a comprehensive human resources

strategy to ensure that the skill mix goes in the direction of a primary care oriented provision, which authorities wish to pursue, that training, recruitment and attracting licensed staff back into the sector can compensate for staff shortages and losses due to retirement. Staff supply is regulated in terms of quotas for medical students but not by speciality or in terms of the location of physicians, which may explain some of the disparities in staff availability across geographic areas.

Authorities have always strongly encouraged the use of primary care vis-à-vis specialist and hospital care. Patients are financially encouraged to register with a GP and there is a compulsory referral system to specialist and hospital care i.e. GPs are gatekeepers to specialist and hospital care. While choice of GP has been limited in the past, authorities (old and new) have made patient choice over primary care providers a priority and as a result patient choice of GP has been increasing though limited to a geographic area. Choice of specialist and hospital is allowed, and there is a large amount of information explaining to patients how to exercise their choice.[11]

The number of acute care beds per 100 000 inhabitants (270.3 in 2008) is below the EU average of 383.2 in 2008 and has consistently decreased in recent times (306.7 in 2000). Authorities indicate that while there are no shortages of non-acute care beds, patients may at times create bed-blockages in acute care while awaiting appropriate follow-up care contributing to lengthen waiting times for elective surgery. It is for the central government to plan the opening of new public hospitals, but there appears to be no regulation in terms of the number of beds, the provision of specific specialised services or the supply of high cost equipment capacity. This has, however, not contributed to excessive capacity in terms of beds or high-cost equipment. Hospitals have autonomy to recruit medical and other health staff, while their pay scale is determined at national level.

# 6. Purchasing, contracting and remuneration systems

Primary care physicians, grouped in primary care practices, are mostly independent contractors. Primary care practices are paid for a mix of capitation, bonuses for the provision of enhanced services, services related to preventive care, chronic disease management and patient satisfaction. For the provision of preventative care and patient satisfaction primary care practices are paid bonuses through the Quality and Outcomes Framework. This is a voluntary scheme in the UK, but the vast majority of UK practices take it up. It ensures that practices are rewarded for providing systematic quality of care for patients, not just for the number of patients on their list. Spend in England is around £1.1b or 15% of payments for primary medical care services. For enhanced services, primary care practices receive bonuses for the provision of services that are above and beyond the normal services that they provide to patients on their list. Each country of the UK has this system. Total spend in England on enhanced services in 2009/10 is estimated at £786m or around 11 % of payments for primary medical care services.

Outpatient and inpatient specialists working in the public sector are paid a salary but are also eligible to receive bonuses related to preventive care and chronic disease activities and targets.

Hospital doctor salaries are determined at hospital level. Private sector doctors are paid on a fee-for-service basis. Hospital doctors can carry out private professional services or fee-paying services, in line with the provisions governing the relationship between NHS work, private practice and fee-paying services in their terms and conditions of service. This means doctors are required to inform their clinical managers of any regular commitments in respect of private professional services or fee-paying activity. Where there is a conflict in scheduling work, NHS commitments must take precedence over private work.

[11] Indeed, according to the OECD, the level of choice of provider in the UK has a score of 4 out of 6, while gatekeeping scores 5 out of 6.

An NHS GP is free to operate a private practice with private patients if they wish to do so. There are heavy restrictions on a GP's ability to charge fees to their NHS registered patients, but there are exceptions for procedures outside the General Medical Services Contracts Regulations such as signing passport applications and holiday insurance claims which GPs can issue a charge for.

When looking at hospital activity, inpatient discharges are below the EU average (12247.5 vs. 16230.5 in 2007) but are more than compensated by the very high number of day case discharges which is well above the EU average (13136.5 vs. 6120.1 in 2007). The proportion of surgical procedures conducted as day cases (51.7%) is considerably above the EU average (28.1% in 2007) and indeed one of the EU highest. Overall hospital average length of stay (8.1 days in 2007) is about the EU average (8.0 days in 2007). These figures suggest that hospital throughput/efficiency is overall very high. Further improvements may perhaps be possible through the planned increased provision of community services for long-term care patients which may release acute care beds in certain areas.

