



The Social Protection Committee
Indicators' Sub-group

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Brussels, 17 February 2015

**Towards a Joint Assessment Framework in the Area of
Health**

Work in progress: 2014 update



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1. BACKGROUND

The 2013 ISG Work Programme identified as its main work priority the review of the indicators related to health and exploring the feasibility of developing a health policy area within the Joint Assessment Framework (JAF) in view of strengthening the assessment tools related to health. The objective of such a framework should be to strengthen the use of the evidence-base by the Social Protection Committee (SPC) in its activities related to health policy in the context of the Open Method of Co-ordination (OMC), and possibly also in the context of the European Semester.

The proposed framework is intended to act as a **first-step screening device** to detect possible challenges in MS's health systems, with a specific focus on issues related to access, quality and equity. Following the approach of the Joint Assessment Framework (JAF) methodology, this first quantitative step is to be followed by a more qualitative assessment, based on a wider set of data and information, which can verify and deepen the understanding of the challenges identified by this first screening.¹

The present proposal, developed by the ISG with the support of the Commission services (in particular DG Employment, Social Affairs and Inclusion and Eurostat, with due consultation of DG SANTE and DG ECFIN), has been strongly conditioned upon the state of play in terms of data availability and data quality in the area of health. The development of the assessment framework has resulted in a thorough review of the existing health data and the identification of significant data gaps and further indicator development needs, which will allow a more robust and solid quantitative base for such a framework in the future.

The present paper provides an update of the framework presented to the SPC in November 2013.² In particular, it takes into account developments in data availability and coverage. It is structured as follows. First, it explains the Joint Assessment Framework (JAF) methodology and gives an overview of the data sources used. It then presents the conceptual framework of the health system as proposed for adapting JAF methodology in the area of health. Next, individual indicators, underpinning each of the dimensions of the framework, are proposed and presented, providing data sources and comparability limitations, where appropriate.

¹ This qualitative assessment can be done based on comprehensive country specific information available from WHO's Health Systems in transition, OECD country reports and OECD Health at a Glance series, as well as other Commission reports, such as Joint Report on Health Systems and Ageing Report.

² [SPC/2013.11/7] Developing an assessment framework in the area of health based on the Joint Assessment Framework methodology: final report to the SPC on the first stage of implementation



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2. METHODOLOGICAL CHOICES

2.1. Joint Assessment Framework (JAF) methodology

The present work takes as its basis the methodology developed in the Commission-EMCO-SPC Joint Assessment Framework (JAF).³

The JAF methodology is a combination of a first-step screening of country specific challenges based on quantitative information and a second-step in-depth more qualitative analysis to contextualise findings coming from hard data. The latter involves consultation of thematic reports, national-level publications as well as national data sets. The main purpose of employing the JAF methodology in the area of health is therefore to identify key challenges and best practices in the Member States health systems for achieving the social OMC objectives of equal access, high-quality health care and financial sustainability.

It should also be kept in mind that in various EU Member States the responsibilities and governance structures for health systems lay at the regional level and regions display large differences in health, economic development and health system performance. Furthermore, given complexity of the health system, within any national system some parts of it may be functioning well (e.g.: primary care) while others (e.g.: mental health care) may not. No adequate internationally comparable indicators are available yet to assess and compare the quality of such sub-systems therefore national resources maybe better placed for that.

In the following section a conceptual framework covering all relevant areas of a broad health system definition is presented. It acknowledges the complexity of health systems with their multiple dimensions, which makes it very difficult to summarize performance through a single measure.⁴ That is why the JAF Health uses a dashboard for the indicators chosen to underpin the different aspects of health systems, rather than a hierarchy of indicators as originally suggested by the JAF methodology. Apart from it, the core JAF has been followed when distinction was made between main and context indicators. **Main indicators** as suggested by the JAF methodology are employed in the first step quantitative assessment and **context indicators** are to be used together with other international and national information sources in the second step more qualitative assessment. In other words, the context information refers to past and future trends in the light of which the main indicators are assessed.

Following the JAF methodology a priority for the choice of indicators was given to **EU social indicators**. In this context, the present JAF in the area of health recognises another important distinction applied to the EU social indicators namely the one of **commonly agreed EU indicators (EU) and commonly agreed national indicators based on commonly agreed definitions and assumptions (NAT)** as a useful way to classify the proposed indicators and send a clear message on their normative potential.⁵ Ideally, such a framework would be based

³ This methodology has so far been used in other policy areas, including employment, education and social inclusion; more details as to the methodology are available here: <http://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=972&furtherNews=yes>

⁴ Smith at al. (2009) Performance measurement for health system improvement

⁵ In the 'Portfolio of indicators for the monitoring of the European strategy for social protection and social inclusion' (September 2009 update), available at: <http://ec.europa.eu/social/main.jsp?catId=756> these are defined as follows: **EU indicators** are "commonly agreed EU indicators contributing to a comparative



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on a set of EU indicators, i.e. indicators that have clear normative interpretation and high quality of coverage and cross-country comparability. However, when analysing the available health data and indicators, the very strong limitations on the existing set of health indicators, which can satisfy all of these criteria, has been the reason for an explicit choice of looking at not only EU but also NAT indicators, i.e. indicators that do not fulfil the criteria of cross-country comparability or coverage. In order to highlight the due caution with which NAT indicators should be treated, they have been marked across the framework and the respective outputs. It is our understanding that this is a sub-optimal but necessary solution in order to arrive to some results until better data becomes available.

The latter holds true also for the indicators proposed for the JAF in the area of health, which are not EU social indicators. These are indicators from existing international data sources, but also indicators that are not sufficiently developed or need still to be developed. Such indicators are referred to as **indicators for development**. The necessity to include such indicators is directly linked to the complex and multidimensional nature of the health systems' framework.

In summary, the list of the proposed indicators for the JAF Health includes such which were selected from the EU social indicators portfolio but also a number of indicators for development that were not evaluated with the quality criteria of the EU social indicators. Therefore the latter indicators need first to be tested and only at a later stage, when definitions and data collection are considered stable and with sufficient coverage, a conclusive qualitative evaluation undertaken by the ISG might lead to their inclusion in the JAF Health and, if appropriate, to a proposal to the SPC for their inclusion in the EU social indicators portfolio⁶.

All this leads to the conclusion that, for the time being, it has to be kept in mind that missing data, comparability problems and lack of appropriate indicators to fully assess health system performance across the targeted dimensions constrain the explanatory power of the framework. As a result, the analytical results must be interpreted with caution.

The main and context indicators, with their definitions, sources and information on data availability for the number of EU Member States and the latest and next year for which data is collected or disseminated are presented in tables under each dimension of the conceptual framework, together with letter codes introduced to ease a reference to the suggested indicators. The indicators selected from the EU social indicators are separated from the proposed indicators for development and presented in two sets of tables under each dimension.

assessment of Member States. These indicators might refer to social outcomes, intermediate social outcomes or outputs". **NAT indicators** are "commonly agreed national indicators based on commonly agreed definitions and assumptions that provide key information to assess the progress of MS in relation to certain objectives, while not allowing for a direct cross-country comparison, or not necessarily having a clear normative interpretation. These indicators are especially suited to measure the scale and nature of policy intervention. These indicators should be interpreted jointly with the relevant background information (exact definition, assumptions, representativeness)".

⁶ As the EU social indicators have more functions and are used for more applications than the JAF health alone, the inclusion into EU social indicators should be discussed separately.



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The JAF methodology suggests looking at how much countries are deviating from the EU average on any given indicator. The degree of deviation from the EU average is then taken as a (first) indication of over- or underperformance on this particular indicator (always keeping in mind that the EU average itself is not an indicator of good performance).

As the JAF health consists of a range of indicators for each dimension, they are standardised in order to present them on the same scale in one single chart and therefore allow for an easier comparison and analysis. Technically expressed, the standardisation consists in transforming the values of each indicator per policy area according to a common standardisation formula. The calculation for that involves standardising the value of the considered indicator by the mean and the standardised deviation and multiplying it by ten.

More formally, the standardisation formula can be expressed as:

*Individual Score for each indicator = [(Indicator – EU average)/Standard deviation] *10*

The JAF methodology proposes to use, where possible, the weighted EU-28 average as the mean. In the area of health, however, for a number of indicators (most prominently in the "non-health system determinants" area) data is not available for all Member States and an EU-28 average is not possible. Thus, for indicators where there is missing country data and no EU-28 average is possible, an un-weighted average for the available data is calculated and used in the standardisation as the reference point. This second best approach for calculating the EU average is currently applied because the JAF methodology needs a common reference point. However, as a matter of discussion it could be introduced and possibly addressed in the general review of the core JAF methodology, which is planned to be conducted this year⁷. The mid-term target, however, is to complete the coverage where Member State coverage gaps exist so that the reference point comes more in line with the "EU average" as conceptualised in the core JAF..

The results for the indicators included to underpin the JAF health framework are shown per Member State in illustration charts with coloured bars for the main indicators and grey bars for the context indicators. Additionally to the reference point of EU average, the minimum and maximum values in the EU for each indicator are referred to in light grey background bars. More details about the illustration charts and some examples are included in section 5.

For the moment the framework represents a snapshot of health systems' performance at a point in time for which latest data is available, offering a static and not a dynamic picture of the situation. However, expected improvement in data collection and dissemination will allow for the assessment to be supplemented by time series, which will help to assess the situation and development in the individual Member States.

⁷ In the ISG 2015 Work Programme a review of the current social monitoring framework is envisaged. It includes the review of JAF in the social policy areas to be carried out together with the EMCO Indicators group and the European Commission.



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2.2. Data sources

In recent years, there have been significant improvements in health data collection and comparability at the EU level.⁸

The main data sources from which the proposed indicators are derived include:

- Joint Questionnaire (Eurostat-OECD-WHO) on non-monetary health care statistics
- Joint Questionnaire (Eurostat-OECD-WHO) on health care expenditure statistics based on the System of Health Accounts (SHA)
- European Health Interview Survey (EHIS)
- EU-SILC
- Eurostat demography data.

The subsequent sections present a detailed summary of definitions, data sources and their comparability. However, after a thorough review of existing data and indicators and several rounds of discussion, the limitations of the current list of indicators in terms of issues covered, the very heterogeneous nature of health data in terms of timely availability, comparability and coverage have emerged as major constraints in building a framework which delivers on timely and comprehensive monitoring.

3. CONCEPTUAL FRAMEWORK

For the needs of this work, we follow the WHO definition of health systems as *"the people, institutions and resources, arranged together in accordance with established policies, to improve the health of the population they serve, while responding to people's legitimate expectations and protecting them against the cost of ill-health through a variety of activities whose primary intent is to improve health"*.⁹ The conceptual framework takes into account also the broad definition of health systems as used for the purposes of the Tallinn Charter of the WHO European Region stating that *"health system encompasses both personal and population services, as well as activities to influence the policies and actions of other sectors to address the social, environmental and economic determinants of health"*.¹⁰ Therefore, not only the health care services but also broader public health, external factors and issues related to the wider socio-economic determinants of health are taken into account.

The proposed framework (see Figure 1 below¹¹) is based on the input from the ISG delegates and a review of literature on comparative Health System Performance Assessment (HSPA), as developed by other international organisations.¹² It is built on the assumption that overall

⁸ For a more detailed overview of these data collection developments, please look at the Progress report on the review of the joint assessment framework in the area of health systems (SPC/ISG/2015/01/2.1)

⁹ The world health report 2000: health systems: improving performance. Geneva, World Health Organization, 2000. Available at: http://www.who.int/whr/2000/en/whr00_en.pdf

¹⁰ The Tallinn Charter: Health Systems for Health and Wealth. Copenhagen, WHO Regional Office for Europe, 2008, available at: http://www.euro.who.int/__data/assets/pdf_file/0008/88613/E91438.pdf?ua=1

¹¹ This figure is for illustrative purposes and will be developed in more detail in the future.

