Peer Review Health System Performance Assessment (Brussels, 19-20 May 2014)

Health System Performance Assessment (HSPA) in Belgium[1]

Pascal Meeus
National Institute for Health
and Disability Insurance

The Belgian Health System Performance Report is a national monitoring report in which Belgium is also compared internationally. The report attempts to monitor the accessibility, quality, efficiency, sustainability and inequalities of the Belgian health system to provide information to health policy makers.

Background and objectives

Objective of this paper

This paper aims to contribute to the reflexion process on HSPA (Health System Performance Assessment) on national and EU level, to focus on some issues from the Belgian experience and to share them with other Member States during the Peer Review meeting in Brussels in May 2014.

In particular, we will try to analyse how (/if) the Belgium HSPA report should be adapted to comply with new EU developments, and raise some general questions for discussion.

Recent development concerning HSPA at EU level

Several reports have been issued, assessing European health systems. Examples are the joint EPC-European Commission (hereafter Commission) report on health systems, published in 2010, and the 'Health at a glance Europe' series, published by OECD and the Commission.

Answering to the invitation from the Council of Health Ministers to the Member States to use HSPA for policy-making, accountability and transparency, the Commission was asked to support Member States in using HSPA. The EU published a communication on health systems on 4th April 2014 where it proposed "to provide Member States with tools and methodologies, including:

- capitalising on EU-funded research on performance assessment measures and indicators;
- defining criteria and procedures for selecting priority areas for HSPA at national and EU level;
- developing a tailored reporting system; and
- intensifying cooperation with international organisations, in particular the OECD and the World Health Organisation.

This collaborative work may also allow more targeted work at EU level to reduce inequalities"[2].

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Belgium proposed to organise a Peer Review between Member States in May 2014 to contribute to the reflexion process on HSPA at national level. From the shared experience from Member States this Peer Review could help to develop some guidelines and develop a network of interested countries for further exchanges.

Background of HSPA in Belgium

An important milestone was the adoption of the Tallinn Charter (WHO) in 2008. The Charter states that health is an investment to economic development and countries committed to perform health system performance assessment. On 18 March 2008, following a recommendation of the Tallinn Charter (WHO) a commitment was formulated in the Belgian governmental agreement on public health: "The performances of our health system (including quality), are to be assessed on the basis of measurable objectives."

Belgian health authorities asked their health administration - scientifically supported by the Health Care Knowledge Centre (KCE), the Institute of Public Health (IPH) and the National Institute for Health and Disability Insurance (NIHDI) – to test the feasibility of a Health System Performance Assessment report (HSPA) in Belgium.

Two full reports have already been published (2009, 2012) while an intermediate report was published to monitor the evolution (2014). A thematic report on general practice was furthermore published in 2010.

In the future, Belgium will publish HSPA every four years with intermediate reports every two years. The next report is expected to be published in December 2015.

Critical issues raised by Belgium HSPA

Main methodological steps to build a HSPA report to improve health systems

These steps are in our view an excellent basis to raise different issues and bottlenecks about HSPA development in Belgium and to determine what kind of exchange is needed at international level.

These steps are:

1. Purpose of HSPA report;
2. Conceptual model to define the scope;
3. Define dimensions and sub dimensions;
4. Set of indicators and data sources, including gaps in data collection;
5. Interpret the results including an international benchmarking when appropriate and presenting results;
6. Monitoring issues and policy adaptations.

Purpose of HSPA report

The HSPA report is a first step to improve the health system. In the literature, such a kind of report may have several other purposes (KCE 2009) e.g. help patients and purchasers choose among services, provide epidemiologic and public health data (e.g. unmet health needs), increase public accountability, assist management control of processes and activities (e.g. progress on health goals), identify areas and mobilise resources for quality improvement, inform accreditation processes, etc.

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[2] COM (2014) 215 final of 4 April 2014.

The HSPA report Belgium explicitly aims and pursues two strategic objectives:

1. To provide a transparent and accountable view of the Belgian health system performance, in accordance with the commitment made in the Tallinn Charter;

2. To inform health authorities of the performance of the health system and to support policy planning; and in the long-term, to monitor the health system performance over time.

An implicit and concrete reason to draft an HSPA report was to answer the question posed by the National Insurance Institute, namely "Can we objectively say that expenses in the Belgian health system are correctly spent (value for money)?" Another issue was to collect and compare data on quality of care, inequities and unmet needs.

Supporting policy making was not an objective at the outset, but following the publication of several reports, it is progressively becoming an issue. It is also interesting to note that the accreditation process or public information among services were not an option until now.

Another interesting point in Belgium is the development of performance measurement based on a more thematic issue (e.g. general medicine). This kind of development, designed in cooperation with field experts, was used to define and share priorities between the field and the authorities, to compare organisations (benchmarking), to improve quality of care and encourage continuous professional development, innovation and to reflect on incentives.

Internationally, several organisations regularly benchmark Belgium against other European countries on health status and healthcare indicators ("World Health Report 2000" WHO, the biannual report "Health at a glance Europe" resulting from a collaboration of OECD and the European Union, the website of the ECHI indicators (EU) and the Euro Health Consumer Index from the private Swedish organisation Health Consumer Powerhouse).

The HSPA report can be seen as an answer to those reports, as it helps Belgium to fill gaps and shorten the delays related to data collection based on international requirements (WHO, OECD). In the meantime, Belgium is also interested in building an international network to share best-practices with countries with a comparable health system design.

Window-dressing or health system improvement?

Do those objectives go along with international requirements? In so far measurement is an objective in itself: yes. But it depends on what you do with the report (which will be analysed in the next chapters through the conceptual model, the dimension described, and the usefulness of the report).

One paradox remains and is stressed by HSPA in Belgium: the governance body is currently owned by health authorities and the Ministry of Health. What is the most important function for HSPA in Belgium? Transparency/accountability or policy planning/monitoring? If the answer is transparency/accountability, the governing body should ensure independence from health authorities and policymakers through independent scientific bodies. If the answer is "a governance tool", policy makers should quickly move forward, showing improvement in several domains pointed by the report.

**Conceptual framework to evaluate the performance**

A first important step is to develop a robust conceptual framework within which performance indicators can be analysed. Ideally, this framework includes both a list

of performance dimensions on the one hand and domains of the health system across which to select performance indicators on the other hand.

At EU level, a first model was described in 2013: "the Social Protection Committee developed a joint assessment framework on health, intended to act as a first-step screening device to detect possible issues in Member States' health systems".

Figure 1: Proposed model of the JAF framework in the area of health (SPC-ISG November 2013)
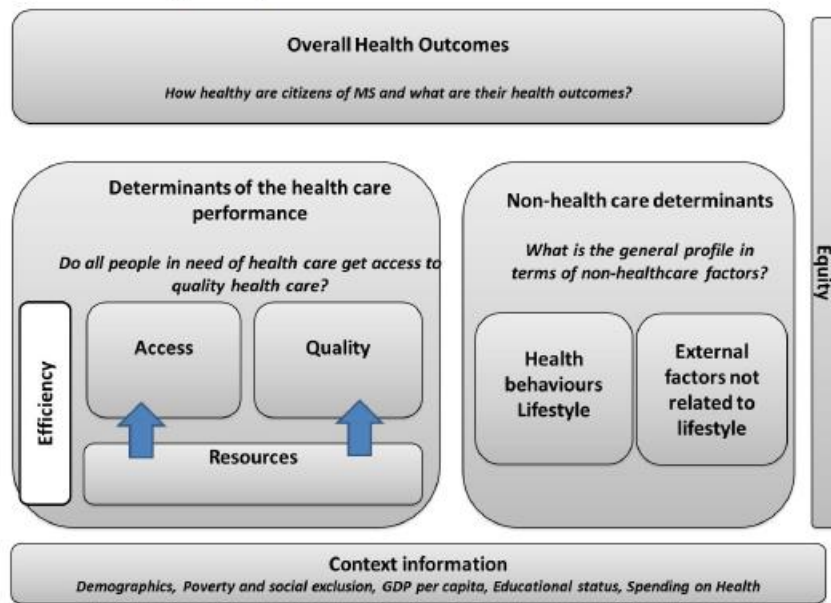
Source: Commission services (2013)

Belgium has a similar holistic approach to the assessment of the health system performance. Like the SPC approach, we distinguish three similar interconnected tiers: health status, non-medical determinants of health and the health care system (see Figure 2).