**Pharmaceuticals**

The authorities have implemented a number of policies to control expenditure on pharmaceuticals. There are no separate pricing and reimbursement decisions for reimbursed medicines. The Pharmaceutical Price Regulation Scheme controls the price of branded medicines and the profits pharmaceutical companies can make on selling drugs to the NHS. If companies make too high a profit on NHS reimbursed drugs, they must either reduce the price or repay the NHS. The Drug Tariff sets reimbursement prices for generics. The price of over-the counter medicines is not regulated. There are controlled price updates and authorities use price-freezes and cuts. There is a negative list of reimbursed products. Authorities promote rational prescribing by physicians through treatment and prescription guidelines (the British National Formulary and the BHF for Children and NICE guidance on clinical and cost-effectiveness effects of interventions) complemented with monitoring of prescribing behaviour and education and information campaigns on the prescription and use of medicines. These are coupled with pharmaceutical budgets. For example, PCTs commonly defined list of recommended drugs which are considered sufficient to meet the needs of patients as cost-effectively as possible and GPs may be asked to justify prescribing outside the recommendations. There are also prescribing advisers employed at various levels of the organisation to encourage rational and cost-effective prescribing and reviewing prescribing behaviour. Some PCTs also run prescribing incentives schemes with GPs so that they receive a (modest) bonus if they use cost-effective clinically appropriate prescribing. A large amount of prescribing data is available, practice by practice, to prescribers and advisers to encourage improvement. There are also information and education campaigns directed at patients and cost-sharing to encourage a rational use of medicines on the patients' side. In England, patients pay a flat rate prescription charge for each item dispensed via an NHS prescription, unless one qualifies for exemption. There is an explicit generics policy although generic substitution cannot take place i.e. pharmacies are obliged to dispense the product prescribed by the doctor. However, doctors are strongly encouraged to prescribe by their generic name for good professional practice (so pharmacists can provide the patient the cheapest product available) and for value for money reasons. For many years, the DoH published the share of generic prescribing as an indicator. The National Prescribing Centre provides a wide range of material and training to promote generic prescribing. Prescribing advisers also encourage generic prescription.

# 7. Information and monitoring, use of cost effectiveness and health promotion

The UK has an extensive information management and statistics systems and comprehensive data is gathered on physician and hospital activity and quality and on health status. Data is provided at

health authority level and by provider. There is extensive and public information comparing Trusts in terms of activity and quality (clinical outcomes, use of appropriate processes, patient satisfaction and experience). Physicians are monitored in terms of activity and compliance with clinical guidelines and given feedback on their prescription behaviour. Nevertheless, as the fiche shows there are some information gaps in some areas which may be important for decision making.

The National Institute for Health and Clinical Excellence (NICE) conducts and gathers information on health technology assessment and conducts economic evaluation and cost-effectiveness analysis which is used to define whether new interventions and medicines should be covered by the health system and to what extent (level of reimbursement) as well as to define clinical guidelines.

The central Government through the DoH sets and monitors public health priorities in terms of process, outcomes and the reduction of health inequalities. As section 1 suggests there are some risk factors that can translate into an important burden of disease and financial costs. Authorities have in recent years emphasised health promotion and disease prevention measures as a means to reduce the burden of disease (e.g. what is called in Scotland the killer diseases) and reduce health inequalities and therefore to ensure the long-term sustainability of the system. There is, however, no information on public and total expenditure on prevention and public health services as a % of GDP as a % of total current health expenditure. Vaccination rates are below the EU average (92% vs. 96% in 2007) and lower than in 2000 (95%), while screening rates for cervical and breast cancer are quite high (78.5% and 70.5% of the target population in 2007).