¹² For a comprehensive overview of available literature, see Papanicolas, I. and Smith, P.C (2013) Health Systems Performance Comparison: An agenda for Policy, information and research, Maidenhead: Open University Press.



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health outcomes are driven by two distinct sets of factors. Following from the work of WHO¹³ and OECD¹⁴ as well as a more recent review done in the context of the EuroREACH¹⁵ project, the framework below distinguishes between *health care related determinants* and the issues that fall *outside of the health care*, referred to here as non-health care determinants. These two segments together define the boundaries of the health system for the needs of our conceptual framework. As it is a framework developed by the Social Protection Committee, it goes beyond health care systems performance and allows taking into consideration other social determinants, which have impact on health and can be modified by social policies. It also recognises that population health is influenced by other sectors and underlines the necessity to coordinate policies to jointly address health concerns.

Overall health outcomes

The main outcome that is expected from a health system is a good health status of the population. This should not only be measured by the health system's ability to prevent premature death. In an ageing society it is increasingly important to prevent ill-health and to mitigate chronic diseases and disability. Thus, one should not only look at mortality (or life expectancy) data, but also at indicators of disability free life expectancy, which is a key determinant of people's ability to work and live independently up to a higher age.

Health care related determinants

The first set of drivers determines whether **all** people in need of health care can receive high quality interventions, when required. Here we look at issues of: *access* and *quality* as well as *resources*, which underpin the two.

For access the WHO definition of accessibility as '*a measure of the proportion of the population that reaches appropriate health services*' is followed and as the literature suggests three sets of barriers in access to healthcare are considered, namely financial, geographical and due to waiting times.

Quality of care is a complex concept with numerous dimensions. Research over recent decades points to the fact that definitions of quality vary widely. This model uses the OMC definition of quality care as keeping up '*with medical advances and the emerging needs associated with ageing and is based on an assessment of their health benefits*'¹⁶. So far the OMC considerations on the quality of health care put emphasis on preventive measures and a breakdown by gender.

¹³ WHO (2000) Performance Framework, available at: <http://www.who.int/healthinfo/paper06.pdf>

¹⁴ OECD (2006) Health Care Quality Indicators, available at: <http://www.oecd.org/els/health-systems/36262363.pdf>

¹⁵ www.euroreach.net

¹⁶ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2004:0304:FIN:EN:PDF>



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The conceptual framework underscores that financial, human and technological resources have impact on both access and quality of healthcare while recognising that no normative interpretation is possible. That is why, resource indicators are classified as context indicators, to be used in the second-step more qualitative assessment only.

We also point to the question whether better health could be achieved with the same resources, signalling the need to study more thoroughly *efficiency* of the health systems.

Efficiency

Even though there is no linear relation between resources and health outcomes, most countries could further improve health outcomes with the resources they currently spend on the health sector, meaning achieving better health at the same cost (or the same health at a lower cost). This is especially important given the fact that health expenditure makes up a large and growing share of GDP.¹⁷ Given the rising demand for health care and constrained resources, there is a need to increase the *efficiency* of health systems in order to be able to provide universal access to high quality care, while ensuring sustainability of health systems.

To this end further and more in-depth work is needed to populate the conceptual framework with efficiency indicators that would consider also analysis by disease type and by function of health care, which is beyond the scope of this exercise at this stage but is recognised as an important work stream for the future.

Non-health care related determinants

On the other hand, overall health outcomes are also driven by factors outside of the health care system, which are linked to *individual lifestyles and behaviour* as well as *environmental factors*, which play out in interaction with genetic predisposition. This offers a potential for prevention activities, including health protection and health promotion for improving population health at relatively low immediate cost. In developed countries, where non-communicable diseases account for the vast majority of potential life years lost, it has been noted that a large share of variation in health outcomes across countries will not be explained by differences in health systems. On the other hand, a large share of the variation across countries is due to degree of success of health promotion, disease and other prevention policies rather than through differences in personal health care services.¹⁸ Acknowledging that efficient preventive interventions need to follow a multisectoral pattern, and that the implementation of the health in all policies approach can have a substantial impact on the overall health outcomes, the non-health care related determinants (individual health lifestyles and behaviour as well as external factors not related to lifestyle) are considered main dimensions in the conceptual framework. In a consequence, the proposed indicators for those dimensions will be included in the first-step quantitative assessment.

While, it is recognised that a host of other characteristics such as relationship or family status, housing tenure etc. have bearings on the individual health behaviour and outcomes, these individual-level qualifiers are not introduced in the analysis.

¹⁷ See Joint Report on Health Systems available at: http://europa.eu/epc/pdf/joint_healthcare_report_en.pdf

¹⁸ Schroeder et al (2007), available at: <http://www.nejm.org/doi/full/10.1056/NEJMsa073350>



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Socio-economic context

Following the OECD, the present conceptual framework also recognises that the wider *socio-economic context*, or issues falling outside of the health system boundaries, would have an impact on both healthcare and non-healthcare related factors and ultimately having bearings on the health outcomes. The indicators chosen under this dimension will be for contextual information only.

Equity

Mainstreaming *equity* at all levels of the conceptual framework has been given a clear priority, following the OMC recommendation to provide a *breakdown of all indicators by age, gender and socio-economic status* to the extent possible. This approach was also recommended in the Communication on Health Inequalities and the impact assessment that accompanied it¹⁹ and it was also reflected in more recent research projects^{20,21}. It has been noted that people from higher socioeconomic groups pay more attention to their health-related behaviours and are likely to make better use of effective healthcare interventions, as they tend to have higher health literacy. This is why it is important not to look only at the average levels of health as these averages may hide significant variations across groups; the distributional aspect is an important element to consider.

As the literature suggests, people in vulnerable situations experience higher degrees of morbidity and mortality. Equitable access to healthcare is therefore essential to minimise their disadvantage. In practice, however, people in equal need do not receive equal treatment at all income levels, not even in EU countries with a longstanding tradition in providing rather universal and comprehensive health services coverage arrangements for their population. Therefore, equity concerns have been integrated into the framework transversally by proposing to look at relevant indicators broken down by gender, age/life stages and/or socio-economic status (SES) as considered appropriate for the indicator in question and depending on data availability. In general, indicators based on EHIS provide breakdown by educational status, while those based on EU-SILC allow for break down based on income.

However, it should be noted that for important dimensions of health outcomes such as Healthy Life Years (HLY), or infant mortality, current data does not allow for a breakdown by socio-economic status, while for life expectancy the breakdown is not available for all countries. Furthermore, the breakdown of demographic data by socio-economic status could not be approximated at least in the medium-term by income levels. An option that has been explored is to look at the variations in health outcomes by educational level, as recommended by European Core Health Indicators (ECHI).²² However, where possible, priority was given to *break-downs by income groups, over break-downs by educational levels*.

¹⁹ http://ec.europa.eu/health/archive/ph_determinants/socio_economics/documents/com2009_iasum_en.pdf

²⁰ EuroReach: www.euroreach.net/activities/workpackages/wp1

²¹ [Eurohealthnet](http://eurohealthnet.net) (2012), Re-orienting health systems: towards modern, responsive and sustainable health promoting systems; Discussion paper

²² Previously known as European Community Health Indicators, more info on: <http://ec.europa.eu/health/indicators/echi>



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It should be highlighted that equity has a strong regional dimension in all countries, which can be of particular importance to Member States with predominant governance structure of the health system at regional level. Even though regional disparities are not included in the present framework, one possibility to take account of the regional aspect of equity could be the inclusion of Member States' own data and analysis in the second phase of more qualitative assessment.

Life course approach

As suggested by the WHO framework for health systems performance assessment, the health of the population should reflect the health of individuals through the life course²³. Therefore the JAF framework captures various aspects of ***health at different stages of life, from birth, through childhood, adolescence to the old age.***

Children and adolescents are the future of our societies and their health is of a prime concern. Newborns and children are vulnerable to infectious diseases, many of which can be effectively prevented or treated, and that is why we look at indicators as infant and child mortality, as well as vaccination coverage for children. Special attention deserves the lifestyle of adolescents of age 15+ with regard to the immediate and long-term effects on health and chronic conditions that are likely to emerge in adulthood and old age. Furthermore, the growing share of old age population shapes not only the epidemiological change, but also the evolvement of health care services to be delivered, including disease prevention services as influenza vaccination. Important in this context is not only the life expectancy of old aged, but also how many years they can live in good health.

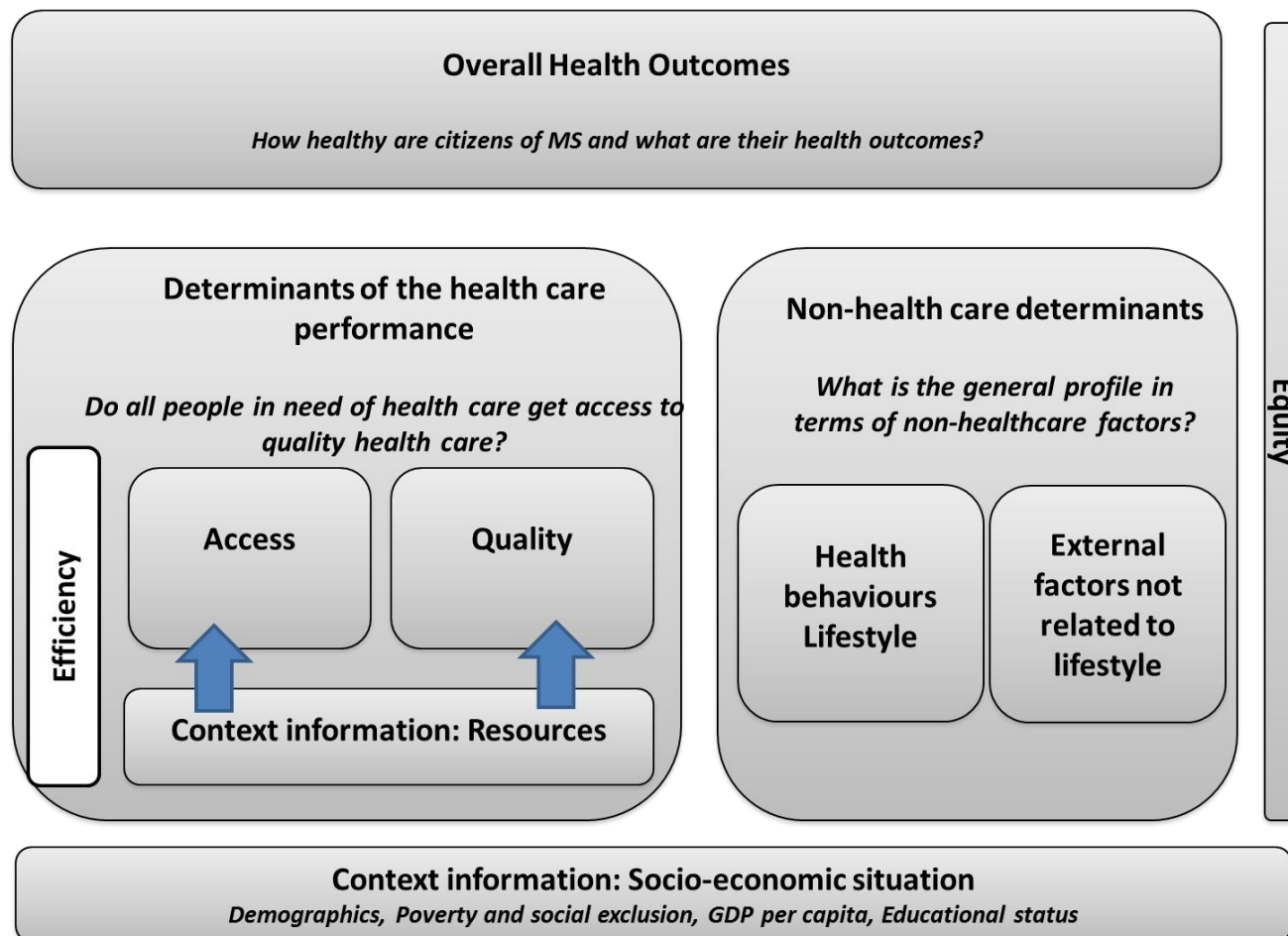
The choice of individual indicators to describe each of the dimensions of the conceptual framework is discussed in more detail in the section below.

