

Performance of the Belgian health system

Report 2012 - Synthesis



Introduction

Even though our era is often pejoratively associated with the cult of performance, it has to be said that, in the area of health and health care, it speaks for itself and is actually rather reassuring that we should continuously try to improve our performance. In fact, is there anyone who could possibly complain about a high-quality, effective, efficient, accessible and fair health system? How can we fault a health promotion system that effectively reduces health inequalities and ensures that health levels improve continually?

On the basis of 74 indicators, rigorously established by the researchers of the Belgian Health Care Knowledge Centre (KCE), the Scientific Institute of Public Health (IPH) and the National Institute for Health and Disability Insurance (NIHDI), the report “Performance of the Belgian Health System”¹ offers you a snapshot of this performance. The work of these researchers was made possible and was enriched thanks to the involvement of numerous experts from the academic world and civil society alike. Members of the administration and the world of politics have been following the production of this report every step of the way. We would like to thank everyone for their participation which has added credibility to the result and will make it more likely that its outcome will be taken on board by all the stakeholders.

We will let you discover the strengths of our system, such as our fellow citizens’ self-perceived health or the vaccination coverage for children, all efforts that must be commended and sustained, for yourself. However, it must also be recognised that certain areas such as the under-screening of certain cancers or their deferment for financial reasons require careful and increased attention. At that, a watchful eye will need to be kept on the numerous disparities between socio-economic or regional categories.

1 Vrijens F, Renard F, Jonckheer P, Van den Heede K, Desomer A, Van de Voorde C, Walckiers D, Dubois C, Camberlin C, Vlayen J, Van Oyen H, Léonard C, Meeus P. [Performance of the Belgian Health System. Report 2012. Health Services Research \(HSR\). Brussels: Belgian Health Care Knowledge Centre \(KCE\). 2012. KCE Report 196Cs. D/2012/10.273/118.](#)

In spite of all the care and rigour every indicator was established with, this report must nevertheless be interpreted with some caution. Some of the most recent data available, notably those obtained from surveys, were in fact already a couple of years old. Also the time it takes before the effects of public health interventions can be translated into figures must be taken into account. The administration and the political world have taken measures that should improve matters in areas such as health provision, adequacy of care or equity in health care. So, we will have to regularly get back to this document to check whether the pace at which we are progressing on the path towards performance is fast enough. More than likely, new data will need to be recorded, while certain indicators may need to be amended or replaced. In matters of health and health care, like in other areas of human activity, there is no such thing as sitting on one's laurels, as efficiency and equity will always be in a state of becoming.



Please find the [complete report](#) on the website of the Belgian Health Care Knowledge Centre, www.kce.fgov.be, under the heading "publications".

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I. Background, conceptual framework and objectives

1. Background

The first Belgian Health System Performance Assessment (HSPA) was published in June 2010 (see ref. 1 p. 72). The report was articulated around 2 main sections. First, the Belgian HSPA framework was constructed on the basis of international experiences, tailored to the Belgian context. Second, a core set of 55 indicators was initially selected, of which 40 could eventually be measured. Strengths, weaknesses, evolution over time and proposed actions were discussed.

What is a Health System Performance Assessment (HSPA)?

A HSPA is a country-owned process that allows the health system to be assessed holistically, a “health check” of the entire health system. It is based on statistical indicators which provide “signals”, aiming to contribute to the strategic planning of the health system. Each HSPA is developed along the lines of a strategic framework that is specific to the country (see ref. 2 p. 72).

After the publication of this first report, the commissioners of the Belgian HSPA requested the project to be continued, aiming at a systematic evaluation of the Belgian Health System. The commissioners also requested to enrich the set of indicators with indicators in specific domains: health promotion, mental healthcare, general medicine, long-term care and end-of-life care, as those were insufficiently covered in the first report. Lastly, three dimensions (i.e. continuity of care, patient centeredness and equity) were considered to be insufficiently represented, and new indicators had to be proposed to assess these dimensions.