# 8. Challenges

The analysis above shows that a range of reforms have been implemented in recent years, for example, to ensure access to a wide range of care, to improve the quality of care, to increase patient choice, to reduce waiting times, to increase activity and efficiency, to control pharmaceutical expenditure. They were to a large extent successful and the UK should continue to pursue them. The main challenges for the UK health care systems are as follows:[12]

- To ensure the coherence of resource allocation to different types of care across geographic areas following devolution and decentralised commissioning of care to PCTs, to avoid possible variations in care availability and quality.
- To enhance primary care provision by increasing the numbers and spatial distribution of GPs and primary care nurses. Additional numbers of needed primary care staff can render the referral system to specialist care more effective and allow for larger patient choice.
- To consider the use across the UK and not just in England of an element of performance related payment physicians' remuneration (e.g. through the use of mixed payment schemes) to encourage health promotion, disease prevention and disease management activities or the treatment of vulnerable populations to reduce health inequalities and increase output in some areas.
- To reinforce the existing human resources strategy to tackle current shortages in staff, including in primary care staff, and ensure sufficient numbers of staff in the future in view of staff and population ageing.

[12] The OECD overall efficiency score for the UK is slightly below its group average (about 3.5 years potential gain to be made through greater efficiency in the sector compared to the group average of 2.6 years) and below the OECD average (2.3 years). These scores have to be taken with caution as recent reforms and funding may not have fully translated into health outcomes. Areas for improvement include: increasing user choice further and improving compensation systems to further improve quality of services; increase consistency in the allocation of responsibilities across level of government; and improving the availability of comparable data on the allocation of resources across types and sub-sectors of care.

- To increase the supply of follow-up care for long-term care patients so as to reduce the unnecessary use of acute care settings for long-term care patients.
- To improve information in a number of areas and further introducing ICT and e-health solutions to allow for nationwide electronic exchange of medical data (including patient electronic medical records) to support choice, care coordination, reduce medical errors and increase cost-efficiency.
- To further enhance health promotion and disease prevention activities i.e. promoting healthy life styles and disease screening given the recent pattern of risk factors (diet, smoking, alcohol, obesity) in various settings (at work, in school). To ensure equal access to health promotion and disease prevention activities to help reducing health inequalities between UK countries and regions.
- Following a period of rapid funding growth, seek ways to increase efficiency in the sector in order to release needed funding in other sectors and ensure consistency with a challenging overall budgetary framework.

# Statistical Annex – United Kingdom[13]

| Expenditure on health | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health as % of GDP | 6.7 | 6.9 | 7.0 | 7.3 | 7.6 | 7.8 | 8.0 | 8.3 | 8.5 | 8.4 | 8.7 | 9.3 | 9.6 |
| Total expenditure on health per capita PPS | 1335 | 1453 | 1597 | 1721 | 1874 | 1965 | 2146 | 2263 | 2414 | 2485 | 2559 | 2295 | 2381 |
| Public expenditure on health as % of GDP | 5.4 | 5.6 | 5.6 | 5.8 | 6.1 | 6.2 | 6.5 | 6.8 | 6.9 | 6.9 | 7.2 | 7.2 | 7.4 |
| Public expenditure on health per capita PPS | 1072 | 1171 | 1266 | 1376 | 1497 | 1574 | 1747 | 1852 | 1976 | 2038 | 2115 | 1758 | 1826 |
| *Sources: OECD, WHO and EUROSTAT* | | | | | | | | | | | | | |

| | 2010 | 2020 | 2030 | 2040 | 2050 | 2060 |
|---|---|---|---|---|---|---|
| Projected public expenditure on healthcare* as % of GDP | 7.6 | 8.0 | 8.4 | 8.9 | 9.2 | 9.4 |
| *Sources: 2009 EC-EPC Ageing Report* | | | | | | |