Figure 2 – Conceptual framework to evaluate the performance of the Belgian health system
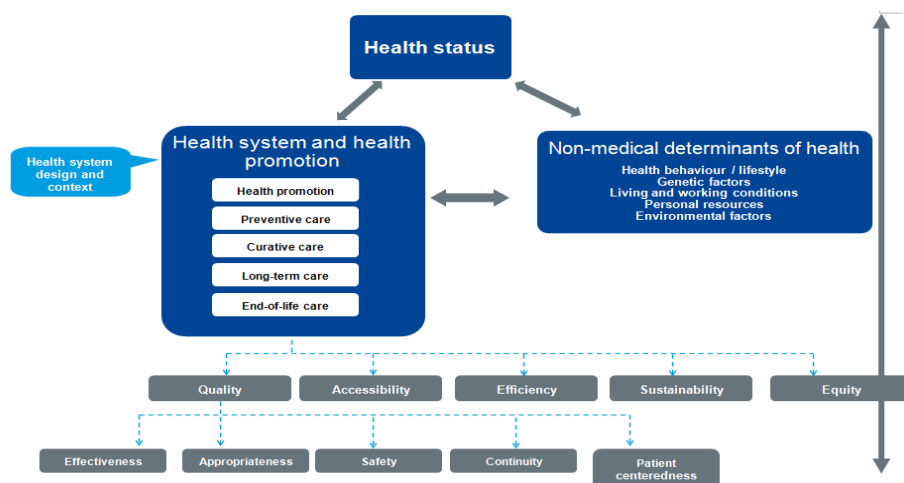
From HSPA to HPA?

A first point of discussion in Belgium was whether to include "health status", to measure outcomes rather than outputs. But the relation between health status as an outcome and the health system is not obvious and still requires some evidence.

Another point of discussion was whether "non-medical determinants of health" should be included. Belgium's choice was not to include them since the scope is rather "health systems". However, the boundary is very thin. Health promotion belongs definitively to health systems and interacts with health behaviour and life style. The discussion remains open, depending on the "health in all policy", which implies looking outside the health sector for cost-effective policies that can generate better health and reduce the demand for health services.

Balance within the health system between acute and chronic/mental care, between primary and resident care, between health care and social affairs.

Belgium went a step further than the SPC, having a specific approach encompassing the different aspects of our health system (and not only acute care), namely: health promotion, preventive care, curative care, long-term care and end-of-life care.

Of course, this approach can be different from country to country depending on the health system design (degree of specialisation of health services), country organisation (centralisation/regional), and governance (Ministry of Health including – or not – social affairs).

Nevertheless, the design of the framework should in no way be driven by existing data (international data are mainly based on hospital acute care) and a broader approach – including social affairs and insurance data like in Belgium – can help to better understand inequalities issues.

Definition of dimensions and sub dimensions to be studied: a necessary balanced view between resilience / efficiency and quality / access / inequalities

The JAF analyses the health care system through four dimensions: access, quality, efficiency and equity, according to the values shared in the EU: "despite organisational and financial differences, [health systems] are built on common values, as recognised by the Council of Health Ministers in 2006: universality, access to good quality care, equity and solidarity". The newest Commission paper of April 2014 (cf. supra) adds two other dimensions: the need for effectiveness and resilience.

The Belgian performance report covers all those aspects in choosing access, quality, inequalities, efficiency and sustainability. At first sight there are no differences between the different dimensions to be studied.

However, sub dimensions between EU and Belgium can be different, more or less detailed.

Efficiency of the healthcare system (see figure 2 & table 8)

is defined as "the degree to which the right level of resources (i.e. money, time and personnel, called input) is adequate for the system (macro-level) and is ensuring that these resources are used to yield maximum benefits or results (called output)".

We could not find any systematic approach to efficiency in Belgium's model or EC analysis. But we noticed that the SPC approach argues for a transversal approach for efficiency. As quoted in the report on health systems: "how much is spent" and

"how money is spent" are both important in determining health status." This should be further explored.

Sustainability/Resilience (see figure 2 & table 9)

is defined as the system's capacity (1) to provide and maintain infrastructure such as workforce (e.g. through education and training, facilities and equipment); (2) to be innovative; (3) to stay durably financed by collective receipts; (4) to be responsive to emerging needs.

The Commission paper's description of sustainability is much more detailed, adding governance aspect, adequate costing and information flows (see figure 3).

Figure 3 – Resilience / sustainability: EU framework

Accessibility (see figure 2 & table 2)

Accessibility of a health system is a prerequisite for a high-quality and efficient health system. It is defined as the ease with which health services are reached in terms of physical access (geographical distribution), cost, time, and availability of qualified personnel.

Until now, Belgium grouped accessibility into different themes: available healthcare workforce, financial accessibility, coverage of preventive measures, and accessibility of residential care for older persons, availability of informal carers for older persons and timeliness of palliative care at the end of the life.

The option taken by the Commission's paper is similar, but goes more into detail than Belgium, analysing also the basket of care and the depth of coverage (see figure 4).

Figure 4 – Accessibility: EU framework

Quality of care (see figure 2 & table 3 to 7)

is defined as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge".

Commission's paper distinguishes mainly quality and safety issues. In Belgium, this chapter is much more developed and divided into 5 sub-dimensions: effectiveness, appropriateness, safety, continuity of care and patient- centeredness described in the KCE Report 128.

Effectiveness (see table 3)
is defined as "the degree of achieving desirable outcomes, given the correct provision of evidence-based healthcare services to all who could benefit but not those who would not benefit". All indicators are thus outcome (results) indicators.

Appropriateness (see table 4)
is defined as "the degree to which provided healthcare is relevant to the clinical needs, given the current best evidence". The link between effectiveness and appropriateness reflects the link between outcomes and processes.

Continuity of Care (see table 6)
is a concept that encompasses different dimensions, such as the continuity in information between providers, the planning of contacts with different health providers, the relational aspect of the patient-GP contacts or the coordination between providers or organisations.

Patient-Centeredness (see table 7)
is defined as "providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions".

Safety (see table 5)
is defined as "the degree to which the system does not harm the patient".

Equity/ inequalities

The dimension of equity has been approached in two complementary ways in Belgium (KCE Report 196).

Firstly, inequalities in health, health determinants and healthcare utilisation have been analysed by socio-economic position when possible.

Secondly, equity was highlighted at a global level. However this dimension certainly needs further research.

Health Promotion (see figure 2 & table 10)

Health promotion was described separately (like health status) in the KCE Report 196. It was recognised as part of the health system and mostly approached by conventional health and lifestyle indicators, complemented with some indicators related to health policies, healthy settings, and individual skills. Depending on health in all policies, this chapter certainly needs to be more developed.

Health status (see figure 2 & table 1)

Health status is obviously influenced by other factors than the health system. Four global health status indicators were selected; they can be seen as general and ultimate outcomes of the health system/health promotion interventions, besides all other determinants of health. More research is needed to better link health system outcome with health status.

Conclusions

We feel that good definitions and a good method to analyse "efficiency" and "equity" are still lacking at Belgian and international level. The interconnection between effectiveness, appropriateness and efficiency should also be clarified. Health promotion and non-health determinants must also be further explored in order to be linked to HSPA.

From the international experiences, we could improve Belgium's HSPA in several aspects:

▪ Health insurance coverage is not enough to analyse financial accessibility. Some aspects of the depth of coverage should be included, and it is essential to analyse the issues of both equity and inequalities.
▪ Efficiency needs to be analysed in depth especially if the economic situation is problematic.
▪ From the resilience point of view, "good governance" and "adequate costing" are also issues that should be reinforced in Belgium's HSPA.
▪ The depth of quality analysis is also a point of discussion since some aspects are sometimes too detailed.

Choose for a set of indicators

The next step is to select the individual performance indicators for each dimension. This step involves a choice between structure, process and outcome indicators, and an appraisal of the characteristics of the potential performance indicators.

We will not come back to common characteristics that indicators should meet (validity, reliability, relevance, sensibility, sensitivity, interpretability, feasibility) nor on the importance of keeping a limited set of indicators to keep it manageable for decision makers.

We will not address indicator selection either since its methodology is obvious (literature research, external independent experts, international set of indicators for benchmarking, Delphi…) (see figure 5).

Figure 5 – indicator selection (Belgium)

The main points of discussion on choosing indicators are from our point of view:

1. international comparison versus tailored indicators to the national health system;
2. indicators with as much multiple breakdowns as possible;
3. the use of administrative data including insurance data;
4. what if no data available;
5. composite indicators to minimise the set of indicators;
6. and the issue of global evaluation versus "actionability".

International comparison versus tailored indicators to the national health system

The Commission has supported the development of European health core indicators (ECHI), a set of indicators to monitor the health of the population and the performance of health systems. OECD is also developing health system and quality indicators. Those activities are an important basis to choose indicators to measure health system performance, since benchmarking and differences can help to point out some specific problems in a country. However, methodological issues are important (comparability, not the best indicators chosen, not actionable …).

Moreover, specificities of health systems are not covered by international comparison.

For all these reasons, Belgium believes that its national set must both have national and international indicators.