²³ Murray CJL, Frenk J. (2000) Evidence and information for policy, WHO



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Figure 1. Proposed conceptual framework for the JAF in the area of health





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Source: Commission services (2014)



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4. CHOICE OF INDICATORS PER DIMENSION

In this section, choice of indicators is presented for each of the dimensions. Indicators are divided into two groups, firstly the indicators selected from the EU social indicators portfolio are presented; secondly the indicators proposed for development are shown. Proposed indicators for development have to be discussed by the ISG, evaluated after data has become available and, if consented by ISG, proposed for endorsement by the SPC.

4.1. Overall health outcomes

One of the main health system's goals is to improve the health of the populations they serve. This can be captured by using broad measures of mortality or by measures of the time lived in poor health.

Indicators selected from the EU social indicators portfolio

In order to capture overall health outcomes, we use a set of indicators as opposed to a single one. Measures of *life expectancy* and *healthy life years* at birth and 65, and broken down by gender, provide an important starting point to observe the functioning of a health system for various segments of the population and to capture any inequalities.

Life expectancy is a well-established and widely accepted and available indicator. It allows for straightforward comparisons at multiple levels, starting from population sub-groups all the way to Member States. Healthy Life Years (HLY), or "disability-free life expectancy", indicates the number of years a person of a certain age can expect to live without limitations in activities people usually do.²⁴ HLY has been endorsed as an important policy indicator – it was a structural indicator under the Lisbon Strategy,²⁵ and it currently can assist with understanding progress towards the Europe 2020 targets,²⁶ particularly those on employment rates and poverty reduction. Furthermore, increasing the average healthy lifespan in the EU by two years by 2020 is the primary objective of the EU Innovation Partnership on Active and Healthy Ageing (EIP AHA),²⁷ which is a flagship initiative under Europe 2020. HLY is a European Core Health Indicator (ECHI)²⁸ and, together with Life Expectancy (LE), is used as EU sustainable development indicators (SDI).²⁹ It is to some extent subjective and based partly on a self-assessment of limitations in usual activities but important improvements in the comparability of data^{30,31} and limiting the subjective bias are underway.

²⁴ More information available from: http://ec.europa.eu/health/indicators/healthy_life_years/index_en.htm, and <http://www.eurohex.eu/index.php?option=aboutehemu>

²⁵ http://ec.europa.eu/archives/growthandjobs_2009

²⁶ http://ec.europa.eu/europe2020/index_en.htm

²⁷ <https://webgate.ec.europa.eu/eipaha/index/aboutus>

²⁸ <http://www.echim.org>; the most recent documentation sheets for each indicator are available from http://www.echim.org/docs/Final_Report_II_2012.pdf

²⁹ <http://epp.eurostat.ec.europa.eu/portal/page/portal/sdi/indicators>

³⁰ For more information, please see <http://www.eurohex.eu/>

³¹ http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/Annexes/hlth_hlye_esms_an2.pdf; and Eurostat note on "A synthesis report on the 2012 consultation on further harmonisation and documentation on the EU-SILC1 PH0302 variable", Luxembourg, 21/08/2012



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Life expectancy at birth when compared with healthy life years at birth can provide an indication of the number of years an individual may be able to contribute productively to society. Healthy life years on its own also signal the potential burden on the healthcare system. The disparity between the figures for life expectancy and healthy life years at birth can also provide an indication of the gap that needs closing by increasing the healthy life years.

The framework also includes subjective measures such as self-perceived general health and its distribution. The indicators on *self-perceived general health* have been found to be correlated with the amount of health care people use, as well as being an accurate predictor of mortality. Such a measure is indisputably subjective in its nature, and subject to a strong cultural bias. However, this information could be of value at a national level (rather than the EU level) for individual governments to note how their own populations believe their health is faring for instance over time or across different population sub-groups. In the context of JAF Health, it provides yet another dimension to the bird's eye view on how well the health system is working. The *gap between people from the top and bottom income quintiles* reporting good or very good health is a good proxy of the distribution of health, admittedly among the extreme poles of society.

The next group of indicators concerns mortality at the beginning of life. *Infant mortality* is defined as the rate at which babies and children of less than one year of age die. It reflects both the impact of socio-economic factors on the health of mothers and new-borns and the effectiveness of health systems in addressing health inequalities.

Indicators for development

Linked to this is an indicator of *child mortality*, which also captures avoidable causes of death as much of the morbidity and mortality among children and young people is preventable. Among other factors, it is linked to immunization for preventable diseases and preventing morbidity from substance abuse, injuries and mental illness. Socio-economic inequalities also have a significant impact on child mortality rates. In order to monitor the implementation of the Commission recommendation on "Investing in children" we are proposing to look at the child mortality for ages 1-14.

Next, a measure of *potential years of life lost* completes the list of outcome indicators. According to the OECD, Potential Years of Life Lost (PYLL) is a summary measure of premature mortality, which provides an explicit way of weighting deaths occurring at younger ages, which are, a priori preventable. A distribution of PYLL by socio-economic status would be a good measure of health inequalities. This indicator requires further development.

Developing avoidable mortality indicators (including amenable or preventable deaths) could further strengthen the health outcomes section of this framework. Therefore, two alternative indicators falling under the concept of avoidable mortality have been added. First, an indicator on *amenable mortality* has been included. It is understood as deaths that could be avoided through good quality of healthcare.³² Among the factors contributing to stopping of

³² Here it is understood as deaths amenable to health care, defined as a death that in the light of medical knowledge and technology at the time of death, all or most deaths from that cause could be avoided through



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those untimely deaths are effective immunisations and cancer screenings, the indicators of which are included in this section of the framework. Based on on-going work in the Eurostat Task Force on satellite lists³³, data could be disseminated as of 2015 provided there is technical agreement on the classification of amenable diseases. In addition, an indicator on *preventable deaths* was included. It takes into account deaths occurring due to lacking health promotion and prevention interventions. The choice on the avoidable mortality indicator from the proposed alternatives could be made as soon as data is available.

Building on the WHO statement that there is no health without mental health, the framework includes measures of *mental health* and *well-being* to complement the other outcome indicators that are more strongly linked to physical health.

Overall, the objective of the proposed set of overall health outcomes (H) indicators³⁴ as presented in tables 1a and 1b would be to give as much as possible a balanced country profile on the overall health outcomes.

good quality health care (ONS 2011); Here amenable mortality together with preventable mortality are considered as parts of avoidable mortality.

³³ Here: lists complementary to standard causes of death

³⁴ This is the same set of JAF Health indicators as presented to the SPC in November 2013. The only change in the current update is that the indicator *external causes of death* was moved from the overall health outcomes to the external factors not related to lifestyle dimension.



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Table 1a: Overall health outcomes – proposed main indicators selected from the EU social indicators portfolio

Code	Indicator	EU/NAT	Definition	Data source	Comments	EU data availability	Year (currently available)	Year (next update)
H-1	Life expectancy at birth and 65 (total population, women, men)	EU	Mean number of years that a newborn child (or that of a specific age) can expect to live if subjected throughout his life to the current mortality conditions (age specific probabilities of dying).	Eurostat (Demographic data)	OMC HC-P4a, ECHI 10 Annual data, full coverage.	28 MS	2012	2013 data available in early 2015
H-2	Healthy life years (HLY) at birth and 65 (women, men)	NAT	Mean number of years that a person at birth or at 65 is expected to live in a healthy condition, i.e. the number of years of life free of any activity limitation (also called disability - free life expectancy). Based on self-perceived limitations in daily activities (GALI).	Eurostat (Demographic data and EU-SILC)	OMC HC-P5a, ECHI 40 Annual data, full coverage.	28 MS	2012	2013 data available in early 2015
H-3	Self-perceived general health	NAT	Percentage of people reporting a good or very good health.	Eurostat (EU-SILC)	OMC HC-S2, ECHI 33 Annual data, full coverage.	28 MS	2012	2013 data available in early 2015
H-4	Self-perceived general health - income quintile gap (q1/q5)	NAT	Ratio of the people from the top and bottom income quintiles reporting a good or very good health.	Eurostat (EU-SILC)	OMC HC-S2 Annual data, full coverage.	28 MS	2012	2013 data available in early 2015
H-5	Infant mortality rate (total)	EU	Ratio of the number of deaths of children under one year of age during the year to the number of live births in that year. The value is expressed per 1 000 live births.	Eurostat (Demographic data)	OMC HC-S3, ECHI 11 - Commission recommendation on "Investing in children" monitoring framework; - data on causes will be available by the end of year 2014.	28 MS	2012	2013 data available in 2015



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Table 1b: Overall health outcomes – proposed main indicators for development



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Code	Indicator	EU/NAT	Definition	Data source	Comments	EU data availability	Year (first available)	Year (next update)
H-6	Child mortality, 1-14 (total)		Death rate per 100,000 population.	Eurostat (COD)	This indicator can be provided by Eurostat by ad-hoc extraction on demand, as the data is disseminated for 0-14 age breakdown; - Commission recommendation on "Investing in children" monitoring framework suggests calculating 3-year moving average for small countries. Eurostat recommends removing the reference to a 3-year moving average in order to be consistent with other indicators such as Infant mortality rate.	28 MS	2011	2012 data available in 2015
H-7	Potential years of life lost (total, by SES)		Current OECD definition: Potential Years of Life Lost (PYLL) is a summary measure of premature mortality which provides an explicit way of weighting deaths occurring at younger ages, which are, a priori, preventable. The calculation of PYLL involves summing up deaths occurring at each age multiplying this with the number of remaining years to live up to a selected age limit (70 years for OECD Health data calculation).	Eurostat (possible sources: COD and Demographic data)	Eurostat investigates the possibility to provide an indicator on Potential Years of Life Lost (total) as a summary measure in 2015 ("B" indicator); SES breakdown not possible "C" indicator.	expected 28 MS	2011 data available in 2015	2012 data available in 2015
H-8a	Amenable mortality		Total number of deaths which can be attributed to amenable deaths (list of ICD codes defined by Eurostat's TS Satellite list).	Eurostat (COD)	Eurostat expects to publish data on amenable mortality from early 2015 onwards. Since the indicator is based on comparable ICD codes (as for the other causes of deaths) and uses a wide range of ICD codes, it should be comparable on the EU level.	expected 28 MS	2011 data available in 2015	
H-8b	Preventable mortality		Total number of deaths which can be attributed to preventable deaths (list of ICD codes defined by Eurostat's TS Satellite list).	Eurostat (COD)	Eurostat expects to publish data on preventable mortality from early 2015 onwards. The data on causes of deaths does not allow a linkage to socio-economic indicators. Since the indicator is based on comparable ICD codes (as for the other causes of deaths) and uses a wide range of ICD codes, it should be comparable on the EU level.	expected 28 MS	2011 data available in 2015	



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Table 1b (continued): Overall health outcomes – proposed main indicators for development

Code	Indicator	EU/NAT	Definition	Data source	Comments	EU data availability	Year (first available)	Year (next update)
H-9	Well-being (to include also income quintile gap)		To be defined.	Eurostat (EU-SILC) and/or other sources	New indicator to be developed; Given the multi-dimensional nature of well-being Eurostat does not support the inclusion/development of a single (composite) indicator. Eurostat already disseminates a set of indicators on Quality of Life that could be explored.			
H-10	Mental Health		To be defined.	Eurostat (EHIS)	Potential indicators for which data is available in EHIS: (1) Self-reported 12-month prevalence of depression; (2) Depressive symptom prevalence; (3) Prevalence percentage of depressive symptom severity. The data availability depends on the indicator to be chosen as some countries asked for derogation on variables which are needed to calculate indicators 2 and 3.	expected 28 MS	2014 data available in 2016	



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4.2. Health care performance

In the present framework, we defined health care as having three key dimensions of performance: access, quality and resources. Each is discussed separately below.