| Expenditure drivers (income, technology, life style) | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP per capita PPS | 20000 | 21000 | 22700 | 23700 | 24700 | 25200 | 26800 | 27400 | 28400 | 29100 | 29100 | 24913 | 25075 |
| MRI units per 100 000 inhabitants | : | : | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 | 0.5 | 0.6 | : | 0.6 | 1.0 | 0.7 |
| Angiography units per 100 000 inhabitants | : | : | : | : | : | : | : | : | 0.1 | 0.1 | : | 0.7 | 0.6 |
| CTS per 100 000 inhabitants | : | : | 0.5 | 0.6 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 | : | 0.7 | 1.9 | 1.1 |
| PET scanners per 100 000 inhabitants | : | : | : | : | : | : | 0.1 | 0.1 | : | : | : | 0.1 | 0.1 |
| Total pharmaceutical expenditure as % of GDP | : | : | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 | 1.0 | 1.0 | 1.0 | 1.5 | 1.5 |
| Public pharmaceutical expenditure as % of GDP | : | : | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 |
| Proportion of the population that is obese | 19.0 | 20.0 | 21.0 | 22.0 | 23.0 | 23.0 | 23.0 | 23.0 | 24.0 | 24.0 | 24.5 | 16.2 | 15.2 |
| Proportion of the population that is a regular smoker | 27.0 | : | 27.0 | 27.0 | 26.0 | 26.0 | 25.0 | 24.0 | 22.0 | 21.0 | 22.0 | 22.7 | 24.1 |
| Alcohol consumption litres per capita | 9.8 | 10.3 | 10.4 | 10.7 | 11.0 | 11.2 | 11.5 | 11.4 | 11.0 | 11.2 | 10.8 | 11.0 | 10.6 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health status | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Life expectancy at birth females | 79.8 | 79.9 | 80.3 | 80.5 | 80.6 | 80.5 | 81.0 | 81.2 | 81.7 | 81.9 | : | 82.3 | 82.3 |
| Healthy life years at birth females | 62.2 | 61.3 | 61.2 | 60.8 | 60.9 | 60.9 | : | 65.0 | 65.1 | 66.1 | : | 62.3 | 61.6 |
| Life expectancy at birth males | 74.8 | 75.0 | 75.5 | 75.8 | 76.0 | 76.2 | 76.8 | 77.1 | 77.3 | 77.7 | : | 76.3 | 75.9 |
| Healthy life years at birth males | 60.8 | 61.2 | 61.3 | 61.1 | 61.4 | 61.5 | : | 63.2 | 65.0 | 64.9 | : | 61.5 | : |
| Infant mortality | 5.7 | 5.8 | 5.6 | 5.5 | 5.2 | 5.3 | 5.0 | 5.1 | 4.9 | 4.8 | 4.7 | 4.6 | 4.3 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Coverage and financing mechanisms | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of the population covered by public or primary private health insurance | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.5 | 99.5 |
| Public expenditure on health as % total expenditure on health | 80.3 | 80.6 | 79.3 | 79.9 | 79.9 | 80.1 | 81.4 | 81.9 | 81.9 | 82.0 | 82.6 | 77.3 | 77.3 |
| Out-of-pocket expenditure on health as % of total expenditure on health | 14.1 | 13.6 | 13.4 | 13.4 | 13.2 | 12.8 | 12.3 | 11.8 | 11.4 | 11.7 | 11.1 | 14.4 | 14.4 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Collection and Pooling of funds | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on health administration and health insurance as % GDP | : | 0.2 | : | : | : | : | : | : | : | : | : | 0.4 | 0.4 |
| Total expenditure on health administration and health insurance as % current health expenditure | : | 3.6 | : | : | : | : | : | : | : | : | : | 4.6 | 4.4 |
| Public expenditure on health administration and health insurance as % GDP | : | 0.1 | : | : | : | : | : | : | : | : | : | 0.3 | 0.3 |
| Public expenditure on health administration and health insurance as % current health expenditure | : | 1.9 | : | : | : | : | : | : | : | : | : | 3.3 | 3.1 |
| *Sources: EUROSTAT and OECD* | | | | | | | | | | | | | |

| Providers | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of physicians with 45 years and more | : | : | 33.7 | 34.0 | 34.0 | 34.4 | 34.7 | 34.8 | 34.8 | 35.1 | 36.8 | 60.8 | 63.5 |
| Practising physicians per 100 000 inhabitants | 190.0 | 191.0 | 196.0 | 201.0 | 208.0 | 218.0 | 231.0 | 239.0 | 245.0 | 252.0 | 261.0 | 324.1 | 321.5 |
| Practising nurses per 100 000 inhabitants | : | : | 916.0 | 945.0 | 975.0 | 1021.0 | 1036.0 | 1043.0 | 1006.0 | 1000.0 | 1005.0 | 830.0 | 879.2 |
| General practitioners per 100 000 inhabitants | 63.0 | 63.0 | 71.1 | 71.8 | 72.5 | 74.8 | 76.9 | 79.0 | : | : | : | 94.3 | 94.1 |
| Acute hospital beds per 100 000 inhabitants | : | : | 306.7 | 307.0 | 305.0 | 304.6 | 300.6 | 297.6 | 284.6 | 273.1 | 270.3 | 388.6 | 383.2 |
| *Sources: EUROSTAT and WHO* | | | | | | | | | | | | | |