Indicators with as much multiple breakdowns as possible (+ spread value) based on already available information (administrative data)

In Belgium maximum use has been made of routinely available data (e.g. in administrative databases or in national registries): the Health Interview Survey (HIS), the hospital administrative discharge data (RHM - MZG), databases from the health care insurance RIZIV – INAMI, registry of hospital-acquired infections, vaccination surveys, Belgian Cancer Registry. The use of routinely available data entails no additional cost for data collection and solves many problems like comparability, completeness, reliability and trends.

One of the issues in Belgium to minimise the data set was to provide indicators from a national database based on health consumption (permanent sample survey).

With this kind of national database multiple breakdowns are possible to understand inequalities or find issues for quality improvement.

Figure 6 – Permanent health sample database (Belgium)
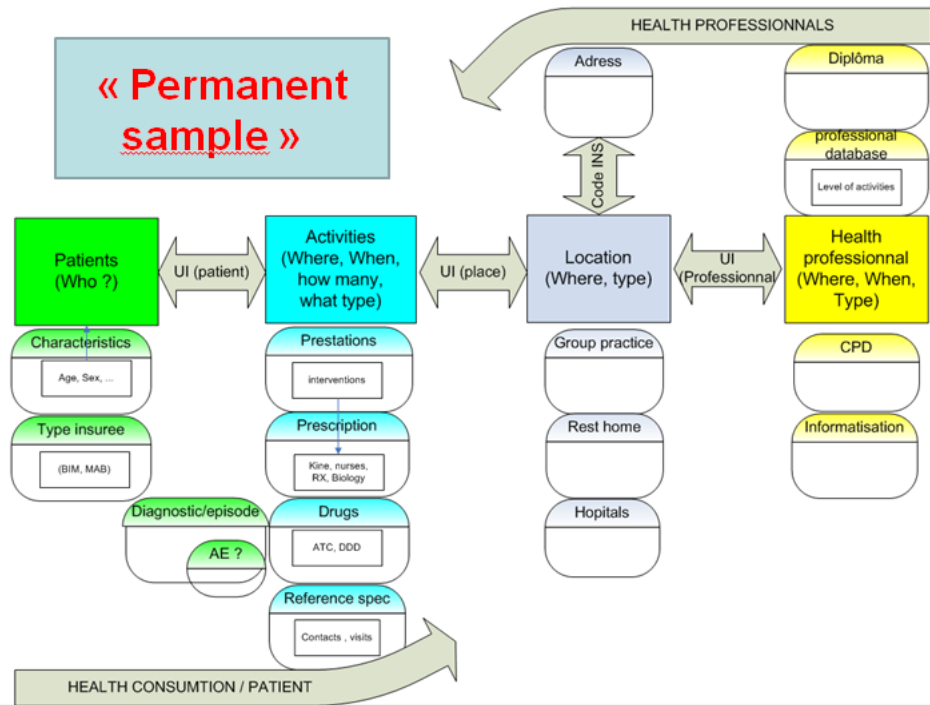
The use of administrative data including insurance data

However, utilisation data poorly reflect outcomes or quality: in some cases, indicators relevant to patients/consumers (e.g. quality of life) do not exist in administrative data and should be collected by other means (health interview survey …).

What if no data is available?

The choice of indicators should be independent of data availability. It's an important signal to improve data collection.

Are composite indicators suitable to minimise the set of indicators?

To reduce the size of the set of indicators, composite indicators can be an issue. It is also interesting to assess progress over time on complex issues and to summarise messages for communication.

However, composite indicators should be used carefully, because they can be difficult to understand and increase the difficulty of identifying proper remedial action ("actionability"). According to us, a condition for such an indicator is the availability of separate indicators related to the theme explored.

Indicators for global evaluation are not always "actionable"

The last thing to consider is the need for action. For this reason indicators should ideally be related to concrete themes. This does not mean however that indicators should immediately refer to concrete actions: HSPA reports should remain a global and helicopter view evaluation rather than be used to monitor programmes. This kind of paradox is important to understand (see later, monitoring).

Another question raised is, if HSPA should only be addressed to policy makers or also to the field and to professionals. The answer is obviously to policy-makers even if every health actor is part of the improvement. HSPA should be an excellent tool to align priorities and make commitments to solve problems. However, specific dimensions can be more dedicated to specific actors (e.g. effectiveness, appropriateness are dedicated to health workers, while financial access is specific to policy-makers).

Presenting and interpreting the results including an international benchmarking

The way data are published and comparisons are made is critical: it must be attractive, understandable, and adjusted to the different types of audience who will make use of the information found in the joint report.

The presentation should provide warning signals to facilitate the prioritising of needed actions and/or further studies. Hereby some key points (see also appendix):

Standardisation of the communication of results

In Belgium, synoptic tables with colour codes have been developed to allow a quick and easy overview of the results and their interpretation; it also allows the comparison of indicators. It is also important to standardise the presentation, using the same structure: evolution over time, evolution over time by region, subgroup analyses by socio-economic characteristics and international benchmarking.

Simplification of the structure of the set of indicators for an easier understanding

To clarify the set of indicators, in Belgium, only measured indicators are retained in the current set. Indicators for which we could not find data are discussed in a specific section of the report, referred to as "data available soon" or "indicators under development".

A comprehensive set of indicators for a comprehensive view on the system

The indicators provide indeed warning signals for improvement. However we should interpret (sub) dimensions globally instead of focusing on specific indicators: one should remember that the set is limited. Ideally, indicators should help to understand each (sub)dimension as well as the balanced approach between the different dimensions (e.g. sustainability versus quality or safety).

Grouped indicators could help for a comprehensive view but are not enough. Further research is needed to understand the interaction between indicators and the interaction between dimensions.

Methodological issues for policy-making and monitoring

As quoted in the KCE Report 196, "The ultimate goal of the health system is to be a high-performing system that contributes to improve the health of citizens living in Belgium. This means that the information presented in this report should serve to improve the health system's performance when necessary. It should also help the policy makers to formulate new health-related objectives. The formulation of health(-related) objectives is a key-step in the process of assessing performance, since it would allow, in the next reports, to compare stated objectives to actual measures.

In some cases, policy makers may already be aware of the problems, and have already commissioned additional analyses to know which actions to take. In other

cases, these signals are new to policy makers, and will thus require further in depth analysis".

Several issues could be identified from HSPA reports in Belgium, i.e.: (1) making decisions on outdated data, (2) performance against which target? International benchmarking does not solve the problem, (3) be concrete in addressing recommendations.

Making decisions on outdated data?

Some data are clearly outdated. This is inherent to the use of administrative data or registries. For international comparison, we sometimes had to rely on data from many years ago. In several cases, it can be difficult for policy makers to base decisions on such outdated information. Monitoring outdated data is another issue which implicates that a short periodicity between two reports may not be useful.

Performance against which target? Benchmarking with other countries doesn't solve the problem

In Belgium very few specific and measurable objectives have been defined (until now). When such targets exist, the value of the indicator was assessed by comparing it to the value of the objective. Otherwise, the judgment was based on external (e.g. WHO-defined) targets, or by comparing with the results of other countries. Whenever it was possible, the indicators have been compared with the average of the EU-15 countries. This allows us to position Belgium compared to its neighbours, but the 2012 Belgium report noticed that it does not solve the question of "are our results good or bad?" Indeed, some results can be good when compared to other countries, whilst they are not when confronted with the country objective. Moreover, interpreting the results of international comparisons of performance is still under debate, and there are many pitfalls, such as methodological and contextual variations, making meaningful comparisons difficult.

Address concrete recommendations

Besides adequate reporting in order to improve the usefulness of the report, concrete recommendations are needed. For example, Belgium's reports made concrete recommendations to policy-makers and point out priorities, also for data collection (see e.g. appendix).

Recommendations follow-up

How did we use the report for policy improvement in Belgium? It's certainly too early to show some results. Concretely, health ministers demanded special attention for priorities shown by the report and requested for a special monitoring of these. These priorities are linked to health promotion (obesity, tobacco, alcohol), screening strategy (breast, colorectal), mental health (suicides, antidepressive medication), chronic care (quality of the follow up), safety (medical irradiation, antibiotics), GP's reinforcement policy (new enrollees, burnt out, ward, patient registration) and accessibility (investigate the delay for financial reasons). An intermediate report was published early 2014 focusing on inequalities, quality of care in rest home and mental care. Those evolutions are included in the table 1-10.

General Conclusion

Belgium is not the first country having exercised this challenge of HSPA reporting. With the signing of the 2008 Tallinn charter on health systems, the Member States formally committed themselves to the monitoring and evaluation of health systems performance. The usefulness of these reports still needs to be proven. However, we are convinced that HSPA is an important tool for health policy-makers.

Until now, in Belgium, it is used for accountability, but it should contribute to a rapid improvement of the health system. From this quick overview, some key points to bear in mind are:

1. HSPA should provide a global balanced overview which enables aligning views between
   - health, social affairs and economic affairs;
   - the field and decision makers.