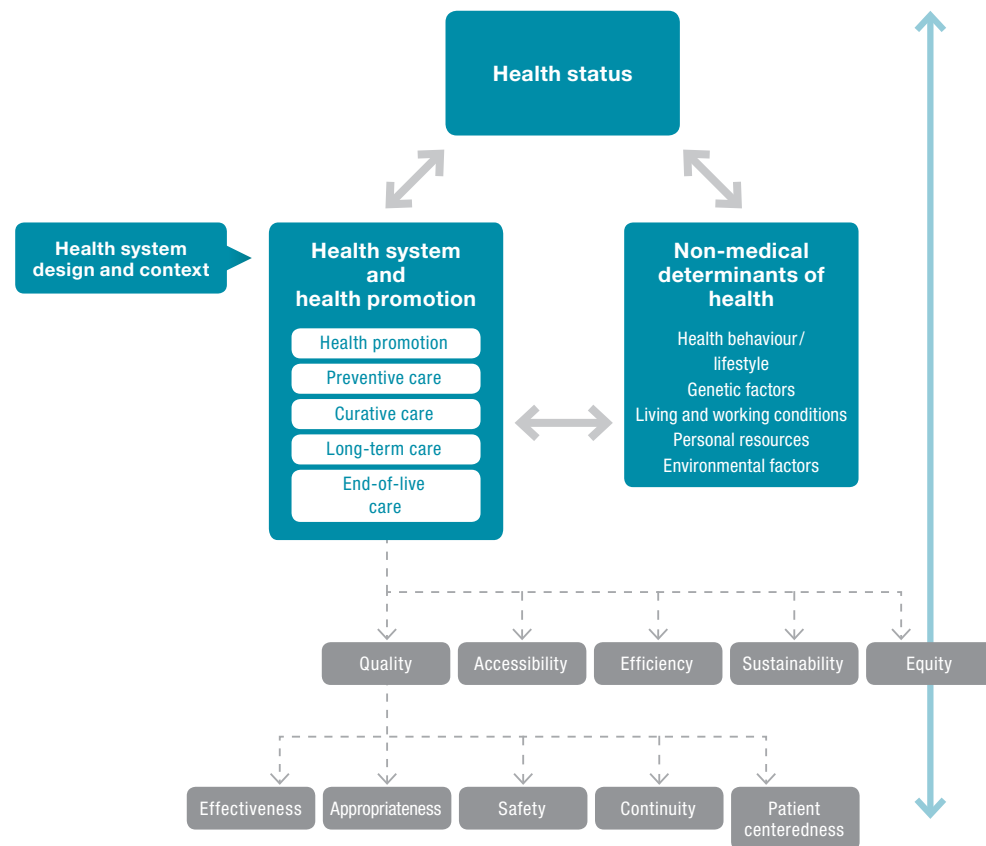
The Belgian Health System Performance Report 2012 presents the result of this work.

The Tallinn Charter (2008), an international commitment to measure the performance of European health systems

In June 2008, the 53 Ministers of Health from the countries belonging to the European region of the World Health Organisation (WHO) signed “The Tallinn Charter on Health Systems for Health and Wealth”. Of the seven commitments signed, the third is related to health system performance: “the member states commit to promote transparency and be accountable for health systems performance to achieve measurable results” (see ref. 3 p. 72).

2. Conceptual framework to evaluate the performance of the Belgian health system

Figure 1 - Conceptual framework to evaluate the performance of the Belgian health system²



² In this report, there is no specific chapter on non-medical determinants of health indicators. Indicators of lifestyle are presented in the chapter on health promotion.

3. Objectives of this report

Systematic evaluation of health system performance is an ongoing process, with the publication of HSPA reports as important milestones. Strategic objectives can be defined as the objectives of the former, ongoing process. These have to be differentiated from the specific objectives and operational sub-objectives of the present report.

a. Strategic objectives of the Health System Performance Assessment process

The HSPA process pursues three strategic objectives:

1. To inform the health authorities of the performance of the health system and to be a support for policy planning
2. To provide a transparent and accountable view of the Belgian health system performance, in accordance with the commitment made in the Tallinn Charter
3. On the long-term, to monitor the health system performance over time.

b. Overall and operational objectives of the 2012 report

To propose and measure a set of indicators covering all domains and chosen dimensions of our health system, while keeping the number of indicators manageable (in this report, 74 indicators).