4.2.1. Access

Access to good quality healthcare services is a prerequisite for social integration and inclusive growth. Achieving access to adequate health care and long-term care for all is embedded in the Open Method of Coordination for social protection and social inclusion, along with other health-related objectives, i.e. tackling health inequalities, with a further dedicated strategy in this field.³⁵

The right of access to preventive health care and the right to benefit from medical treatment are guaranteed in the EU's Charter of Fundamental Rights³⁶. It is also prominently listed as one of the four common values and principles of EU health systems, along with universality, solidarity and equity³⁷. Furthermore, ensuring people have easy access to primary care of good quality may generate savings and is likely to enhance efficiency by preventing ill health and avoiding use of more expensive services in secondary care.³⁸ Ensuring access in proportion to need is allocative efficient and hence raises population health outcomes. Health systems need to ensure equity in financing, where payments are according to ability to pay. Another dimension is the equity in delivery, which can be both vertical (different treatment for different need) and horizontal (equal treatment for equal need). When talking about equity of access in financial terms, one should consider, not only who is covered, but also, what services are covered and to what extent these are subject to out-of-pocket payments. This is illustrated in in Figure 2 below.

³⁵ http://ec.europa.eu/health/ph_determinants/socio_economics/documents/com2009_en.pdf

³⁶ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:083:0389:0403:en:PDF>

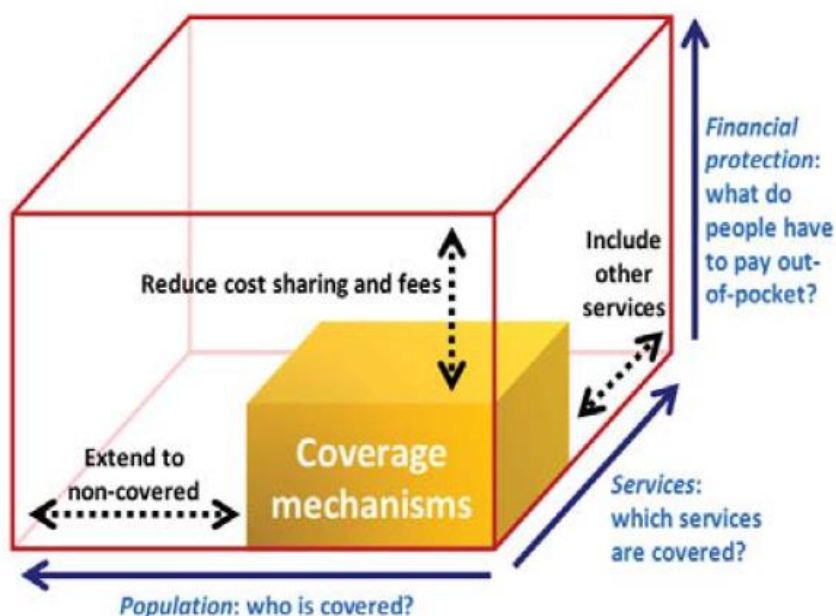
³⁷ European Commission (2007) Together for health: a strategic approach for the EU, available at: http://ec.europa.eu/health-eu/doc/whitepaper_en.pdf

³⁸ http://www.euro.who.int/_data/assets/pdf_file/0009/170865/e96643.pdf



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Figure 2. Dimensions of health coverage



Source: WHO (2010)

Organisational barriers, such as waiting lists or limited surgery opening hours also have a relatively greater impact on people with low incomes. If waiting lists are long, these people usually lack the means to turn to alternative providers in the private sector. People in blue collar jobs and/or working in shifts may have less flexibility to attend surgery hours and when they feel their job is at risk they may delay seeking care. However, it should also be acknowledged that rationing by waiting may be more beneficial to those with lower income than rationing by price. Lastly, geographical barriers are especially relevant to older people and those with limited mobility. Such barriers may be exacerbated in rural areas, where poverty risk also tends to be higher.

Indicators selected from the EU social indicators portfolio

Therefore, the framework includes *"self-reported unmet need for medical care"*, which covers barriers resulting from financial, geographical and waiting time issues. It also includes *the gap between the reported unmet needs for medical care*³⁹ between the top and bottom income quintiles. This gap indicator could illustrate cultural/structural differences across Member States, however its inclusion in the framework should be reviewed.

³⁹ We excluded the indicator capturing the income quintile gap for the unmet dental needs, as based on correlation results they seemed to suggest limited value – it did not help explain cross-country variations in life expectancy.



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When analysing the information on reported unmet need for medical care, the indicator on ***care utilisation***, defined as use of primary, and secondary out-patient care, should be looked at together with unmet needs (as context information for the former).

Health baskets offered within the scope of public insurance programmes are fairly comprehensive, but people in vulnerable situations may still miss out on certain services. Dental care, physiotherapy and certain mental health services are often excluded from basic packages. However, taking out additional insurance cover may be a financial step too far for people on lower incomes, thereby severely restricting their access to such services.

This is why the framework also looks at levels of health insurance coverage, which determines the extent to which people are protected from the financial consequences of ill health (financial protection) and have access to needed services. This is captured by the OECD indicator ***share of the population covered by health insurance***, which includes coverage by both public and private insurance.⁴⁰ However, the indicator comes with its shortcomings - range of services covered and the degree of cost sharing can vary across countries and various substitutive public coverage mechanisms may be in place at Member State level for specific population groups (e.g. civil servants, prison detainees, army personnel) skewing conclusions on Member State variation based on this indicator.

Indicators for development

Finally, out-of-pocket payments can pose barriers to access to health. Groups at risk of poverty and/or social exclusion are disproportionately affected by the financial burden of cost-sharing arrangements. This can impact negatively on the uptake of necessary services. In some countries, special arrangements exist to protect people on lower incomes for the relatively high costs incurred through exemptions. However, it should also be acknowledged that some of the out-of-pocket expenditure occurs because people choose to (rather than have to) pay for private services (perhaps wanting higher quality), therefore it may not always be associated with payments by those on lower incomes. Overall, this contributes to an improvement of health outcomes at population level.

Therefore, two possible indicators on ***out-of-pocket payment*** are proposed to complete the access dimension. A micro-level dimension addressing the financial burden for health care at the household level which is not possible to define based on current data availability but is highlighted for future development. A macro-level dimension on aggregate out-of-pocket expenditure which can be built based on existing data on health expenditure and which can serve as a context information to be defined.

The suggested access (A) indicators are presented in tables 2a and 2b.

⁴⁰ This does not distinguish the coverage for different functions of care.



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Table 2a: Health care system access – proposed main indicators selected from the EU social indicators portfolio

Code	Indicator	EU/NAT	Definition	Data source	Comments	EU data availability	Year (currently available)	Year (next update)
A-1	Self-reported unmet need for medical care (total by reason: cost, waiting time, distance)	NAT	Total self-reported unmet need for medical examination for the following three reasons: financial barriers, waiting times, too far to travel.	Eurostat (EU-SILC)	OMC HC-P1, ECHI 80 - annual data, full coverage; - to be possibly complemented with information on care utilisation - possibilities include hospital discharges (ECHI 71 and 71) and/or out-patient medical care (ECHI 72 and 72), data available from administrative sources but also based on the proposed EU-SILC ad hoc module variables on care utilisation.	28 MS	2012	2013 data available in early 2015
A-2	Self-reported unmet need for medical care - income quintile gap (q1/q5 by reason: cost, waiting time, distance)	NAT	Ratio of the people from the top and bottom income quintile which self-reported total unmet need for medical examination for the following three reasons: financial barriers, waiting times, too far to travel.	Eurostat (EU-SILC)	OMC HC-P1 - annual data, full coverage. - to be possibly complemented with information on care utilisation - possibilities include hospital discharges (ECHI 71) and/or out-patient medical care (ECHI 72), data available from administrative sources.	28 MS	2012	2013 data available in early 2015
A-3	Share of population covered by health insurance	NAT	The percentage of the population covered by public health insurance (which is defined as tax-based public health insurance and income-related payroll taxes including social security contribution schemes) + the percentage of the population covered by private health insurance including: Private mandatory health insurance, Private employment group health insurance, Private community-rated health insurance, and Private risk-rated health insurance.	OECD	OMC HC-P3, ECHI 76 - annual data, - other sources for BG, CY, HR, LV, LT, MT, RO.	28 MS	2012	



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Table 2b: Health care system access – proposed main and context indicators for development

Code	Indicator	EU/NAT	Definition	Data source	Comments	EU data availability	Year (first available)
A-4	Financial burden of out-of-pocket payment for health care		A micro-level indicator to be defined.	Eurostat (future EU-SILC 3-year health module)	The indicator could be based on the 3 "financial burden of health care" variables proposed in the EU-SILC 3-year health module. EU Household Budget Survey could also be considered as a source.	expected 28 MS	Probably after 2018
<i>Context information for access dimension</i>							
A-5	Care utilisation (total, by SES)	Context	To be defined and possibly also broken down by socio-economic group.	Eurostat (future EU-SILC 3-year health module)	There are three possibilities: (1) Data on "number of visits to a doctor (GP or specialist)/dentist during the last 12 months" likely available from the future EU-SILC 3-year health module could be considered; (2) EHIS data could also serve the same use but only every 5 years and with no link to unmet needs variables in EU-SILC; and (3) the Joint questionnaire on non-expenditure data with no SES breakdowns could be considered.	expected 28 MS	Probably after 2020
A-6	Household out-of-pocket payment for health care	Context	A macro-level indicator to be defined. 'Household out-of-pocket payment' means a direct payment for health care goods and services from the household primary income or savings, where the payment is made by the user at the time of the purchase of goods or the use of the service.	Eurostat (SHA 2011)	"HF.3 Household out-of pocket payment", Eurostat (Joint questionnaire with OECD/WHO), also on-going work at the Eurostat's Task Force. Missing countries: IE, IT, UK.	25 MS	2012, 2011 (LV)



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4.2.2. *Quality*

Quality in health care has many dimensions, which may capture different aspects of the system, such as structure, process and outcomes⁴¹ and would ideally have to be measured using a very large set of indicators. For example, the OECD's Health Care Quality Indicators (HCQI) contains over 40 indicators grouped under the following headings: cancer care; care for acute exacerbation of chronic conditions (AMI); care for chronic conditions; care for mental disorder and patient safety.

However, it is not feasible to have such a broad range of indicators in a summary overview of the health system as presently required in the JAF framework. Therefore we aim to identify some indicators that, together, could be representative of the overall quality of the health care system. The present framework includes process, as well as outcome measures.

Indicators selected from the EU social indicators portfolio

Cancer, next to cardiovascular diseases, is the leading cause of death in Europe. The data for, **cancer survival** and **screening rates** are included for **breast and cervical** (for women) and **colorectal cancer** (total), as those are seen as good proxies of care quality. In order to be able to have data on annual basis Joint Questionnaire is used as a source for screening rates. However, this causes a limitation that data cannot be broken down by socio-economic status. Survival rates reflect advances in public health interventions, (greater awareness, screening programmes⁴²) and better clinical procedures. This reflects not only quality of treatment but also quality of the organisational infrastructure, such as integrated care pathways. For cancer survival rates, two sources of data can be used, firstly Eurocare⁴³, or alternatively the OECD data set. The two are presented in the tables below.