2. Essential is, that values – like quality access equity, on the one hand, and sustainability and efficiency, on the other hand – are shared between stakeholders.

3. It's also essential to analyse the health system as a whole encompassing
   - acute, and also chronic and mental care;
   - hospital (residential) care and also primary care;
   - health system and also health promotion and health in all policies.

4. The set of indicators should remain comprehensive and elaborated enough to assess the system as a whole.

5. The report must lead to concrete recommendations which should be translated into action(s).

6. Many aspects still need further development, like
   - dimension analysis (outcome of the health system , efficiency, inequalities, …);
   - ways to improve data collection (upi, electronic data , linking data);
   - elaborate good indicators for primary care, mental care, chronic care , end of life;
   - improve international benchmarking;
   - improve data reporting;
   - ways to improve health systems (prioritise, targets, incentives).

For all those reason we would like to support the development of a European network on HSPA.

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Appendix

Results (Belgium 2009, 2012, 2014)

Table 1 – Indicators assessing the global health status (see comments hereafter)

Indicator	Global	Belgium	year	Trend over time	eu15	M	F	65+ home	65+ MRS	Socio Low	Socio high	Flanders	Wallonia	Brussels
Life expectancy (years) (2008)		79,6	2008											
Life expectancy (years) (2010)		80.0	2010			77.4	82.6							
Life expectancy (years) (2011)		80.5	2011									80.9	78.5	80.0
Life expectancy (years) (2012)	😐	80,3	2012	increase	81,2							81,1	78,8	80,0
Health expectancy healthy live years (at 25 years) 2008		41.0	2008			41.3	41.2							
Health expectancy healthy live years (at 25 years) (M)			2008							27.7	46.3	43.7	37.4	38.5
Health expectancy healthy live years (at 25 years) (F)	🔴		2008							28.9	47.1	42.3	39.1	40.6
Health expectancy healthy live years (at 65 years) (2011)	😐		2011			9.7	10.2							
Self-perceived health(% in good or very good health) (2008)		73,9	2008			79.5	74.3			57.4	85.7	78.6	73.7	74.3
Self-perceived health(% in good or very good health) (2011)	😐	73,6	2011	Decrease	71,4									
Premature mortality (potential years of life lost before 75 years old/ 100.000pers (2008) (M)		6757	2008			6757								
Premature mortality (potential years of life lost before 75 years old/ 100.000pers (2008) (F)		3707	2008				3707							
Premature mortality (potential years of life lost before 75 years old/ 100.000pers (2009) (M)		6480	2009	increase	5999	6480								
Premature mortality (potential years of life lost before 75 years old/ 100.000pers (2009) (F)	😐	3683	2009	increase	3253		3683							
Amenable mortality (potential years of life lost before 75 years old/ 100.000pers (2008) (M)		1235	2008			1235								
Amenable mortality (potential years of life lost before 75 years old/ 100.000pers (2008) (F)		1181	2008				1181							
Amenable mortality (potential years of life lost before 75 years old/ 100.000pers (2009) (M)		1117	2009	Decrease	1232	1117								
Amenable mortality (potential years of life lost before 75 years old/ 100.000pers (2009) (F)		1129	2009	Decrease	1070		1129							
Infant mortality rate (number of deaths/1000 live births) (2008)		3,8	2008			4.2	3.4					4.0	3.1	4.6
Infant mortality rate (number of deaths/1000 live births) (2011)	😐	3,3	2011	Decrease	3,4									

Table 2 – Indicators assessing accessibility of healthcare (see comments hereafter)

Indicator	Glo bal	Belgium	year	Trend over time	eu 15	M	F	65+ home	65+ MRS	Socio Low	Socio high	Flanders	Wallonia	Brussels
Number (per 1000 population) of: practising physicians (2008)		2,87	2008											
Number (per 1000 population) of: practising physicians (2011)		2.91	2011	stable	3,48									
Number (per 1000 population) of: practising nurses (2009)		9.9	2009											
Health insurance status of the population (%) (2008)		99.3	2008											
Health insurance status of the population (%) (2013)	😐	99,1	2013	stable								99,6	99,4	98,2
Co-payments and out-of-pocket expenditures (% of total health expenditures) (2008)		20,8	2008											
Co-payments and out-of-pocket expenditures (% of total health expenditures) (2011)	😐	19.7	2011	Decrease										
Household share in total health exp($US PPP/capita) (2008)		763	2008											
Household share in total health exp($US PPP/capita) (2011)	😐	799	2011	stable										
Self reported unmet need for MC due to financial reason for dental care (2008)		1,6	2008											
Self reported unmet need for MC due to financial reason for dental care (2012)	🔴	2.6	2012	increase										
Self reported unmet need for MC due to financial reason For medicalcare (2012)		0,5	2008											
Self reported unmet need for MC due to financial reason For medicalcare (2012)	🔴	1,6	2012	increase										
Delayed contacts with Health S for financial reasons (%) (2008)	🔴	14	2008							27.0	4.0	11.0	14.0	26.0
Contacts with the dentist (% at least one contact) (2008)		47,8	2008											
Contacts with the dentist (% at least one contact) (2011)	😐	48.8	2011	stable		39,6	16,4	36	49.2	52,1	44,3	43,7		

Indicator	Global	Belgium	year	Trend over time	eu 15	M	F	65+ home	65+ MRS	Socio Low	Socio high	Flanders	Wallonia	Brussels
Cancer screening Breast (% women aged 50-69) (2008)		61,9	2008											
Cancer screening Breast (% women aged 50-69) (2010)		60.1	2010							48.6	62.9	64.9	55.3	51.9
Cancer screening Breast (% women aged 50-69) (2011)	😐	61.9	2011	stable	64,3					49,0	64.9	66,8	55,6	51,8
Cancer screening Cervix (% women aged 25-64) (2010)		58.3	2010							48.9	64.2	61.0	64.6	63.6
Cancer screening Cervix (% women aged 25-64) (2011)	😐	57.7	2011	Decrease	60,1					42.5	57.9	58,3	54,1	57,9
Cancer screening Colorectal(% aged 50-74) (2011)		8.8	2011											
Vaccination coverage children % DTP-Hib (3) (2008)		98,8	2008											
Vaccination coverage children % DTP-Hib (3) (2009)		97.9	2009									98.3	96.9	98.6
Vaccination coverage children % DTP-Hib (3) (2012)	🙂	99.0	2012	increase	96,2									
Vaccination coverage children % DTP-Hib (4) (2012)		92,0	2012									93,2	90,4	91,1
Vaccination coverage children % MMR (1) (2008)		92,9	2008											
Vaccination coverage children % MMR (1) (2009)		94.5	2009									96.8	92.4	91.1
Vaccination coverage children % MMR (1) (2012)	🙂	95.5	2012	increase	92,9							96,6	94,4	94,1
Vaccination coverage children % hepatitis B (2008) (3d)		97,5	2008											
Vaccination coverage children % hepatitis B (2012) (3d)	🙂	97.8	2012	increase	91,3									
Vaccination coverage children % hepatitis B (2012) (4d)		91,3	2012									93	89,2	89,6
Influenza vaccination (% of the 65+) (2009)		62.5	2009							63.5	46.3	65.8	60.9	59.2
Influenza vaccination (% of the 65+) (2011)	😐	58.7	2011	Decrease	55,7			52,7	83,2	61,1	57,7	62,1	53,7	51,1
Number of beds in nursing and residential facilities (per 1000 pop aged 65+) (2011)		70.3	2011									58	83	101
% 65+ with long term care at home (2008)		4.7	2008											
% 65+ with long term care at home (2011)	😐	4.7	2011	stable								5.1	4.4	2.9
% 65+ with long term care in nursing home (2008)		8.2	2008											
% 65+ with long term care in nursing home (2011)	😐	8.4	2011	increase								7.7	9.3	9.6
Informal caregivers (% of population aged 50+) (2007)		12.1	2007											
Timeliness of palliative care: deaths within one week after start of palliative care service (%) (2011)	😐	16.1	2011									13.9	20.9	16.8

Table 3 – Indicators assessing effectiveness of care (see comments hereafter)