Four operational objectives have been defined:

1. To review the core set of 55 indicators of the previous report, with a special focus on the 11 indicators for which there were no data in 2010³

³ Number of practising nurses; additional-illness related costs for chronically ill people; prescription according to guidelines; colorectal cancer screening; decayed, missing, filled teeth at age 12; cardiovascular screening in individuals aged 45-75; 5 year survival rate (breast, colon, cervix); premature mortality; incidence of pressure ulcers in long-term care facilities and for individuals at risk.

2. To enrich the core set with indicators from the following domains: health promotion, general medicine, mental health, long-term care, end-of-life care; to add indicators on patient-centeredness and continuity of care (two sub-dimensions of quality); and, finally, to propose indicators on equity in the health system
3. To measure the selected indicators, when possible, or to identify gaps in the availability of data
4. To interpret the results in order to provide a global evaluation of the performance of the Belgian health system by means of several criteria, including an international benchmarking when appropriate.

The Belgian Health System Performance Report is a national monitoring report in which Belgium is also compared internationally. By means of 74 indicators, the Belgian Health System Performance Report attempts to monitor the accessibility, quality, efficiency, sustainability and equity of the Belgian health system, thus to serve as a source of information for the different policy makers competent for health and health promotion.

II. Strengths and weaknesses of the Belgian health system


1. How to read the synoptic tables presenting the results?

The results of the 74 indicators are discussed below, by domain and/or dimension. A specific chapter is dedicated to health promotion.

These synoptic tables contain the following information:

- First, a pictogram shows, whenever possible, a global evaluation of the results of the indicator, based on the integration of several criteria: value at a national level versus national or international objectives when they exist or versus international benchmarks; trends over time; regional or socio-economic disparities. This global evaluation has not been possible for all indicators.
- In the column “Belgium”, the value of the indicator for Belgium is compared to the results of the countries of the EU-15⁴ (international benchmarking), and rendered with a colour code.
- The next column identifies the year of the most recent results available for Belgium. This is important information for policy makers, e.g. to avoid decisions based on outdated data and to encourage more recent data collection if needed.
- Next, a rough trend over time is presented (increase, decrease, and stable), when possible, over the last five available years. There is no evaluation of the magnitude or clinical importance of the changes.

⁴ The term EU-15 refers to the 15 Member States of the European Union as of December 31, 2003, before the new Member States joined the EU. These 15 Member States are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.







- The last columns present subgroup analyses (when appropriate, and when data are available): by gender, socioeconomic position (low or high)⁵ and by region (Flanders, Wallonia and Brussels). For these subgroup analyses, colours help the reader to appreciate the size of the relative differences. With respect to the regional comparison, the specific context of the Brussels Region has to be kept in mind: indeed, the Brussels region only consists of a single large urban area, while the other two regions consist of a mix of urban, suburban and rural environments.
- Finally, areas where additional research is needed are indicated with an .

Source of Data

Maximum use has been made of routinely available data (e.g. administrative databases, national registries or repeated surveys): the hospital administrative discharge data (RHM - MZG), the EPS (échantillon permanent - permanente steekproef), databases from the RIZIV – INAMI (doc N, Pharmanet), the Belgian Cancer Registry, the registry of hospital-acquired infections, the Health Interview Survey (HIS), vaccination surveys and the database of the “Direction générale Statistique et Information économique- Algemene Directie Statistiek en Economische informatieve” (DGSIE-ADSEI).

⁵ Depending on the source of data, socioeconomic status is based either on the education level, or on the entitlement to increased reimbursement of healthcare expenses.

Legend for the synoptic tables

Global evaluation		International comparison (EU-15) Belgium is situated ¹ in the group of countries with:	Relative risks by gender, socioeconomic status and region
	Very bad results	the worst results	Very large differences between groups: results are at least twice as bad or at least half as good in the comparison group than in reference group ²
	Bad results	results worse than average	Large differences between groups: results are at least 50% worse or better
	Average results	average results	Moderate differences between groups: results are between 20% and 50% worse or better
	Good results	results better than average	Small or no differences between groups: results are at maximum 20% worse or better.
	Very good results, all criteria satisfied	the best results	Characteristic not pertinent for this indicator
	More data/research is needed		Data non available

¹ Quintiles are calculated based on the results of all countries.