Along with survival rates, the OMC health objectives clearly state that a key element of assessing the quality of health care, should be in looking at both preventive and curative measures. Therefore, two prevention indicators are proposed, both of which capture vaccination rates at both ends of the age spectrum – **vaccination coverage in children** and **influenza vaccination in the over-65s**. Data on these are widely available, both through the OECD, the WHO, and/or through the EHIS. In order to capture the inequalities in health, we look at the differences in influenza vaccination coverage by socio-economic status, using the educational level gap between the least and most educated as a proxy.

Indicators for development

Furthermore, quality can be assessed in both primary care and hospital care settings through data on **avoidable admissions** especially for **chronic conditions** such as **diabetes** and **asthma**. This data has been collected by the OECD in 2011, though they are only available for 18 EU

⁴¹ Donabedian (2005) reprint of Donabedian, 1966

⁴² In the ideal scenario survival rates by stages of cancer would be introduced; however this could be discussed at a later stage;

⁴³ Eurocare is an European cancer registry based study on survival and care of cancer patients: <http://www.eurocare.it/Home/tabid/36/Default.aspx>



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Member States.⁴⁴ Alternatively, Eurostat annual data on hospital discharges can be used instead.⁴⁵

Data on avoidable admissions gives important insights into the frequency of acute crises, which need to be avoided in these conditions. Acute crises can be harmful for patients with chronic diseases both in terms of quality of life and risks, but also in terms of longer-term complications. These indicators capture the capacity of health systems to address chronic conditions in the long-term in a coordinated and patient-centred manner, for example through the interface between primary care and secondary care, early detection of symptoms, patient empowerment and health literacy etc.

The framework also includes two indicators that reflect the quality of care for cardiovascular diseases, as next to cancer, they greatly contribute to the disease burden. These indicators are ***In-hospital mortality following AMI*** (heart attack) and ***In-hospital mortality following stroke***, which reflect quality of acute care. They can be used to reflect care quality (integrated care pathways) as well as quality of preventive services and public health interventions, in relation with lifestyles and behaviours determinants and health literacy.

The suggested quality (Q) indicators are presented in tables 3a and 3b.

⁴⁴ The following EU MS are covered: AT, BE, CZ, DE, DK, ES, FI, FR, HU, IE, IT, NL, PL, PT, SE, SI, SK, UK; available at: <http://www.oecd-ilibrary.org/docserver/download/8111101ec040.pdf?expires=1365062378&id=id&accname=guest&checksum=858AF4D79B83FB7D5A3365E0BD804082>

⁴⁵ Eurostat collects annual data on hospital discharges for: Chronic obstructive pulmonary disease and bronchiectasis (J40-J44, J47) Asthma (J45-J46) and Diabetes mellitus (E10-E14), therefore allowing for construction of indicators on avoidable admissions for these conditions.



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Table 3a: Health care system quality – proposed main indicators selected from the EU social indicators portfolio

Code	Indicator	EU/NAT	Definition	Data source	Comments	EU data availability	Year (currently available)	Year (next update)
Q-1a	Colorectal cancer survival rates (total)	NAT	Age-standardized 5-year relative colorectal survival rate is the observed rate of persons diagnosed with colorectal cancer (C18-C21) surviving five years after diagnosis, divided by expected survival rate in the general population.	Eurocare	OMC HC-P9, ECHI 78 - annual data, currently missing EL, CY, LU, HU, RO.	23 MS	patients diagnosed 2000-2007	patients diagnosed 2008-2012 data expected to be released in 2017
Q-2a	Breast cancer survival rates (women)	NAT	Age-standardized 5-year relative breast survival rate is the observed rate of women diagnosed with breast cancer (C50) surviving five years after diagnosis, divided by expected survival rate in the general population.	Eurocare	OMC HC-S6, ECHI 78 - annual data, currently missing EL, CY, LU, HU, RO.	23 MS	patients diagnosed 2000-2007	patients diagnosed 2008-2012 data expected to be released in 2017
Q-3a	Cervical cancer survival rates (women)	NAT	Age-standardized 5-year relative cervical survival rate is the observed rate of women diagnosed with cervical cancer (C53) surviving five years after diagnosis, divided by expected survival rate in the general population.	Eurocare	OMC HC-P8, ECHI 78 - annual data, currently missing EL, CY, LU, HU, RO.	23 MS	patients diagnosed 2000-2007	patients diagnosed 2008-2012 data expected to be released in 2017
<i>alternatively</i>								
Q-1b	Colorectal cancer survival rates (total)	NAT	Five-year observed survival for men, women and total population aged 15-99 diagnosed with colorectal cancer (first primary cancer at the specified site) divided by the expected survival of a comparable group from the general population (expressed in percentage).	OECD	OMC HC-P9, ECHI 78 - annual data, currently missing BG, HR, CY, EE, FR, EL, HU, IT, LT, LU, MT, RO, SK, ES.	14 MS	patients diagnosed 2007-2012	patients diagnosed 2008-2013 data in 2015
Q-2b	Breast cancer survival rates (women)	NAT	Five-year observed survival for women aged 15-99 diagnosed with breast cancer (first primary cancer at the specified site) divided by the expected survival of a comparable group from the general population (expressed in percentage).	OECD	OMC HC-S6, ECHI 78 - annual data, currently missing BG, HR, CY, EE, FR, EL, HU, IT, LT, LU, MT, RO, SK, ES.	14 MS	patients diagnosed 2007-2012	patients diagnosed 2008-2013 data in 2015
Q-3b	Cervical cancer survival rates (women)	NAT	Five-year observed survival for women aged 15-99 diagnosed with cervical cancer (first primary cancer at the specified site) divided by the expected survival of a comparable group from the general population (expressed in percentage).	OECD	OMC HC-P8, ECHI 78 - annual data, currently missing BG, HR, CY, EE, FR, EL, HU, IT, LT, LU, MT, RO, SK, ES.	14 MS	patients diagnosed 2007-2012	patients diagnosed 2008-2013 data in 2015



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Table 3a (continued): Health care system quality –proposed main indicators selected from the EU social indicators portfolio

Code	Indicator	EU/NAT	Definition	Data source	Comments	EU data availability	Year (currently available)	Year (next update)
Q-4	Breast cancer screening (women)	EU	Proportion of women (aged 50-69) reporting to have undergone a breast cancer screening test within the past two years.	Eurostat (Joint questionnaire with OECD/WHO)	OMC HC-S5, ECHI 58 - annual data; missing countries: BE, BG, GR, ES, AT, MT, PL, PT, RO, SK, SE, DE; - alternatively EHIS can be used: every 5 years, current data from 2008 available for 17 MS. Next data available in 2016 for year 2012 and 28 MS.	16 MS	2012	2012 data available in 2014
Q-5	Cervical cancer screening (women)	EU	Proportion of women (aged 20-69) reporting to have undergone a cervical cancer screening test within the past three years.	Eurostat (Joint questionnaire with OECD/WHO)	OMC HC-P7, ECHI 59 - annual data; missing countries: BE, BG, DE, GR, ES, FR, HR, LV, AT, PL, PT, RO, SK, SE, MT; - alternatively EHIS can be used: data every 5 years, current data from 2008 available for 17 MS. Next data available in 2016 for year 2012 and 28 MS.	13 MS	2013	2013 data available in 2014
Q-6	Colorectal cancer screening (total, men, women)	NAT	Proportion of persons (aged 50-74) reporting to have undergone a colorectal cancer screening test in the past two years.	Eurostat (EHIS)	ECHI 60 - EHIS data every 5 years. Currently missing countries: BE, DK, EE, ES, IE, HR, IT, LT, LU, NL, AT, PT, FI, SE, UK. Next data available in 2016 for year 2012 and 28 MS.	15 MS	2008	2014 data available in 2016
Q-7	Vaccination coverage for children	EU	Percentage of infants who have been fully vaccinated against important infectious childhood diseases (reaching their 1 st birthday in the given calendar year against pertussis, diphtheria, tetanus, and poliomyelitis; reaching their 2 nd birthday in the given calendar year against measles, mumps and rubella).	WHO (HfA)	OMC HC-P6, ECHI 56 - Commission recommendation on "Investing in children" monitoring framework; - annual data; full coverage; - if aggregate measure is to be used, its calculation still needs to be defined.	28 MS	2012	
Q-8	Influenza vaccination for 65+ (total, by educational level gap between ISCED 0-2 and 5-6)	EU (NAT in 2008)	Proportion of elderly individuals reporting to have received one shot of influenza vaccine during the last 12 months.	Eurostat (EHIS)	OMC HC-S4, ECHI 57 EHIS data every 5 years. Currently missing countries: BE, DK, EE, ES, IE, HR, IT, LT, LU, NL, AT, PT, FI, SE, UK. Next data available in 2016 for year 2012 and 28 MS. Alternatively data from the Joint questionnaire with OECD/WHO can be used for the total measure as available more frequently, but it does not allow breakdown by educational level. Data available for 17 MS. Missing countries: BE, BG, CZ, DE, GR, CY, NL, AT, PT, SE, MT. Next data available in 2014 for year 2012.	14 MS	2008	2014 data available in 2016



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Table 3b: Health care system quality – availability and source of proposed main indicators for development

Code	Indicator	EU/NAT	Definition	Data source	Comments	EU data availability	Year (currently available)	Year (next update)
Q-9	Avoidable admission: respiratory diseases		The asthma and COPD indicators for respiratory diseases are defined at the OECD as the number of hospital discharges of people aged 15 years and over per 100 000 population, adjusted to take account of the age and sex composition of each country's population structure.	OECD / possibly Eurostat in the future	OECD data biannually available for 21 MS: currently missing BG, EL, HR, CY, LT, LV, RO. Eurostat will investigate the possibility to include indicators on avoidable admission asthma and COPD in 2015.	21 MS	2011	2013 data available in 2015
Q-10	Avoidable admission: uncontrolled diabetes		The indicator for uncontrolled diabetes is defined as the number of hospital discharges of people aged 15 years and over with diabetes Type I or II without mention of a short-term or long-term complication per 100 000 population. The rates have been adjusted to take account of the age and sex composition of each country's population structure.	OECD / possibly Eurostat in the future	OECD data biannually available for 21 MS: currently missing BG, EL, HR, CY, LT, LV, RO. Eurostat will investigate the possibility to include an indicator on avoidable admission diabetes in 2015.	21 MS	2011	2013 data available in 2015
Q-11	In-hospital mortality following AMI		Number of people who die within 30 days of being admitted (including same day admissions) to hospital with an acute myocardial infarction (AMI).	OECD	ECHI 79 OECD biannual data for 21 MS: currently missing BG, EL, CY, LT, RO, HR, EE.	21 MS	2011	2013 data available in 2015
Q-12	In-hospital mortality following stroke		Number of people who die within 30 days of being admitted (including same day admissions) to hospital with a stroke.	OECD	ECHI 79 OECD biannual data for 20 MS: currently missing BG, EE, EL, CY, LT, RO, HR, LT.	21 MS	2011	2013 data available in 2015



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4.3. Context information: Resources

Resources have impact on both access and quality of healthcare, though no normative judgement is possible and therefore this dimension is to be highlighted as context information and to find use in the qualitative assessment.

In a paper by Tchouajet et al. (2012) it is proposed to divide resources into the following sub-categories: financial, human, technological, material and organizational.⁴⁶ The present paper loosely follows that typology and focuses on the first three categories.