Indicator	Global	Belgium	year	Trend over time	eu 15	M	F	65+ home	65+ MRS	Socio Low	Socio high	Flanders	Wallonia	Brussels
5-years relative survival rate breast cancer (2008)	😐	88,3	2008									88,3	88,9	87,7
5-years relative survival rate cervix cancer (2008)	😐	68,6	2008									70,2	69	66,5
5-years relative survival rate colon cancer (2008)	😐	64,8	2008									65,4	63,6	61,8
Hospital admissions for asthma (/100 000 pop aged 15+) (2008)		40	2008											
Hospital admissions for asthma (/100 000 pop aged 15+) (2010)	😐	38	2010	Decrease								34.7	37.6	51.4
Suicide rate (number /100 000 pop) (2008)		18.7	2008			28	10					17	24	14
Suicide rate (number /100 000 pop) (2009)	😐	18.6	2009	stable								17.8	22	12.4
Employment ratio of people with mental health disorder		0.7	2002											
Involuntary committals (% of all psychiatric hospitalizations) (2008)		6,8	2008											
Involuntary committals (% of all psychiatric hospitalizations) (2009)		8,0	2009									8	7	14
Involuntary committals (% of all psychiatric hospitalizations) (2010)	😐	7.1	2010	Decrease								7	5.6	10.7

Table 4 – Indicators assessing appropriateness of care (see comments hereafter)

Indicator	Global	Belgium	year	Trend over time	eu15	M	F	65+ home	65+ MRS	Socio Low	Socio high	Flanders	Wallonia	Brussels
Mammograms outside target group (%)Women aged 40-49 years old (2008)		36,9	2008											
Mammograms outside target group (%)Women aged 40-49 years old (2010)		35.5	2010							28.6	36.6	28.6	46.4	47.7
Mammograms outside target group (%)Women aged 40-49 years old (2011)	😐	35.1	2011	Decrease						27	36.4	28.3	45.6	44.2
Mammograms outside target group (%)Women aged 71-79 years old (2010)	😐	20.8	2010							16.2	23.2	16.4	27.7	31.2
Breast cancer screening organised program (% women aged 50-69 years) (2008)		31,5	2008											
Breast cancer screening organised program (% women aged 50-69 years) (2011)	🔴	32.0	2011	stable						24.2	33.9	48.4	7.8	11.9
Use of antibiotics (total DDD/1000inh /day) (2008)		27,7												
Use of antibiotics (total DDD/1000inh /day) (2011)	🔴	28.7		increase	21,8									
Use of antibiotics (% of population at least once/ year) (2008)		41,9												
Use of antibiotics (% of population at least once/ year) (2011)	😐	41.7		stable				43,4	59,3	45.7	41.1	41.1	44.5	36.4
Antibiotics (% amoxicilline compared to amoxyclav) (2008)		44.7	2008			46.4	51.1			44.4	49.4	46.0	42.8	47.1
Antibiotics (% amoxicilline compared to amoxyclav) (2011)	😐	45.2	2011	increase				34,8	30,2	36.8	42,8	45.6	43.2	50.3
Cephalo and quinolone compared to all DDD AB (2008)		16,9	2008											
Cephalo and quinolone compared to all DDD AB (2011)	😐	15.7	2011	Decrease				19,4	19,1	16,9	15,4	15.4	16.4	15.2
Appropriate follow up of adult diabetic patients * (%) (2008)		54,0	2008			54	55			48	58	57	52	48
Appropriate follow up of adult diabetic patients * (%) Under insulin (2008)		63,5	2008											
Appropriate follow up of adult diabetic patients * (%) Under insulin (2011)	😐	67,0	2011	increase				74,4	33,2	63.2	70	70.5	61.2	66.2
Appropriate follow up of adult diabetic patients * (%) Under oral diabetics (2008)		39,3	2008											
Appropriate follow up of adult diabetic patients * (%) Under oral diabetics (2011)	😐	41,0	2011	increase				45,9	21,3	40.6	41.2	39.7	41.8	46.7
Caesarean sections (per 1000 live births) (2009)		195	2008											
Caesarean sections (per 1000 live births) (2009)		193	2009											
Caesarean sections (per 1000 live births) (2010)	😐	199	2010	increase								19,1	21,0	19,4
Prescription of (average daily quantity/1000 pop) Antidepressants (2008)		64,5	2008											
Prescription of (average daily quantity/1000 pop) Antidepressants (2010)		68.4	2010			43.1	92.8					60.6	85.8	57.1
Prescription of (average daily quantity/1000 pop) Antidepressants (2011)	🔴	70,0	2011	increase	63,9									
Prescription of (average daily quantity/1000 pop) Antipsychotics (2010)		10.5	2010			10.8	10.3					9.6	11.9	11.7
Use of antidepressants (% of pat.) (2008)		13,2	2008											
Use of antidepressants (% of pat.) (2011)		13.3	2011	stable				16,5	47,6	11.7	21.5	11.6	17	11.9
% of patients with short terms antidepressants(<3 months) (2008)		46,9	2008											
% of patients with short terms antidepressants(<3 months) (2011)	🔴	48.5	2011	increase				50,1	30,5	48,1	48,6	47.8	49.2	49.4
Cancer patients receiving chemotherapy in the last 14 days of life (%) (2011)	😐	9%	2011									7.7	11.4	8.6

Table 5 – Indicators assessing safety of care (see comments hereafter)

Indicator	Global	Belgium	year	Trend over time	eu 15	M	F	65+ home	65+ MRS	Socio Low	Socio high	Flanders	Wallonia	Brussels
Medical radiation exposure of the Belgian population (MSv/capita) (2008)		2,07	2008											
Medical radiation exposure of the Belgian population (MSv/capita) (2010)		2,12	2010											
Medical radiation exposure of the Belgian population (MSv/capita) (2011)	😐	2,06	2011	Decrease								1,86	2,48	2,06
Medical radiation from obsolete medical imaging exams (msv/capita) (2008)		1,05	2008											
Medical radiation from obsolete medical imaging exams (msv/capita) (2011)	😐	1.0	2011	Decrease								0.91	1.20	0.89
prevalence acquired infection (/ hospitalised) (2008)		5,7	2008											
prevalence acquired infection (/ hospitalised) (2010)	😐	5,2	2010	Decrease										
Incidence of hospital-acquired MRSA infections (/1000 admissions) (2008)		2,0	2008											
Incidence of hospital-acquired MRSA infections (/1000 admissions) (2010)		1.5	2010									1.2	2.2	1,0
Incidence of hospital-acquired MRSA infections (/1000 admissions) (2012)	🟢	1,1	2012	Decrease								0,9	1,6	0,9
prevalence MRSA in nursing/ residential (2005)		19,0	2008											
prevalence MRSA in nursing/ residential (2011)	😐	12,2	2011	Decrease								14,7	18,3	7,9
Incidence of postoperative sepsis (/100 000 discharges) (2007)	😐	1224	2007											
Incidence of pressure ulcers in hospitals (%) (2012)	😐	7.8	2012									7.1	8.9	8.0
In-hospital mortality after hip fracture (%) (2007)		6.3	2007											
In-hospital mortality after hip fracture (%) (2010)	😐	5.2	2010	Decrease								5.1	5.4	5,0
Patients prescribed anticholinergic antidepressant drug (% of patients aged 65+ on antidepressants) (2008)		16,5	2008											
Patients prescribed anticholinergic antidepressant drug (% of patients aged 65+ on antidepressants) (2010)		14,0	2010			13	14					17	11	10
Patients prescribed anticholinergic antidepressant drug (% of patients aged 65+ on antidepressants) (2011)	😐	15.4	2011	Decrease				17,3	8,8	15.0	15.6	18.5	12.2	10.3

Table 6 – Indicators assessing continuity and coordination of care (see comments hereafter)

Indicator	Global	Belgium	year	Trend over time	eu15	M	F	65+ home	65+ MRS	Socio Low	Socio high	Flanders	Wallonia	Brussels
Patients with a global medical record (%) (2008)		43,0	2008											
Patients with a global medical record (%) (2010)		47,0	2010			42	50			54	44	58	32	29
Patients with a global medical record (%) (2011)	🙁	49.7	2011	increase								60.2	36.3	31.2
Patients with cancer discussed at the multidisciplinary team meeting (%) (2008)		68.8	2008									73.8	62.7	55.7
Patients with cancer discussed at the multidisciplinary team meeting (%) (2010)	😐	78.6	2010	increase								81.4	73.7	76.4
GP encounter within the week after hospital discharge (% patient aged 65+) (2008)		55,4	2008											
GP encounter within the week after hospital discharge (% patient aged 65+) (2009)		58.4	2009			55.4	60.8			64.2	54.6	60.6	57.8	42.5
GP encounter within the week after hospital discharge (% patient aged 65+) (2011)	🙁	52.5	2011	Decrease				49,8	65,5	58.1	49.0	55.6	50.5	35.7
Proportion of contacts with the usual GP (%)(UPC iii index) (2008)		76,8	2008											
Proportion of contacts with the usual GP (%)(UPC iii index) (2010)		71.4	2010			72.1	71.2			76.7	70.5	70.8	74.4	65.9
Proportion of contacts with the usual GP (%)(UPC iii index) (2011)	🙂	75,7	2011	stable						81,3	74,3	74,4	79,0	72,8
Readmission within 30 days in the same psychiatric hospital (%) diagnosis of schizophrenia (2009)		20.2	2009									25.2	17.2	10.2
Readmission within 30 days in the same psychiatric hospital (%)diagnosis of bipolar disorder (2009)		15.6	2009									19.7	13.4	7.1
Patients having a contact with their GP during the last week of their life (%) (2005)	R	-72%	2005											