² Reference group: the higher socioeconomic status, the gender group (male/female) with the best results, the region (Wallonia, Flanders, Brussels) with best results.

Fictive examples: Twice as bad: 20% smokers in low socioeconomic group versus 10% smokers in high socioeconomic group OR Half as good: 13% healthy nutrition in low socioeconomic group versus 26% in high socioeconomic group.

2. Health status

We describe 4 global health status indicators which can be seen as general and ultimate outcomes of the health system/health promotion interventions, beside all other determinants of health.

The four indicators show a positive evolution over time (Table 1). The result ranks low for life expectancy as compared to the EU-15 average (0.7 year below the EU-15 average), while health expectancy (defined as the remaining disability-free years lived from a particular age) and infant mortality ranks at an intermediate position. The percentage of people perceiving their health as (at least) good ranks higher than the EU-15 average. Large differences are observed between men and women, except for health expectancy at 25 years. The latter live longer than men but with more years of activity limitation, and they perceive their health as being less good. All parameters are worse for lower socioeconomic groups. As to the regions, there are better outcomes in Flanders, except for infant mortality.

Table 1 - Indicators assessing the global health status

Indicator	Global	Belgium	Most recent data	Trend over time	M	F	Socio Low	Socio High	Flanders	Wallonia	Brussels
Life expectancy (years)	☹️	80.0	2010	increase	77.4	82.6	M: 47.6 ¹ F: 54.0	M: 55.0 F: 59.9	80.9	78.5	80.0
Health expectancy (at 25 years)	☹️	41.0 ²	2008	increase	41.3	41.2	M: 27.7 F: 28.9	M: 46.3 F: 47.1	M: 43.7 F: 42.3	M: 37.4 F: 39.1	M: 38.5 F: 40.6
Self-perceived health (% in good or very good health)	😊	76.8	2008	increase	79.5	74.3	57.4	85.7	78.6	73.7	74.3
Infant mortality rate (number of deaths/1,000 live births)	☹️	3.5	2010	decrease	4.2	3.4			4.0	3.1	4.6

¹ Life expectancies by socioeconomic status refer to life expectancies at 25 years old.

² International comparison is based on health expectancy at birth.

³ Colour coding for socio-demographic differences in life expectancy and health expectancy is not based on the size of relative risk (as for all other indicators), but on the size of the absolute differences: light orange (1 to 2 years differences), dark orange (2 to 6 years difference), red (more than 6 years difference).

3. Accessibility

Accessibility is defined as the ease with which health services are reached in terms of physical access (geographical distribution), cost, time, and availability of qualified personnel (see ref. 4 p. 72). Accessibility of a health system is a prerequisite of a high-quality and efficient health system.

Thirteen of the 74 indicators assess the accessibility of the healthcare system and are grouped into different themes: healthcare workforce available, financial accessibility, coverage of preventive measures, accessibility of residential care for older persons, availability of informal carers for older persons and timeliness of palliative care at the end of the life.

Workforce available: practising physicians and nurses

A lot of effort has been put into the improvement of the estimate of the available workforce (practising physicians and nurses) in Belgium. This is acknowledged by the addition of these two indicators for which there were no complete results in the previous report. However, these indicators alone do not allow assessing whether this workforce is sufficient to meet the population health needs.

Financial Accessibility

Despite a universal insurance coverage and the existence of many social safety nets (maximum billing, OMNIO, Special Solidarity Fund), 14% of households declared that they had to postpone some healthcare (medical care, surgery, drugs, glasses or lenses, mental healthcare) due to financial reasons, and this percentage has been increasing since the end of the nineties. Moreover, patient out-of-pocket expenses represent 19% of total health expenditure, which is substantially higher than the EU-15 average of 15%.

Coverage of preventive measures

With regard to the coverage of preventive measures, Belgium can certainly perform better.

Coverage of breast cancer screening (60%) is quite low compared to the EU-15 average (68.3%). This proportion remained stable, despite the existence of an organized breast cancer screening programme since 2002. The latter accounts for only half of the women screened. Moreover, differences between regions are striking, raising questions about the efficiency of the program.

The coverage of cervical cancer screening (62%) shows less disparity between regions. The results hover around the EU-15 average, but remain mediocre with regards to the commonly accepted European objective of 80%. The coverage also remains stable over time.