Indicators selected from the EU social indicators portfolio

Financial resources are measured both by *total current health expenditure per capita* in purchasing power parity and by *total current spending on health in relation to GDP*. In addition, the framework looks at *Long-Term Care (LTC) expenditure*⁴⁷, as it is projected to be a considerable expense given the demographic ageing. It includes both medical and social expenditure.

Apart from the overall sum dedicated to health activities, it is important to look at how the overall amount is shared between various functions of health. This way, the framework looks at the *percentage of the total current health expenditure that goes to curative care, rehabilitative care, long-term nursing care, and prevention and public health services*. Strengthening and investing in public health services can help lowering costs for health and long-term care services as well as acute interventions in the future, whilst improving health.

Human resources are measured by the number of health professionals (*physicians* and *nurses/midwives*) per 100,000 inhabitants. There are concerns about the current and future availability of doctors and especially about their geographic distribution⁴⁸, as it affects access to and quality of care. Nurses have a pivotal role to play in delivery of health care, both in hospitals but also in out-patient and home settings. Due to population ageing, demand for nurses will increase, but also large cohorts of nurses will retire, thus possibly limiting the supply of workers in this health care profession.⁴⁹ Also due to intra EU mobility of health professionals, we can observe outflows of professionals from some countries further exacerbating staff shortage they are already facing.

Indicators for development

Technological resources are operationalized in the present framework by the number of computed tomography (*CT*) scanners, *magnetic resonance imaging (MRI) machines*⁵⁰, per

⁴⁶ As also suggested by Donabedian (1973, 1980, 1992)

⁴⁷ It is the sum of HC.3 Services of LTC + HC.R.1 Social Services of LTC in order to include both LTC within health care and within social care and improve comparability; also in the future the annual % change in spending on LTC can be considered.

⁴⁸ Ono, T. et al. (2014)

⁴⁹ OECD (2012)

⁵⁰ Limitations in the comparability of data exist, for example in Germany only data for hospital based MRI and CT units are available; in UK units in private establishments are not included



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100,000 inhabitants.⁵¹ These are the examples of new medical technologies that improve diagnosis and treatment. They are available both in hospitals, but also in ambulatory settings. Since technological progress in health tends to be a product rather than a process innovation and CT and MRI units are related to considerable investments, they tend to drive health spending, than produce savings.⁵² When interpreting the results, it has to be kept in mind that MRI and CTS units availability depends on policies of de-centralisation, geography and use of moving units in a given country.

The suggested resource (R) indicators are presented in tables 4a and 4b.

⁵¹ In the future "used capacity" of MRIs and CTs could be included, if data allows

⁵² Freeman R., Rothgang H. (2010)



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Table 4a: Health care system: resources – proposed context indicators selected from the EU social indicators portfolio

Code	Indicator	Context EU/NAT	Definition	Data source	Comments	EU data availability	Year (currently available)	Year (next update)
R-1	<u>Current expenditure on health care per capita (in pps)</u>	Context (NAT)	Current expenditure on health care' means the final consumption expenditure of resident units on health care goods and services, including the health care goods and services provided directly to individual persons as well as collective health care service.	Eurostat (Joint questionnaire with OECD/WHO)	OMC HC-P11 - annual data, currently missing - UK, IE, IT.	25 MS	2012, 2011 (LV)	2013 available in 2015
R-2	<u>Current expenditure on health care as % of GDP</u>	Context (NAT)	Current expenditure on health care' means the final consumption expenditure of resident units on health care goods and services, including the health care goods and services provided directly to individual persons as well as collective health care service.	Eurostat (Joint questionnaire with OECD/WHO)	OMC HC-P12, ECHI 77 - annual data, currently missing - UK, IE, IT.	25 MS	2012, 2011 (LV)	2013 available in 2015
R-3	<u>Total long-term care expenditure as % of GDP</u>	Context (NAT)	Expenditure on long-term nursing care (category HC.3 in SHA 2011) plus expenditure with administration and provision of social services in kind to assist living with disease and impairment (category HC.R.1 in SHA 2011) as a % of GDP.	Eurostat (Joint questionnaire with OECD/WHO)	OMC HC-P13 annual data, for HC.3 currently missing - UK, IE, IT.	HC.3: 25 MS HCR.1: 12 MS	2012, 2011 (LV)	2013 available in 2015



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Table 4a (continued): Health care system: resources – proposed context indicators selected from the EU social indicators portfolio

Code	Indicator	Context EU/NAT	Definition	Data source	Comments	EU data availability	Year (currently available)	Year (next update)
R-4	Expenditure on curative care as % of <u>current expenditure on health care</u>	Context (NAT)	Curative care' means the health care services during which the principal intent is to relieve symptoms or to reduce the severity of an illness or injury, or to protect against its exacerbation or complication that could threaten life or normal function.	Eurostat (Joint questionnaire with OECD/WHO)	OMC HC-C4 - annual data, current data missing from: DK, CY (2008), LV (2009), and no data for PT, SE, IE, IT, MT, UK.	19 MS	2012, 2011 (BG, LT, SI, SK)	2013 available in 2015
R-5	Expenditure on preventive care as a % of <u>current expenditure on health care</u>	Context (NAT)	Preventive care' means any measure that aims to avoid or reduce the number or the severity of injuries and diseases, their sequelae and complications. It is based on a health promotion strategy that involves a process to enable people to improve their health through the control over some of its immediate determinants. Interventions (both individual and collective) are included when their primary purpose is health promotion and if they occur before the diagnosis has been made.	Eurostat (Joint questionnaire with OECD/WHO)	OMC HC-C4 - annual data, current data missing from: DK (2010), CY (2008), LV (2009), and no data for IE, IT, MT, UK.	21 MS	2012, 2011 (BG, LT, PT, SI, SK)	2013 available in 2015
R-6	Expenditure on rehabilitative care as % of <u>current expenditure on health care</u>	Context (NAT)	Rehabilitative care means the services to stabilise, improve or restore impaired body functions and structures, compensate for the absence or loss of body functions and structures, improve activities and participation and prevent impairments, medical complications and risks.	Eurostat (Joint questionnaire with OECD/WHO)	OMC HC-C4 - annual data, current data missing from: DK, CY (2008), LV (2009), PT, SE, IE, IT, MT, UK.	19 MS	2012, 2011 (BG, LT, SI, SK)	2013 available in 2015
R-7	Expenditure on long-term nursing care as % of <u>current expenditure on health care</u>	Context (NAT)	Long-term nursing care is the long term medical and nursing care without personal care and assistant services that are consumed with the primary goal of alleviating pain and suffering and reducing or managing the deterioration in health status in patients with a degree of long-term dependency.	Eurostat (Joint questionnaire with OECD/WHO)	OMC HC-C4 - annual data, current data missing from: DK (2010), CY (2008), LV (2009), and no data for IE, IT, MT, UK.	21 MS	2012, 2011 (BG, LT, PT, SI, SK)	2013 available in 2015



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Table 4a (continued): Health care system: resources – proposed context indicators selected from the EU social indicators portfolio

Code	Indicator	Context EU/NAT	Definition	Data source	Comments	EU data availability	Year (currently available)	Year (next update)
R-8	Practising physicians or doctors	Context (NAT)	Total number of practising physicians (medical doctors) per 100 000 inhabitants.	Eurostat (Joint questionnaire with OECD/WHO)	OMC HC-C1, ECHI 63 - annual data; - some countries report only data on professionally active or licensed to practice physicians.	20 MS practising, 15 MS professionally active, 14 MS licensed to practice physicians	2012	2013 available in 2015
R-9	Practising and professionally active nurses and midwives	Context (NAT)	Total number of professional nurses and midwives per 100 000 inhabitants.	Eurostat (Joint questionnaire with OECD/WHO)	OMC HC-C2, ECHI 64 - annual data.	16 MS practising, 14 MS professionally active nurses and midwives	2012	2013 available in 2015



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Table 4b: Health care system: resources – proposed context indicators for development

Code	Indicator	Context EU/NAT	Definition	Data source	Comments	EU data availability	Year (currently available)	Year (next update)
R-10	MRI units	Context	Number of magnetic resonance imaging units provided by hospitals and ambulatory health care per 100 000 inhabitants.	Eurostat (Joint questionnaire with OECD/WHO)	ECHI 66 - annual data, currently missing BE, DK, DE, EL, PL, PT, SE.	18 MS	2012	2013 available in 2015
R-11	CTS units	Context	Number of computer tomography scanners provided by hospitals and ambulatory health care per 100 000 inhabitants.	Eurostat (Joint questionnaire with OECD/WHO)	ECHI 66 - annual data, currently missing BE, DK, DE, EL, HR, PL, PT.	18 MS	2012	2013 available in 2015



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4.4. Non-health care determinants

Non-health care determinants include factors outside the health care system. They comprise lifestyle choices and behaviours, environmental factors and external causes of death. They can be even more important determinants of the health status of a population than health care system determinants. As mentioned previously, in advanced economies, that have made the epidemiologic transition to non-communicable disease burden, lifestyle, external and socio-economic factors will explain most of the observed variation (90%) in outcome.⁵³

This section distinguishes between lifestyle factors, which include behaviour, and external factors.

Lifestyle factor indicators selected from the EU social indicators portfolio

This section relies largely on self-reported, subjective data. **Regular daily smoking, obesity and alcohol consumption**⁵⁴ do fall within the ambit of public health policy, but are also influenced by societal habits and perceptions. These indicators provide a proxy for both current and past unhealthy lifestyles. They can also provide an indicator for potential future pressures on the health care system as well as mortality, as they are risk factors of several chronic illnesses.

Lifestyle factor indicators for development

Fruit and vegetable consumption is also an important lifestyle determinant of health. Although, in the format that the data is currently collected by Eurostat, these constitute two separate indicators, for the needs of this exercise they will be merged and calculated to estimate the percentage of the population consuming 5 portions of vegetables or fruit a day, as recommended in the nutritional guidelines.

Physical activity is also an important element of prevention and could be considered along with the other lifestyle factors discussed above. EU Guidelines recommend at least 60 minutes per day of physical activity for children and young people, and a minimum of 30 minutes of exercise per day for adults⁵⁵. Along with fruit and vegetable consumption and the proportion of the population who are obese, this could be of value to policy-makers for the targeting of initiatives in the long run, and provide a more complete picture of lifestyle determinants for the purposes of the framework. New data for physical activity based on a revised question in EHIS wave 2 will be available from Eurostat as of 2016.

The indicators on fruit and vegetable consumption as well as on physical activity could also be relevant when taken together with obesity data. Moreover, when health system-related factors are mentioned (lifestyle factors) it should be stressed that there are considerable time lags at play between lifestyle behaviour and health outcome impacts. Consequences of this in terms of data availability should be considered as well.

⁵³ Schröder et al (2007), available at: <http://www.nejm.org/doi/full/10.1056/NEJMsa073350>

⁵⁴ Here risky single occasional drinking, or in other words binge drinking

⁵⁵ EU Physical Activity Guidelines, 2008



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As the risky behaviours display a social gradient, we propose to introduce a measure of the gap between people with top and bottom educational achievements. Furthermore, we propose a gender breakdown. Lastly, we look specifically at the age group 15-24, as it corresponds to the monitoring strategy of the Commission Recommendation on Investing in children - breaking the cycle of disadvantage.

As already acknowledged, there are more lifestyle factors at the individual level that affect one's health outcomes, such as age, disability, living conditions, employment status, family status and housing tenure. However, these are not yet included in the scope of the JAF Health.

External factor indicators for development

There are many other external non-lifestyle factors that have impact on health outcomes, for example transport accidents and environmental factors, such as air pollution, however they are not yet included in the framework.⁵⁶

For now, we are proposing *mortality due to external causes* with breakdown by gender. These are deaths due to suicide, accidents and violence including environmental events, circumstances and conditions as the cause of injury, poisoning and other adverse effects.⁵⁷ These have strong link with lifestyle factors, such as drinking or substance abuse, but also with wider socio-economic determinants of health.