Table 7 – Indicators assessing patient-centeredness of care (see comments hereafter)

Indicator	Global	Belgium	year	Trend over time	eu 15	M	F	65+ home	65+ MRS	Socio Low	Socio high	Flanders	Wallonia	Brussels
Satisfaction with healthcare services (% good or very good)	😊	>90%	2008			no difference				no difference		higher	lower	lowest
Pain always controlled during hospitalization (% of patients)	R	41,0	2009											
Persons with Terminal cancer who received palliative care (%) (2011)		56,7	2011									62,0	49,9	47,1
Persons dying in their usual place of residence (%) (2011)		30%	2011									32	28.7	21.4

Table 8 – Indicators assessing efficiency of care

Indicator	Global	Belgium	year	Trend over time	eu 15	M	F	65+ home	65+ MRS	Socio Low	Socio high	Flanders	Wallonia	Brussels
Surgical day,case (%) (2008)		46.2	2008											
Surgical day,case (%) (2010)	😐	47.7	2010	increase								49.9	42.3	49.7
Average length of stay for normal delivery (days) (2008)		4.3	2008											
Average length of stay for normal delivery (days) (2010)	☹	4.1	2010	Decrease								4.1	4.2	3.9
Prescription of ambulatory low-cost medications (% DDD on total) (2008)		40,8	2008											
Prescription of ambulatory low-cost medications (% DDD on total) (2010)	😊	46.0	2010									46.2	45.9	45.3
Prescription of ambulatory low-cost medications (% DDD on total) (2012)	😊	52,8	2012	increase								53,2	52,3	51,6
Share of organised programm for breast cancer (2008)		51,0	2011											
Share of organised programm for breast cancer (2011)		51.8	2011	increase								72.4	14.0	23.0
Other indicators discussed in the appropriateness section	R													

Table 9 – Indicators assessing the sustainability of the health system (see comments hereafter)

Indicator	Glo bal	Belgium	year	Trend over time	eu 15	M	F	65+ home	65+ MRS	Socio Low	Socio high	Flanders	Wallonia	Brussels
Medical graduates (per 100.000 population) (2010)		7,1												
Medical graduates (per 100.000 population) (2011)		10.2	2011	increase	12,1									
% Medical graduates becoming GPs (2009)		32	2009									29.2	31.0	
% Medical graduates becoming GPs (2013)	🔴	30	2013	Decrease										
Mean age GP (2008)		50,2	2008											
Mean age GP (2011)		51.7	2011	increase								51	53.3	53,7
Physicians aged 55+ (2008)		35,8												
Physicians aged 55+ (2011)	🔴	40,5		increase	34,8									
Practising physicians (2008)		2,87	2008											
Practising physicians (2011)		2.91	2011	stable	3,48									
Practising psychiatrist(2008)		0,18	2008											
Practising psychiatrist(2011)		0,17	2011	stable										
Nursing graduates (per 1000 population) (2008)		32,4	2008											
Nursing graduates (per 1000 population) (2010)		41,5	2010	increase	34,6									
Practising nurses (per 1000 population)		10,0	2009											
% of the GPs using an electronic medical file (2008)		72,1	2008											
% of the GPs using an electronic medical file (2010)		74.0	2010									83.7	62.5	
% of the GPs using an electronic medical file (2012)	🙂	75.9	2011	increase								84.1	63.6	62,1
Acute-care bed days (2008)(number of bed-days per capita)		1,19	2008											
Acute-care bed days (2009)(number of bed-days per capita)		1.2	2009											
Acute-care bed days (2010)(number of bed-days per capita)	🙂	1.15	2010	decrease								1.14	1.20	1.03
Number of beddays in psychiatric's hospital/1000inh (2008)		328	2008											
Number of beddays in psychiatric's hospital/1000inh (2010)	🙂	333	2010	increase								362	285	269
Total Health Expenditures (% of GDP) (2008)		9,9	2008											
Total Health Expenditures (% of GDP) (2011)	🙂	10.5	2011	increase										
Total Health Expenditures ($US PPP/capita (2008)		3670	2008											
Total Health Expenditures ($US PPP/capita (2011)	🙂	4061	2011	increase	3606									
Total Health Expenditure (% financed by Public S.) (2011)		74,9	2008											
Total Health Expenditure (% financed by Public S.) (2011)	🙂	75.9	2011	increase										

Table 10 – Indicators of health promotion (see comments hereafter)

Indicator	Global	Belgium	year	Trend over time	eu15	M	F	65+ home	65+ MRS	Socio Low	Socio high	Flanders	Wallonia	Brussels
Coverage of DMG+ (¨% 45-75 with DMG) (2011)		6.0										6.7	4.4	7.1
Overweight or obese adults (%) (2008)	☹	46.9	2008			53.7	40.4			57.8	40	47.1	48.9	39.8
Obese adults (%) (2008)		13.8	2008		16,2	13.1	14.4			19.1	9.1	13.6	14.6	11.9
Decayed, missing, filled teeth at age 12-14 (mean score) (2010)	⚠R	1.3	2010											
Diagnosis rate of HIV in Belgian pop (/100 000 pop) (2010)	😐	3.9	2010			6.9	0.7					3.8	2.40	8.9
Daily smokers (% 15+) (2008)	😐	20.5	2008		19,2	23.6	17.7			22.1	13.1	18.6	24	22.3
Alcohol consumption (% 15+)Problematic (2008)		10.2	2008			13.1	7.3			11.5	11	9.5	10.7	14.4
Alcohol consumption (% 15+)Overconsumption (2008)		7.9	2008			10.1	5.9			5.9	8.4	7.9	8.4	6.7
Alcohol consumption (% 15+) Binge drinking 2008	😐	8.1	2008			12.8	3.7			8.3	7.6	8.9	7	6.2
At least 200g vegetables and 2 fruits per day (%) (2008)	😐	26.0	2008			23.4	28.5			21.7	29.4	30.0	19.2	25.3
At least 30 minutes of physical activity per day (%) (2008)	☹	38.1	2008			48.7	28.3			24.0	42.8	45.1	28.4	24.7
Poor social support (%) (2008)	☹	15.5	2008			15.1	16			24.4	10.1	12.4	20.0	22.9
Tobacco Control Scale (2010)	😐	50/100	2010											
Score of supply of physical activity at school (2009)	⚠R		2009									5.5/10		
Health promotion policies in the municipalities (2009)	⚠R		2009									37/36/50		
% of schools with a health-team (2009)	⚠R		2009									42/64/54	40%[v]	40%[v]

Table 11 – Summary table of socioeconomic inequalities (see comments hereafter)

dimensions	Indicator	65+ home	65+ MRS	Socio Low	Socio high
health status	Health expectancy healthy live years (at 25 years) (M)			27.7	46.3
health status	Health expectancy healthy live years (at 25 years) (F)			28.9	47.1
health status	Self-perceived health(% in good or very good health) (2008)			57.4	85.7
accessibility	Delayed contacts with Health S for financial reasons (%) (2008)			27.0	4.0
accessibility	Contacts with the dentist (% at least one contact) (2011)	39,6	16,4	36	49.2
accessibility	Cancer screening Breast (% women aged 50-69) (2010)			48.6	62.9
accessibility	Cancer screening Breast (% women aged 50-69) (2011)			49,0	64.9
accessibility	Cancer screening Cervix (% women aged 25-64) (2010)			48.9	64.2
accessibility	Cancer screening Cervix (% women aged 25-64) (2011)			42.5	57.9
accessibility	Influenza vaccination (% of the 65+) (2009)			63.5	46.3
accessibility	Influenza vaccination (% of the 65+) (2011)	52,7	83,2	61,1	57,7
appropriateness	Mammograms outside target group (%)Women aged 40-49 years old (2010)			28.6	36.6
appropriateness	Mammograms outside target group (%)Women aged 40-49 years old (2011)			27	36.4
appropriateness	Mammograms outside target group (%)Women aged 71-79 years old (2010)			16.2	23.2
appropriateness	Breast cancer screening organised program (% women aged 50-69 years) (2011)			24.2	33.9
appropriateness	Use of antibiotics (% of population at least once/ year) (2011)	43,4	59,3	45.7	41.1
appropriateness	Antibiotics (% amoxicilline compared to amoxyclav) (2011)	34,8	30,2	36.8	42,8
appropriateness	Cephalo and quinolone compared to all DDD AB (2011)	19,4	19,1	16,9	15,4
appropriateness	Appropriate follow up of adult diabetic patients * (%) (2008)			48	58
appropriateness	Appropriate follow up of adult diabetic patients * (%) Under insulin (2011)	74,4	33,2	63.2	70
appropriateness	Appropriate follow up of adult diabetic patients * (%) Under oral diabetics (2011)	45,9	21,3	40.6	41.2
appropriateness	Use of antidepressants (% of pat.) (2011)	16,5	47,6	11.7	21.5
appropriateness	% of patients with short terms antidepressants(<3 months) (2011)	50,1	30,5	48,1	48,6
safety	Patients prescribed anticholinergic antidepressant drug (% of patients aged 65+ on antidepressants) (2011)	17,3	8,8	15.0	15.6
continuity	Patients with a global medical record (%) (2010)			54	44
continuity	GP encounter within the week after hospital discharge (% patient aged 65+) (2009)			64.2	54.6
continuity	GP encounter within the week after hospital discharge (% patient aged 65+) (2011)	49,8	65,5	58.1	49.0
health promotion	Overweight or obese adults (%) (2008)			57.8	40
health promotion	Obese adults (%) (2008)			19.1	9.1
health promotion	Daily smokers (% 15+) (2008)			22.1	13.1
health promotion	Alcohol consumption (% 15+)Problematic (2008)			11.5	11
health promotion	Alcohol consumption (% 15+)Overconsumption (2008)			5.9	8.4
health promotion	Alcohol consumption (% 15+) Binge drinking 2008)			8.3	7.6
health promotion	At least 200g vegetables and 2 fruits per day (%) (2008)			21.7	29.4
health promotion	At least 30 minutes of physical activity per day (%) (2008)			24.0	42.8
health promotion	Poor social support (%) (2008)			24.4	10.1