No data are presented for the coverage of colon cancer screening, as it is too early to evaluate the new program in the French Community.

For the influenza vaccination of older persons, the WHO target (75%) is not met and coverage is only very slowly increasing. For the vaccination of infants, Belgium performs well.

Accessibility of long-term care

The number of beds in residential care facilities has remained constant over the past decade, at 70 beds per 1000 persons of 65 and over. Overall, it is much higher in Wallonia and Brussels than in Flanders.

Informal caregivers, defined as people providing assistance with basic activities of daily living (ADL) for at least one hour per week, are an important component in the long-term care process (see ref. 5 p. 72). The percentage of the population aged 50 and older being an informal caregiver varied from 8% in Sweden to 16.2% in Italy. The Belgian figure of 12.1% is slightly higher than the overall average of the OECD-countries (11.7%). It has to be contextualized because it depends on the way of living, societal values and the presence or not of specific facilitating measure to stay at home.

As there are currently no data on patient needs, these two indicators are still insufficient to evaluate the accessibility of long-term care.

Timeliness in palliative care

The start of palliative care is sometimes delayed until patients are in terminal phase. This can denote either problems of accessibility of end-of-life care, or the fact that the decision to start palliative care was taken too late. In 20% of the cases, patients died within the week of application for the palliative care lump sum at their sickness fund, which seems to indicate a rather late onset. More data are needed on this indicator (evolution over time, international comparison).

Table 2 - Indicators assessing accessibility of healthcare												
	Indicator	Global	Belgium	Most recent data	Trend over time	M	F	Socio Low	Socio High	Flanders	Wallonia	Brussels
Workforce	Number (per 1000 population) of:	▲										
	- practising physicians		2.9	2010	stable							
	- practising nurses		9.9 ¹	2009								
Financial accessibility	Health insurance status of the population (%)	☹	99.0	2010	stable							
	Co-payments and out-of-pocket expenditures (% of total health expenditures)		19.4	2010	stable							
	Delayed contacts with health services because of financial reasons (%)		14	2008	increase			27.0	4.0	11.0	14.0	26.0

¹ OECD data not comparable enough.

Table 2 - Indicators assessing accessibility of healthcare (continuation)												
	Indicator	Global	Belgium	Most recent data	Trend over time	M	F	Socio Low	Socio High	Flanders	Wallonia	Brussels
Coverage preventive measures	Cancer screening	☹️										
	- Breast (% women aged 50-69)		60.1	2010	stable			48.6	62.9	64.9	55.3	51.9
	- Cervix (% women aged 25-64)		61.8	2010	stable			48.9	64.2	61.0	64.6	63.6
	Vaccination coverage children	😊										
	-% DTP-Hib (3)		97.9	2009	increase					98.3	96.9	98.6
	-% MMR (1)		94.5	2009	increase					96.3	92.4	91.1
	Influenza vaccination (% of the 65+)	😐	65.0 ²	2009	increase			63.5	46.3	65.8	60.9	59.2
Long-term care	Number of beds in nursing and residential facilities (per 1,000 pop aged 65+)	⚠️	70.3 ³	2011	stable					58	83	101
	Informal caregivers (% of population aged 50+)		12.1	2007								
Timeliness of palliative care	Deaths within one week after start of palliative care service (%)	⚠️	(20.0) ⁴	2006								

² National values based on HIS, socio economic disparities based on EPS.
³ Value and international comparison based on data 2010.
⁴ No national data, value based on one single study from Christian Sickness Fund.
DTP-Hib (3) Diphtheria-Tetanus-Pertussis-Haemophilus Influenzae B (3rd dose-coverage);
MMR (1) Measles-Mumps-Rubella (first dose).

4. Quality of care

Quality is defined as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge" (see ref. 6 p. 72). It is further subdivided into 5 sub-dimensions: effectiveness, appropriateness, safety, continuity of care and patient-centeredness.

a. Effectiveness

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

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

Relative survival after breast or colorectal cancer is good compared to other European countries. The evolution of survival data is currently not available.

Hospital admission for asthma, an indicator of the poor effectiveness of ambulatory services, shows admission rates slightly above the EU-15 average (and thus less good in terms of efficacy).