| Outputs | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Doctors consultations per capita | 5.4 | : | 5.3 | 5.1 | 5.7 | 5.2 | 5.3 | 5.0 | 5.1 | 5.0 | 5.9 | 6.8 | 7.1 |
| Hospital inpatient discharges per 100 000 inhabitants | : | : | : | : | 12698 | 13064 | : | 12931 | 12173 | 12248 | : | 16231 | 18081 |
| Day cases discharges per 100 000 inhabitants | : | : | 9307 | 9456 | 9808 | 10227 | : | : | 12267 | 13136 | : | 6120 | 5031 |
| Hospital average length of stay | : | : | 10.8 | 10.6 | 10.0 | 9.3 | : | 8.7 | 8.8 | 8.1 | : | 8.0 | 7.9 |
| Day cases as % of all surgical procedures | : | : | 42.4 | 42.7 | 43.6 | 43.9 | : | : | 50.2 | 51.7 | : | 28.1 | 20.8 |
| Total pharmaceutical expenditure per capita PPS | : | : | : | : | : | 265.1 | 283.8 | 289.7 | 297.2 | 308.5 | 305.2 | 409.8 | 419.1 |
| Public pharmaceutical expenditure per capita PPS | : | : | : | : | : | 217.6 | 235.8 | 240.9 | 250.3 | 257.1 | 258.9 | 280.9 | 284.2 |
| Total pharmaceutical expenditure as % of total current health expenditure | : | : | 14.8 | 14.4 | 14.2 | 14.1 | 13.8 | 13.4 | 12.9 | 12.8 | 12.4 | 17.1 | 16.9 |
| Public pharmaceutical expenditure as % of total current health expenditure | : | : | 11.6 | 11.6 | 11.7 | 11.6 | 11.4 | 11.1 | 10.9 | 10.7 | 10.5 | 11.5 | 11.2 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

| Health promotion and disease prevention | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | EU - 2007 | EU - 2008 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total expenditure on prevention and public health services as %GDP | : | 0.1 | : | : | : | : | : | : | : | : | : | 0.3 | 0.3 |
| Public expenditure on prevention and public health services as % of GDP | : | 0.1 | : | : | : | : | : | : | : | : | : | 0.2 | 0.2 |
| Total expenditure on prevention and public health services as % total current expenditure on health | : | 1.9 | : | : | : | : | : | : | : | : | : | 2.7 | 2.7 |
| Public expenditure on prevention and public health services as % of total current expenditure on health | : | 1.9 | : | : | : | : | : | : | : | : | : | 2.2 | 2.1 |
| Proportion of infants vaccinated against polio | 95.0 | 95.0 | 95.0 | 94.0 | 91.0 | 91.0 | 91.0 | 91.0 | 92.1 | 91.9 | 92.1 | 95.6 | 95.8 |
| Proportion of women 20-69 screened for cervical cancer | : | : | 83.4 | 83.0 | 82.0 | 81.2 | 80.6 | 80.1 | 79.4 | 78.5 | : | 59.2 | 49.3 |
| Proportion of women 50-69 screened for breast cancer | : | 68.0 | 69.8 | 71.0 | 70.0 | 74.7 | 74.4 | 70.1 | 70.7 | 70.5 | : | 56.9 | 52.7 |
| *Sources: EUROSTAT, OECD and WHO* | | | | | | | | | | | | | |

* Projected public expenditure on health care excludes expenditure on long-term nursing care and expenditure on services not allocated by function.

[13] The EU averages are weighted averages using GDP, population, expenditure or current expenditure on health in millions of units and units of staff where relevant. The EU average for each year is based on all the available information in each year. For some indicators this could create some discrepancies when very few data are available, especially for 2008.