The suggested non-health care determinants indicators for lifestyle (L) and external (E) factors are presented in tables 5a and 5b.

⁵⁶ Indicators for external non-lifestyle and environmental factors that have impact on health outcomes are proposed for development in the accompanying Progress Report on the review of the joint Assessment framework in the area of health systems (SPC/ISG/2015/01/2.1).

⁵⁷ Eurostat: Causes of death statistics, available at:
http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Causes_of_death_statistics



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Table 5a: Non-health care determinants – proposed main indicators selected from the EU social indicators portfolio

Code	Indicator	EU/NAT	Definition	Data source	Comments	EU data availability	Year (currently available)	Year (next update)
L-1	Regular daily smoking (total population 15+, 15-24, men, women, income quintile gap q1/q5)	EU (NAT in 2008)	Proportion of people reporting to smoke cigarettes daily.	Eurostat (EHIS)	OMC HC-S11, ECHI 44 (excluding indicator capturing income quintile gap); - EHIS: data available every 5 years; currently missing DK, IE, IT, LT, LU, NL, PT, FI, SE, UK, HR. Next data available in 2016 for year 2012 and 28 MS. - also possible every 3 years from the future EU-SILC to be tested in 2017; - Commission recommendation on "Investing in children" monitoring framework.	16 MS	2008	2014 data available in 2016
L-2	Obesity (total population 15+, 15-24, men, women, income quintile gap q1/q5)	EU (NAT in 2008)	Proportion of people who are obese, i.e. whose body mass index (BMI) is $\geq 30\text{kg/m}^2$.	Eurostat (EHIS)	ECHI 42, (excluding indicator capturing income quintile gap); - EHIS: data available every 5 years; currently missing DK, IE, IT, HR, FR, LT, LU, NL, PT, FI, SE, UK. Next data available in 2016 for year 2012 and 28 MS. - also possible every 3 years from the future EU-SILC to be tested in 2017; - Commission recommendation on "Investing in children" monitoring framework.	17 MS	2008	2014 data available in 2016



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Table 5b: Non-health care determinants – proposed main indicators for development



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Code	Indicator	EU/NAT	Definition	Data source	Comments	EU data availability	Year (currently available)	Year (next update)
L-3	Fruit consumption (total population 15+, 15-24, educational level gap between ISCED 0-2 and 5-6)		Proportion of people reporting to eat fruits (excluding juice) at least once a day.	Eurostat (EHIS)	ECHI 49 - EHIS: data available every 5 years; currently missing DK, DE, EE, IE, LT, LU, NL, PL, PT, FI, SE, UK, HR. Next data available in 2016 for year 2012 and 28 MS. - also possible every 3 years from the future EU-SILC to be tested in 2017; - proposal to link with vegetable consumption to determine "5 a day" possible only from 2014 EHIS.	15 MS	2008	2014 data available in 2016
L-4	Vegetable consumption (total population 15+, 15-24, educational level gap between ISCED 0-2 and 5-6)		Proportion of people reporting to eat vegetables (excluding potatoes and juice) at least once a day.	Eurostat (EHIS)	ECHI 50 - EHIS: data available every 5 years; currently missing DK, DE, EE, IE, LT, LU, NL, PL, PT, FI, SE, UK, HR. Next data available in 2016 for year 2012 and 28 MS. - also possible every 3 years from the future EU-SILC to be tested in 2017; - proposal to link with fruit consumption to determine "5 a day" possible only from 2014 EHIS.	15 MS	2008	2014 data available in 2016
L-5	Physical activity (total population 15+, 15-24, men, women, educational level gap between ISCED 0-2 and 5-6)		Percentage of a countries' population doing ≥ 150 minutes of at least moderate-intensity aerobic physical activity per week.	Eurostat (EHIS)	ECHI 52 - EHIS: data available every 5 years; Next data available in 2016 for year 2012 and 28 MS. - Eurostat does not currently disseminate any data on physical activity as the instrument measuring it changed between 2008 and 2014 EHIS waves and is therefore not recommended to use and compare data between the two waves. - also possible every 3 years from the future EU-SILC to be tested in 2017.			2014 data available in 2016
L-6	Risky single occasion drinking (total population 15+, 15-24, men, women, educational level gap between ISCED 0-2 and 5-6)		Proportion of people ingesting more than 60g of pure ethanol on a single occasion in the past 12 months.	Eurostat (EHIS)	ECHI 47 - Commission recommendation on "Investing in children" monitoring framework; - EHIS: data available every 5 years; - currently missing AT, DK, DE, EE, IE, IT, HR, FR, LT, LU, NL, PL, PT, FI, SE, UK. Next data available in 2016 for year 2012 and 28 MS.	12 MS	2008	2014 data available in 2016
E-1	External causes of death (total, men, women)		External causes of mortality V01-Y89 as accidents and violence including environmental events, circumstances and conditions as the cause of injury, poisoning, and other adverse effects (excluding road accidents).	Eurostat (COD)	Annual data, full coverage.	28 MS	2011	2012 data available in 2015



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4.5. Context information: Socio-economic situation

Relevant contextual data that affect the relation between the drivers and outcomes are provided. In the case of health, this part of the conceptual framework to find use in the qualitative assessment, provides contextual information that impacts on the health system's performance.

Population ageing drives the costs of health systems and poses a challenge to provision of quality care in a sustainable manner. The older one gets, the more chronic conditions emerge and the more health and long-term care one will consume. Therefore, the present framework takes into account the population structure, including variables on "*Share of population 65+*" and "*Share of population 80+*" and *old age dependency ratio* to see what is the potential care burden on people in the productive age.

Poverty and social exclusion are driving forces behind health inequalities. Therefore, apart from the *GDP per capita*, being a proxy of the relative standards of living in the country, we suggest to look at the "*At risk of poverty or social exclusion rate (AROPE)*". Lastly, as it was highlighted throughout the sections above, socio-economic status is a good predictor of health. Therefore, we are introducing to the framework a *percentage of population with low educational attainment*.

The suggested context information socio-economic situation (S) indicators are presented in tables 6a and 6b. **Except for the *old dependency ratio* and *AROPE* indicators, the proposed socio-economic context indicators are not selected from the EU social indicators portfolio and are therefore for development.**



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Table 6a: Contextual information: socio-economic situation – proposed context indicators selected from the EU social indicators portfolio

Code	Indicator	Context EU/NAT	Definition	Data source	Comments	EU data availability	Year (currently available)	Year (next update)
S-1	Old age dependency ratio	Context (EU)	Population 65 and over to population 15 to 64 years.	Eurostat (Demographic data)	OMC PN-C2, ECHI 1 annual data, full coverage.	28 MS	2013	2014 data available in 2015
S-2	At risk of poverty or social exclusion rate	Context (EU)	The sum of persons who are: at-risk-of-poverty or severely materially deprived or living in households with very low work intensity as a share of the total population.	Eurostat (EU-SILC)	OMC SI-P1 annual data, full coverage.	28 MS	2013	2014 data available in 2015

Table 6b: Contextual information: socio-economic situation – proposed context indicators for development



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Code	Indicator	Context EU/NAT	Definition	Data source	Comments	EU data availability	Year (currently available)	Year (next update)
S-3	Share of population 65+	Context	Population aged 65 and above as a percentage of the total population.	Eurostat (Demographic data)	ECHI 1 annual data, full coverage.	28 MS	2013	2014 data available in 2015
S-4	Share of population 80+	Context	Population aged 80 and above as a percentage of the total population.	Eurostat (Demographic data)	ECHI 1 annual data, full coverage.	28 MS	2013	2014 data available in 2015
S-5	Percentage of population with low educational attainment	Context	Percentage of population (25-64) with low educational attainment (ISCED 0-2).	Eurostat (LFS)	ECHI 6 annual data, full coverage.	28 MS	2013	2014 data available in 2015
S-6	GDP per capita	Context	GDP per capita in PPS per inhabitant.	Eurostat	annual data, full coverage.	28 MS	2013	2014 data available in 2015

5. ILLUSTRATION OF RESULTS

The aim of the JAF is to provide through a country profile chart an initial screening of areas where MS might be facing specific challenges. It allows for summary assessments to be made of the relative situation with regard to overall health outcomes and provide indications of what might be relevant underlying factors helping to explain these relative outcomes.

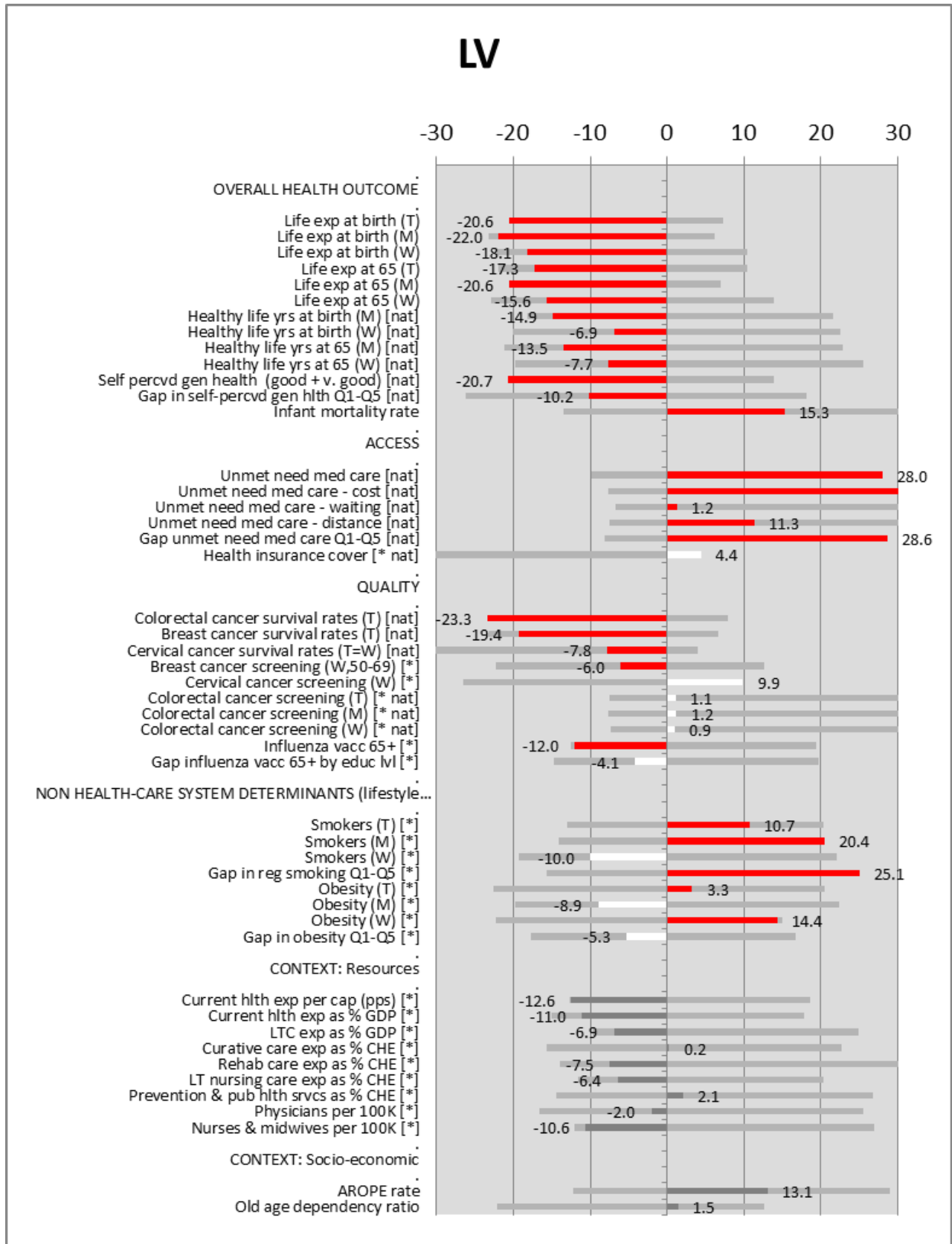
Indeed, as shown below in the examples for Spain and Latvia (see figures below), the JAF graphs provide an illustration of possible problem areas of health systems across the dimensions identified in the framework proposed. These two countries were chosen for illustrative purposes only, given also relatively high availability of data.