With regard to the indicators of effectiveness in mental healthcare, we observe extremely high suicide rates compared to other European countries. However, suicide depends also of personal and societal factors, and is thus only an indirect indicator of the efficacy of mental healthcare. Nevertheless, the results indicate that concerted action is required to decrease suicide rates in Belgium. The second indicator, the employment ratio of persons with mental health disorders compared to the employment rate of persons with other disabilities, is difficult to interpret and shows the necessity to collect more data. The last indicator, the percentage of involuntary committals among psychiatric hospitalisations shows an increase over time, with variations across regions.

The high percentage in Brussels should be interpreted with caution (as these disparities could be more urban than regional).

Table 3 - Indicators assessing effectiveness of care												
	Indicator	Global	Belgium	Most recent data	Trend over time	M	F	Socio Low	Socio High	Flanders	Wallonia	Brussels
Curative care	5-years relative survival rate	😊										
	- breast cancer		88.0	2008 ²						87.6	88.8	88.0
	- cervix cancer		69.8	2008 ²						70.6	69.1	67.7
	- colon cancer	M : 62.3 ¹ F : 64.6	2008 ²		62.3	64.6			M : 62.5 F : 64.5	M : 62.5 F : 64.9	M : 59.9 F : 64.3	
	Hospital admissions for asthma (/100,000 pop aged 15+)	😞	48.4 ³	2009 ²	stable	28	52					
Mental health	Suicide rate (number /100,000 pop)	⚠️	18.6	2008 ⁴	stable	28	10			17	24	14
	Employment ratio of people with mental health disorder ⁵		0.7	2002 ⁶								
	Involuntary committals (% of all psychiatric hospitalizations)		8	2009	increase					8	7	14

¹ Results for colorectal cancer in OECD Health Data for Belgium.
² Last data available for Belgium in OECD Health Data: 2004 (this was the basis of the international comparison).
³ This is the result from OECD Health Data for Belgium, after age-adjustment. Rate for Belgium without adjustment is 40/100 000.
⁴ Last data available in OECD Health Data for Belgium: 2005 (this was the basis of the international comparison);
⁵ Ratio of employment rate of people with mental health disorder to employment rate of all people with disabilities (source European Labour Force Study 2002).
⁶ Results from last EU Labour Force Survey.

b. Appropriateness

Appropriateness can be defined as “the degree to which provided healthcare is relevant to the clinical needs, given the current best evidence”.

The link between effectiveness and appropriateness reflects the link between outcomes and processes.

Eight indicators were selected to measure the appropriateness of care, and they show in general bad results, especially for the indicators related to inappropriate breast cancer screening (not in target population) or the compliance with guidelines (for antibiotics or for follow-up of diabetic patients).

Caesarean section rate shows an increasing trend and a high variability between hospitals.

Two indicators describe the consumption of antidepressants and antipsychotics in the general population, and show that the consumption, above EU-15 average, is increasing.

Finally, one indicator of the aggressiveness of the end-of-life care, the percentage of cancer patients receiving chemotherapy in the last two weeks of their life, has been measured, but these data are difficult to interpret without any norms, benchmarking or trends over time.

Table 4 - Indicators assessing appropriateness of care												
Indicator	Global	Belgium	Most recent data	Trend over time	M	F	Socio Low	Socio High	Flanders	Wallonia	Brussels	
Mammograms outside target group (%)	☹️											
- Women aged 40-49 years old		35.5	2010	stable			28.6	36.6	28.6	46.6	47.7	
- Women aged 71-79 years old		20.8	2010	increase			16.2	23.2	16.4	27.7	31.2	
Antibiotics (% amoxicilline compared to amoxyclav)	☹️	44.9	2008	stable	46.4	51.1	44.4	49.4	46.0	42.8	47.1	
Appropriate follow up of adult diabetic patients (%) ²	☹️	54	2008	stable	54	55	48	58	57	52	48	
Caesarean sections (per 1,000 live births)	☹️	193	2009	increase								
Prescription of (average daily quantity/1,000 pop)	⚠️											
- Antidepressants		68.4	2010	increase	43.1	92.8			60.6	85.8	57.1	
- Antipsychotics		10.5	2010	increase	10.8	10.3			9.6	11.9	11.7	
Cancer patients receiving chemotherapy in the last 14 days of life (%)	⚠️	(12%/ 23%) ¹	2005									

¹ Of those who died at home/of those who died in hospital, no national data. values based on one single study from Christian Sickness Fund.