Comments to the results (dimensions):

Health status (see figure 1 & table 1)

The four health status indicators show positive evolutions over time. The life expectancy result is slightly lower than the EU-15 average, while health expectancy (defined as the remaining years lived from a particular age without activity limitation) and infant mortality ranks at an intermediate position. The percentage of people perceiving their health as (at least) good, ranks higher than the EU-15 average.

Global health status: add an indicator with high potential for action, i.e. avoidable/amenable mortality.

The previous report included premature mortality as an indicator of health status, expressed as potential years of life lost (PYLL) before the age of 70.

Key point for the future: the study of mortality expressed by a group of causes, and the study of avoidable/amenable mortality, could provide interesting information on the effectiveness of health services.

Accessibility (see figure 2 & table 2)

13 indicators assess the accessibility of the healthcare system.

With regard to the financial accessibility, despite a universal insurance coverage and the existence of social safety nets (maximum billing, OMNIO, Special Solidarity Fund), some concerns subsist (high level of out of pocket expenses, and some level of delayed contacts with health services due to financial reasons).

The accessibility of preventive measures show quite discrepant results, with relatively poor cancer screening rates (with social and some regional disparities), a moderate vaccination rate for the older persons, and a good vaccination rate for children.

Another aspect of the accessibility is the availability of healthcare workforce related to the needs. While an important effort has allowed getting data on the side of the supply, data on the needs are still lacking.

Financial accessibility: need for a more comprehensive picture. A prerequisite to guide policies in the domain of financial accessibility is an improved transparency in (i) supplements in case of ambulatory care as well as in (ii) private hospital insurances (the percentage of people having private hospital insurance, and what is specifically covered by these private insurances, at what cost).

Financial accessibility and equity: a more comprehensive way to measure the equity of the system is to take into account the distribution of private expenditures (official co-payments, supplements, net reimbursements by private insurances and intervention of the maximum billing) in function of the socio-economic status. Individual patient data on income and all expenses are needed to calculate such a distribution.

Workforce counts: better data on the supply side are available, but data on the need side are still lacking. An effective healthcare workforce planning should be considered within a global policy taking into account supply and patient needs. Data on the supply side have undoubtedly improved these last years. But no indicators of the needs have been defined yet in this report. On the other hand, the needed workforce is not only depending on the medical needs but also on the way the health care system is organised, for instance primary versus hospital care.

Key point for future review and complete accessibility with EU framework (especially for financial accessibility which need a more comprehensive picture).

Quality of care (see figure 2 & table 3 to 7)

Effectiveness (see table 3)

Seven indicators were chosen to assess the effectiveness of health care: survival rate after breast, cervix or colorectal cancer; hospital admission rate for asthma; and three new indicators on mental health: suicide rate per 100 000 population, the ratio of the employment rate of persons with a mental health disorder to the rate for person with other disabilities (such as musculoskeletal), and the proportion of involuntary restraining hospitalisation related to all psychiatric hospitalisations.

The effectiveness showed a mixed picture: it scored very well on cancer survival rates, but with concerns in the field of mental health given that Belgium has the second highest suicide rate in Europe (with very high regional disparities), and a high and increasing level of involuntary confinements in psychiatric hospitals. More indicators and data are needed to describe the effectiveness in mental health.

Link should be made with feedbacks and Peer Review.

Appropriateness (see table 4)

Eight indicators were selected to measure the appropriateness of care, and in general they show bad results, especially for the indicators related to inappropriate breast cancer screening (not in target population) or the compliance with guidelines (for antibiotics or for the follow-up of diabetic patients). The appropriateness of care is rather disappointing with high and increasing rates of breast cancer screening outside the target groups, moderate follow up of guidelines (antibiotics, diabetic patients), increasing rates of caesarean sections with large variability between hospitals. Link should be made with feedbacks and Peer Review.

Safety (see table 5)

Six indicators evaluate the safety of care, and show encouraging results with decreasing trends in the exposure to medical radiation, hospital-acquired MRSA, hospital mortality after hip fracture, and stable incidence of post-operative sepsis and prescription of anticholinergic antidepressants to older persons. However the incidence of pressure ulcers is increasing. Link should be made with feedbacks and Peer Review.

Continuity of Care (see table 6)

The current set of seven indicators on continuity and coordination of care shows mixed results, with a good relational continuity with the same physician, average and increasing rate of multidisciplinary consultation for cancer cases, but a low coverage of the Global Medical Record and high readmission rate in psychiatric hospital.

New data in this domain will be available soon with the new pathways in ambulatory care, but still many gaps remain. The results of pathways in ambulatory care for type 2 diabetes or chronic renal failure patients will be included in the next edition of this report. However data on other relevant indicators, such as patient experiences with coordination of care or availability of patient health information, are lacking.

Need for more data and indicators.

Patient-Centeredness (see table 7)

Patient-centeredness could only be very partially assessed by two indicators. A high satisfaction rate with health services was found as well as a trend to die more at the place of living. Patient centeredness is intrinsically difficult to measure with quantitative data because it is related to the health system's ability to successfully answer to the particular needs of the patient or to encourage the patient's involvement.

Need for more data and indicators: To improve our understanding in this domain, the next wave of the Health interview Survey will contain a set of questions on the patient's experience with ambulatory healthcare services (GP or specialists) based on the OECD questionnaire to facilitate international comparison. Patient's experience with ambulatory care will thus be included in the following update of this report.

Efficiency of the healthcare system (see figure 1 & table 8)

Three indicators have been selected to evaluate the efficiency of the healthcare system.

The efficiency of the healthcare system shows average to good results as assessed with an increase in prescription of low-cost drugs, in use of one day surgical care, and decrease in length of stay for a normal delivery. However, this has to be mitigated by the poor results of some indicators showing some degree of inappropriateness, and thus waste of resources, like the above mentioned mammograms outside the target group.

Key point for the future (on international level): efficiency should deserve more attention in future reports. Obviously, efficiency in healthcare cannot be sufficiently assessed with the few indicators selected. International literature proposes efficiency measures which explicitly identify inputs and outputs. This could certainly be an interesting area of research. Moreover, the joint report points out that "the OECD has conducted substantial analytical work (Hakkinen and Joumard) looking at the efficiency of health systems (defined as each country's relative ability to transform health sector resources in health outcomes). The analysis, using panel data regressions and data envelopment analysis, compares life expectancy, infant mortality, perinatal mortality, premature mortality and health adjusted life expectancy, with the costs of inputs proxied by health expenditure per capita and the number of health practitioners. The aim is to identify best-practices to enhance spending cost-effectiveness.

N.B. Preliminary conclusions from those studies: 1) health services and goods seems to play an important role in explaining health status changes over time and cross-country differences, together with lifestyles, education, environment and income; 2) However, health spending is not producing the same value for money (cost-effectiveness) across countries: in many countries (both high spending and low spending) there is room to improve population health status (of up to 3 years) without increasing spending."

Sustainability/ Resilience (see figure 1 & table 9)

Sustainability of the Belgian health system shows some puzzling results regarding the replacement of the current cohort of GPs. As mentioned above, data on the needs on nurses coupled with data on the evolution of the supply are urgently needed.

The scope should also be enlarged with good governance considerations and analyse adequate costing.