The white coloured bar indicates better than average results and the red coloured bar indicates worse than average results. Contextual information on resources and socio-economic situation are illustrated by the grey bars, given impossibility to assign normative judgement.

Furthermore, background bars for each indicator show the range of values for the indicator across Member States (i.e. the extremes of the light grey bars indicate the minimum and maximum values for that indicator).

On the indicator label, the presence of an asterisk (*) indicates that no EU-28 average is available for that indicator and that the reference point used for the average is an un-weighted average of the figures which are available. The presence of "nat" after the label name highlights that the indicator in question is a NAT indicator as currently defined in the EU social indicators portfolio. However, the visualisation of indicators with missing data observations for a large number of Member States, as well as the presentation of NAT indicators, should be regarded as work in progress and is suggested for further development by the ISG.

Figure 3: JAF output for Latvia



The JAF output for Latvia can be interpreted as follows:

Overall outcomes: Life expectancy is well below the EU average (and close to the worst of all Member States), as are the number of healthy life years. This in part reflects relatively high infant rates. The self-perceived level of general health among the population is well below average, and this can be explained only to a certain degree by the gap compared to the EU average in the self-perceived level of health between those on low and high incomes.

Access to healthcare: There are clear problems in access to health care, which reflects especially marked difficulties with regard to expense and travelling distance, together with very pronounced inequality in access to medical care.

Quality of health care service: There are relatively poor health quality outcomes in several areas. Breast cancer screening and survival rates, as well as influenza vaccination for the elderly are also well below the EU average.

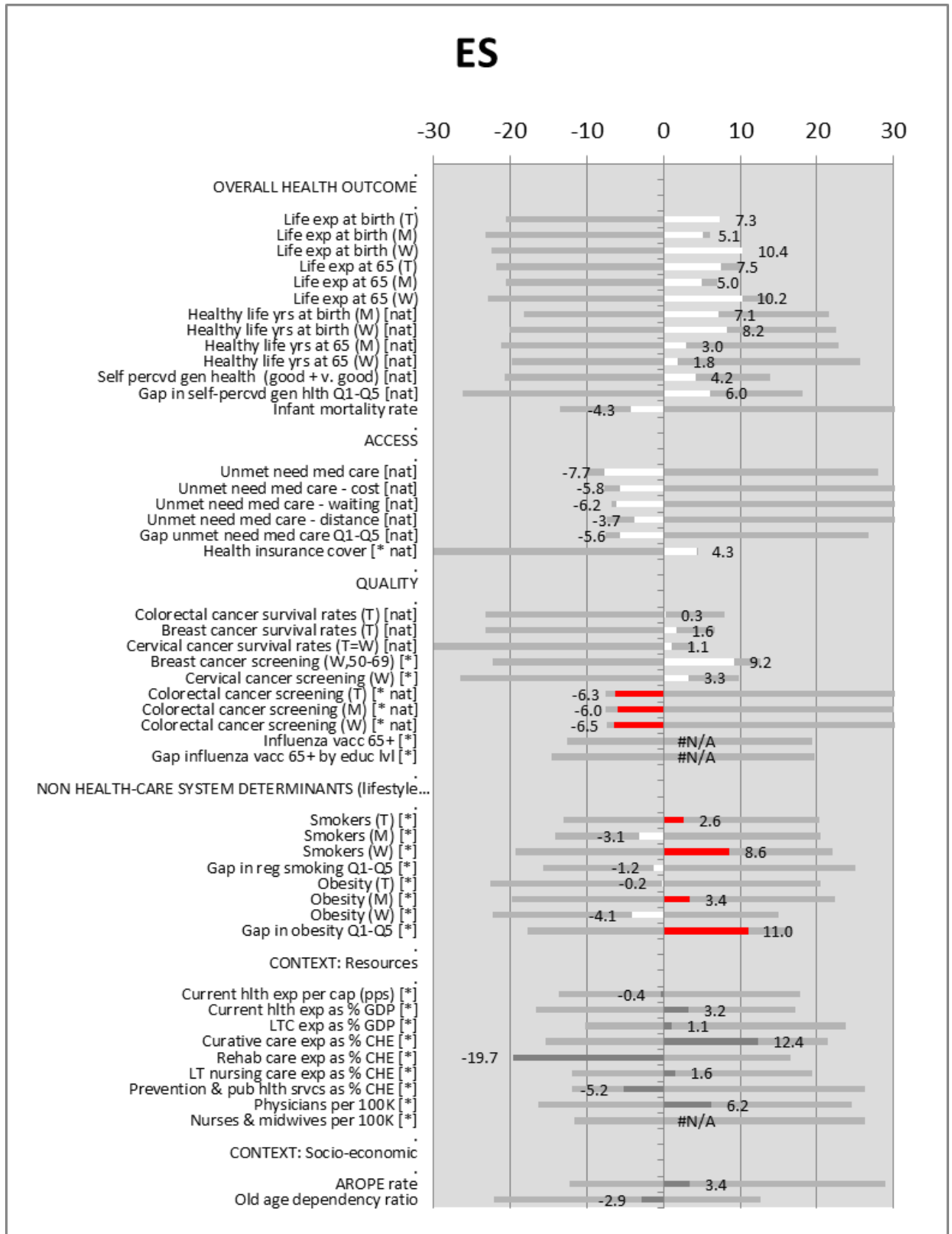
Non-health care determinants: Data on non-health determinants indicates relatively weak outcomes in relation to smoking among men and female obesity. Marked gaps exist with regard to smoking between different socio-economic groups.

Context information

Resources: Overall health expenditure (per capita and as a percentage of GDP) is relatively very low, especially on long term care, long term nursing care and rehabilitative care. Levels of medical staff are relatively low.

Socio-economic background: The old age dependency ratio is around the EU average. However, inequality is high, and the country suffers from a well above average risk of poverty or social exclusion.

Figure 4: JAF output for Spain



The JAF output for Spain can be interpreted as follows:

Overall outcomes: Health outcomes are very good in general. Life expectancy is noticeably above the EU average, as is the number of healthy life years, and this is clearly perceived as being the case among the general public.

Access to healthcare: Access to healthcare is better than the EU average (unmet need for medical care is below average) and reflects relatively better performance in all sub-components (expense, waiting time and distance) together with relatively low inequality in access (the lowest of any Member State).

Quality of health care service: There are several areas of relatively good health quality outcomes, as for example for screening services for breast cancer and cervical cancer. However, screening for colorectal cancer is below the EU average and near the worst across the EU.

Non-health care determinants: Outcomes for non-health determinants are rather mixed. Obesity among women is below average, while smoking among women is well above average. There are indications of notable gaps in population shares which are obese according to income levels.

Context information

Resources: Overall health expenditure (per capita and as a percentage of GDP) is slightly above average, but very low in certain areas, namely rehabilitative care (the lowest in the EU) and on prevention and public health services. There is a relatively large number of physicians relative to the size of the population.

Socio-economic background: The old age dependency ratio is slightly below the EU average. The relative income poverty though, as measured by the at risk of poverty rate, is above the EU average.

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ANNEX 1: SHORTLIST OF JAF HEALTH PROPOSED INDICATORS
(SELECTED FROM THE EU SOCIAL INDICATORS PORTFOLIO AND FOR DEVELOPMENT)

Code	ISG classification: EU/NAT/ for development	Indicator
		Overall Health Outcomes
H-1	EU	Life expectancy at birth and 65 (total population, women, men)
H-2	NAT	Healthy life years (HLY) at birth and 65 (women, men)
H-3	NAT	Self-perceived general health
H-4	NAT	Self-perceived general health - income quintile gap (q1/q5)
H-5	EU	Infant mortality rate (total)
H-6	for development	Child mortality, 1-14 (total)
H-7	for development	Potential years of life lost (total, by SES)
H-8a	for development	Amenable mortality
H-8b	for development	Preventable mortality
H-9	for development	Well-being (to include also income quintile gap)
H-10	for development	Mental Health
		Access
A-1	NAT	Self-reported unmet need for medical care (total by reason: cost, waiting time, distance)
A-2	NAT	Self-reported unmet need for medical care - income quintile gap (q1/q5 by reason: cost, waiting time, distance)
A-3	NAT	Share of population covered by health insurance
A-4	for development	Financial burden of out-of-pocket payment for health care
A-5	for development	Care utilisation (total, by SES)
A-6	for development	Household out-of-pocket payment for health care
		Quality
Q-1	NAT	Colorectal cancer survival rates (total)
Q-2	NAT	Breast cancer survival rates (total)
Q-3	NAT	Cervical cancer survival rates (total)
Q-4	EU	Breast cancer screening (women)
Q-5	EU	Cervical cancer screening (women)
Q-6	NAT	Colorectal cancer screening (total, men, women)
Q-7	EU	Vaccination coverage for children
Q-8	EU (NAT in 2008)	Influenza vaccination for 65+ (total, by educational level gap between ISCED 0-2 and 5-6)
Q-9	for development	Avoidable admission: respiratory diseases (asthma and COPD)
Q-10	for development	Avoidable admission: uncontrolled diabetes
Q-11	for development	In-hospital mortality following AMI
Q-12	for development	In-hospital mortality following stroke

SHORTLIST OF JAF HEALTH PROPOSED INDICATORS (CONTINUATION)

Code	ISG classification: EU/NAT/ for development	Indicator
Resources (contextual information)		
R-1	NAT	Current expenditure on health care per capita (in pps)
R-2	NAT	Current expenditure on health care as % of GDP
R-3	NAT	Total long-term care expenditure as % of GDP
R-4	NAT	Expenditure on curative care as % of current expenditure on health care
R-5	NAT	Expenditure on preventive care as a % of current expenditure on health care
R-6	NAT	Expenditure on rehabilitative care as % of current expenditure on health care
R-7	NAT	Expenditure on long-term nursing care as % of current expenditure on health care
R-8	NAT	Practicing physicians or doctors
R-9	NAT	Practicing and professionally active nurses and midwives
R-10	for development	MRI units
R-11	for development	CTS units
Non-health care determinants (lifestyle and external factors)		
L-1	EU (NAT in 2008)	Regular daily smoking (total population, 15-24, men, women, income quintile gap q1/q5)
L-2	EU (NAT in 2008)	Obesity (total population 15+, 15-24, men, women, income quintile gap q1/q5)
L-3	for development	Fruit consumption (total population 15+, 15-24, educational level gap between ISCED 0-2 and 5-6)
L-4	for development	Vegetable consumption (total population 15+, 15-24, educational level gap between ISCED 0-2 and 5-6)
L-5	for development	Physical activity (total population 15+, 15-24, men, women, educational level gap between ISCED 0-2 and 5-6)
L-6	for development	Risky single occasion drinking (total population 15+, 15-24, men, women, educational level gap between ISCED 0-2 and 5-6)
E-1	for development	External causes of death (total, men, women)
Socio-economic situation (contextual information)		
S-1	EU	Old age dependency ratio
S-2	EU	At risk of poverty or social exclusion rate
S-3	for development	Share of population 65+
S-4	for development	Share of population 80+
S-5	for development	Percentage of population with low educational attainment
S-6	for development	GDP per capita

ANNEX 2: ECHI DOCUMENTATION SHEETS