² Adult diabetes patients with regular retinal exams and blood tests.

c. Safety

Safety can be defined as “the degree to which the system does not harm to the patient”.

Six indicators evaluate the safety of care, and show moderate results: still high exposure to medical radiation, but there seems to be a decrease in 2011; decreases in hospital-acquired MRSA; decrease in hospital mortality after hip fracture; and stable incidences of postoperative sepsis and prescription of anticholinergic antidepressants to older persons. Only the incidence of pressure ulcers of hospitalized patients is increasing.

Indicator	Global	Belgium	Most recent data	Trend over time	M	F	Socio Low	Socio High	Flanders	Wallonia	Brussels
Medical radiation exposure of the Belgian population (MSv/capita)	☹️	2.2	2011	small decrease in 2011							
Incidence of hospital-acquired MRSA infections (/1,000 admissions)	😞	1.5	2010	decrease					1.2	2.2	1
Incidence of postoperative sepsis (/100,000 discharges)	😞	1,224	2007	stable							
Incidence of pressure ulcers in hospitals (%)	😞 ⚠️	16.8	2007	increase							
In-hospital mortality after hip fracture (%)	😞	6.3	2007	decrease	1.84 ¹						
Patients prescribed anticholinergic antidepressant drug (% of patients aged 65+ on antidepressants)	😞	14	2010	stable	13	14			17	11	10

¹ OR Odds Ratio.

d. Continuity of Care

Continuity of care is a concept that encompasses different dimensions, such as the continuity in information between providers, the planning of contacts with different health providers, the relational aspect of the patient-GP contacts or the coordination between providers or organisations. The current set of 7 indicators allows drawing conclusions on each of these dimensions, which is a real improvement compared to the previous performance report.

Contrary to well established indicators on health status or on effectiveness of care described above, it is very difficult to compare the results of coordination of care in Belgium to those of other European countries. Some indicators are very specific to our healthcare system (global medical record, multidisciplinary team meeting- “consultation multidisciplinaire en oncologie – multidisciplinair oncologisch consult” (MOC – COM)). Other indicators are well described in scientific literature, such as the Usual Provider of Care index (UPC)⁶, but not many countries have the proper national databases of individual patient data required to measure it.

Only one result, the UPC index, is considered as positive, and suggests a good quality relationship with the usual GP. Moderate results are found for contact with GP after hospitalisation and discussion at MOC – COM. Negative results concern the use of global medical record and the readmissions in psychiatric hospital. This latter is the only one that is currently collected by the OECD and it focuses specifically on mental health.

⁶ UPC, the Usual Provider of Care index, is the proportion of contacts with the usual GP of a patient; 1 indicates that the patient has always seen the same GP; the indicator presents the percentage of patients who had a UPC of at least 0.75; i.e. who had at least 3 contacts on 4 with their usual GP.

Table 6 - Indicators assessing continuity and coordination of care												
Indicator	Global	Belgium	Most recent data	Trend over time	M	F	Socio Low	Socio High	Flanders	Wallonia	Brussels	
Patients with a global medical record (%)	☹️	47	2010	increase	42	50	54	44	58	32	29	
Patients with cancer discussed at the multi-disciplinary team meeting (%)	😐	68.8	2008	increase					73.8	62.7	55.7	
GP encounter within the week after hospital discharge (% patient aged 65+)	😐	58.4	2009	stable	55.4	60.8	64.2	54.6	60.6	57.8	42.5	
Proportion of contacts with the usual GP (%)(UPC ³ index)	😊	71.4	2010	stable	72.1	71.2	76.7	70.5	70.8	74.4	65.9	
Readmission within 30 days in the same psychiatric hospital (%)	☹️											
- diagnosis of schizophrenia		20.2	2009 ¹	increase					25.2	17.2	10.2	
- diagnosis of bipolar disorder		15.6	2009 ¹	stable					19.7	13.4	7.1	
Patients having a contact with their GP during the last week of their life (%)	⚠️	(72%) ²	2005									

¹ Those are the last national data, while the last OECD data for Belgium date from 2007.