Key point for the future: review and complete sustainability/resilience with EU framework.

Equity

Strong inequalities were observed in the health and lifestyle indicators and were discussed above. Inequalities were also observed for the cancer screening and for the follow up of chronic patients. (See table 11). However, most hospital-based indicators could not been studied by social status in this work. In the health insurance data, the information on the socio-economic status is rather crude and approximate. Conclusions are still largely incomplete with regard to inequalities in care provision and quality.

Equity was also highlighted at a global level. The progressiveness of the financing of healthcare is decreasing (more based on financial taxes) and this is an evolution towards less equity. The Gini index corresponds to the level of inequality in the global distribution of incomes in Belgium, and has been shown to be related to the global health status. It is relatively low in Belgium (hence no important inequality) but it has been increasing over time, which can be interpreted as a less equal distribution.

Key point for the future: further research is needed.

Comments to the results (domain):

Health Promotion (see figure 1 & table 10)

Since the very limited availability of suitable indicators and data, only a fragmented view could be showed. Most health/lifestyle indicators show an intermediate national rate, but important regional/social disparities are observed. We pinpoint the problem of obesity/overweight that shows quite high and increasing rates with severe disparities. The tobacco consumption decreases, but with large social and regional disparities. The fruits and vegetables consumption is far lower than the daily needs, but improves. The lack of social support also shows important social and regional disparities, and is of particular concern for the elderly. Belgium ranks at an intermediate level on the international Tobacco Control Scale Policies. Some complex indices aim to measure the strength of the local health promotion policies in various settings (schools, municipalities, enterprises), but are only available in Flanders and are difficult to interpret without an in-depth analysis.

Key point for the future: Data on health literacy are lacking, while they are already available in other European countries. Health literacy is a relatively new concept considered as a crucial resource in health management. It can be defined as the individual skills necessary to understand and manage factors interacting with one's health. This gives individuals the opportunity to make healthier choices. It has been defined as a priority for action in the 2008-2013 European Union strategy, and results from the EU Health Literacy Survey are now available for some countries. However, there is a lack of information on important domains of health systems (even on international level), for example mental health, long-term care and end of life.

Mental healthcare:

Current indicators do not reflect the recent changes in the sector. The most recent reform aims at attaining a balanced integrated care model focused on the development of "care networks" (the so-called 'Art. 107 project'). The main objective is that community services should be offered whenever possible, while hospital services should be available when ambulatory care cannot provide a good answer to the patient's needs. Some new indicators have been proposed to monitor

these evolutions (e.g. the percentage of patients with case management; the percentage of expenditures on community care compared to total expenditures on mental health care). But they could not yet been measured because of limitations in the current data.

Key point for the future: further development of indicators.

Long-term care:

Several indicators have been selected to assess the quality of long-term care for older patients, such as the prevalence of malnutrition, the percentage of older patients physically restrained, the prevalence of falls, the incidence of pressure ulcers and the problem of poly-medication. Those indicators could not be measured yet highlighting the current lack of data in this domain. However, the BelRAI will soon provide data on some selected indicators. BelRAI is an instrument developed to assess needs of older persons in residential facilities or receiving nursing care at home.

Key point for the future: further development of indicators.

End-of-life care:

There are many local studies in Belgium, but few national data. The few indicators in this report are based on the population of patients dying from cancer, or on the population of patients receiving palliative care at home. This does not cover the whole population of patients eligible for palliative care highlighting a real gap in data availability. Moreover, so far no data at national level have been published on accessibility nor on quality of end-of-life care. Compared to other domains of care, end-of-life care is little or not at all represented in databases from international organisations.

Key point for the future: further development of indicators.

Example of recommendations

Table 12 –Belgium HSPA: Example for concrete recommendations

Recommendations

General recommendation to policy makers

The concept of performance is implicitly linked to the attainment of objectives. Even though this report takes stock of "the current situation", it should first and foremost be used to "improve the situation". In that light, policy makers should clarify the measurable objectives with deadlines.

Positive findings (situation to be maintained) and negative findings (warning signals)

In general terms, the institutions and bodies concerned are advised to adjust their course to improve the situation in areas where warning signals have been issued.

- Health status:
  - The very high suicide rates in comparison with the European average are challenging.
  - A growing number of people has been found to be overweight or obese while the number of people engaging in physical activity seems to be relatively low, this still compared to the European average.

- Coverage of preventive measures:

  The coverage rate of breast and cervical cancer screening in the target groups is low in comparison with the European average. The organised coverage of breast cancer screening is too low to be efficient. Another key element, the screening of people who do not come within the breast cancer target groups is important and is on the increase amongst 40 to 49 and 70-to-79-year-olds, which is counterproductive in terms of public health and the use of collective resources.

- Equity/ social inequalities:

  People of a lower socio-economic status (measured by level of education or by access to preferential health care reimbursement schemes) have, in comparison with the highest socio-economic group: a worse health status (life expectancy, healthy life expectancy, infant mortality, obesity), a less healthy lifestyle (diet, smoking, physical activity), enjoy poorer cancer screening coverage, a poorer follow-up of patients suffering from diabetes, less social support and die more often in hospital than in their usual place of residence.

- Quality of the health care:

  - (In)appropriate care: several indicators show that medical practice is not always appropriate. For instance:
    - The choice of antibiotics that are prescribed in first instance does not adequately meet the recommendations and shows no signs of improvement over the course of time (save in children).
    - The percentage of patients suffering from diabetes that is correctly followed up in line with recommendations is too low.
    - Even though the level is a little below that of the average in other European countries, the rate of caesarean sections is high (20%) and the numbers of caesarean sections performed following a complication-free pregnancy vary greatly from hospital to hospital.
  - Health care safety: even though the levels of radiation of medical origin are slightly lower than in 2011, they remain high compared to the European average.
  - Continuity of care: certain indicators show that there is a weakness in this area. For instance:
    - In spite of a continuous increase, the percentage of patients with a global medical file remains low.

- Sustainability of the system: The health system relies on primary care in which general medicine plays a key role. Even though the average age of general practitioners continues to rise, the quotas laid down by the planning commission have not been filled for a few years now. This may pose problems in terms of the functioning of that primary care in a near future.

Recommendation to improve the health information systems

The quality of the data and the speed at which they are made available are essential in terms of ensuring the relevance of the indicators that depend on them.

- Timeliness of the data:
  - Continuing the efforts to transmit recent updates to OECD, Eurostat, WHO.
  - Accelerating access to administrative databases (Minimum Hospital Data).
- Data per area of care:
  - Mental health care: reforming the Minimum Psychiatric. Data so as to bring them in line with international standards (unique patient identifier) and with

developments in the sector. A review, that would allow patients' entire care path, including the outpatient care.

- Long-term care: improve data collected within BelRai project.
- Oral health survey: oversampling 12-year-olds group to calculate international indicators.
- End-of-life care: improve use of existing data (Cancer Register).
- Public health: completing the medication usage database to ensure that data are available on all the medication used, including on drugs that are not refunded but which need to be studied for public health or patient safety purposes (benzodiazepines, certain anti-inflammatories).

Recommendations for the collection of new data or new research

Certain data needed to develop indicators that have already been selected must still be collected.

- Socio-economic inequalities: administrative databases can only offer a partial answer. Some data are simply unavailable (for instance, socio-economic status or ethnicity do not feature in the hospital data), others are either not very specific or not differentiating enough (for instance the recipients of preferential reimbursement).
- Affordability: enhancing the household budget survey to record the full health-care-related cost to patients and to facilitate an analysis by socio-economic level.
- Patient experience: data will become available thanks to the next Scientific Institute of Public Health survey, which will deal with general practitioners and consultants across the board.
- Health promotion:
  - There are no data on "health literacy" in Belgium. More specifically, Belgium would take part in European research aimed at developing tools to measure health literacy.
  - Community-based health promotion: all regions should collect data on health promotion in communities (schools, towns, companies) more systematically in function of the information they need to document and support their policies.

Recommendations for the next performance report (scheduled for December 2015)

- For the attention of the FPS Public Health, the National Institute for Health and Disability Insurance (INAMI) and the Scientific Institute of Public Health (ISP).
  - Improve indicators collection from several databases (the outpatient care paths project, the BelRAI project, patient experience in the health survey, the prevalence of hospital-acquired infections, time to reimburse new medications).
  - For monitoring purposes, indicators should preferably be routinely measured by the institutions/administrations.
  - Follow international developments (OECD, WHO, Eurostat) in order to, adjust the set.
- For the attention of the research teams.
  - Identifying new indicators for poorly documented issues (e.g. labour force in nursing care).
  - Updating the performance review on the basis of more recent data.

– Analysing the overall coherence (with a view to reinforcing the efficiency and sustainability dimensions) and updating the set of indicators in light of new evidence or new priority issues.