² 72% of persons dying at home have seen a GP during the last week of life (no national data, values based on one single study from Christian Sickness Fund).

³ UPC, the Usual Provider of Care index, is the proportion of contacts with the usual GP of a patient; 1 indicates that the patient has always seen the same GP; the indicator presents the percentage of patients who had a UPC of at least 0.75; i.e. who had at least 3 contacts on 4 with their usual GP.

e. Patient-Centeredness

Patient-centeredness is defined as “providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions”. The previous performance report contained no indicator assessing patient-centeredness. After a thorough search for indicators and data, only three indicators can be presented. This reflects the fact that there is currently a real lack of data, and the few measurable indicators only provide fragmented information of a complex subject.

Results show a general good satisfaction with different healthcare services. Only one study could provide data on the central issue of control of pain. Belgium performs relatively poor compared to other countries. Finally, one indicator on the place of death shows a positive trend over time (fewer patients die in the hospital) but with large differences by socioeconomic status.

Table 7 - Indicators assessing patient-centeredness of care

Indicator	Global	Belgium	Most recent data	Trend over time	M	F	Socio Low	Socio High	Flanders	Wallonia	Brussels
Satisfaction with healthcare services (% good or very good)	😊😊	>90% ²	2008		no difference		no difference		higher	lower	lowest
Pain always controlled during hospitalization (% of patients)	⚠️	(41.0) ³	2009								
Persons dying in their usual place of residence (%)	😞	(45.1) ¹	2007	increase			⁴		45.1 ¹		45.1 ¹

¹ National data are not yet available. Results for Flanders and Brussels are reported together.

² The satisfaction level is above 90% for contacts with GP, dentists, specialists and home care services. Only for hospitals the satisfaction level is a bit lower (87%).

³ Results from one single study only in RN4cast project.

⁴ Based on study of Christian Sickness Fund and other publications.

5. Efficiency of the healthcare system

Efficiency is defined as “the degree to which the right level of resources (i.e. money, time and personnel, called input) is found for the system (macro-level) and is ensuring that these resources are used to yield maximum benefits or results (called output)” (see ref. 4 and 7 p. 72).

Three indicators have been selected to evaluate the efficiency of the healthcare system. As in other European countries, the trend in Belgium is towards a more efficient use of care services, as the three indicators show positive evolutions over time: increases in prescription of low-cost drug, increases in use of one-day surgical care, and decreases in length of stay for a normal delivery (which is a more comparable indicator between countries than total average length of stay), but still higher than the EU-15 average.

Other indicators analysed in this report can also give indications on the efficiency of the system. The increase of the number of patients with a global medical record, for example, may lead to a reduction of test duplication. Other indicators show less positive trends. For instance, the fact that half of breast cancer screening occurs outside the national program raises questions on the efficiency. Unexplained variability in health interventions can also be a proxy of a lack of appropriateness, which is directly related to efficiency. This has been shown for caesarean sections of instance.

Table 8 - Indicators assessing efficiency of care

Indicator	Global	Belgium	Most recent data	Trend over time	M	F	Socio Low	Socio High	Flanders	Wallonia	Brussels
Surgical day, case (%)	😊	46.2	2008	increase							
Average length of stay for normal delivery (days)	😞	4.3	2008	decrease							
Prescription of ambulatory low-cost medications (% DDD on total)	😊	46.0	2010	increase					46.2	45.9	45.3
Other indicators discussed in the appropriateness section	😞 🚩										

DDD = Defined Daily Dose.

6. Sustainability

Sustainability is defined as the system's capacity:

- To provide and maintain infrastructure such as workforce (e.g. through education and training, facilities and equipment)
- To be innovative
- To stay durably financed by collective receipts
- To be responsive to emerging needs.

For all four elements of the definition, specific indicators were selected. The last indicator, total health expenditures, is a generic indicator of financial sustainability.

Results show a mix of negative results (poor capacity of the system to replace the cohort of GPs getting older and about to reach retirement), intermediate results (acute-care bed days per inhabitant; insufficient utilization of electronic medical file by GPs), and indicators which cannot be interpreted without data on needs (nursing graduates). Expressed as a percentage of the GDP, total health expenditures represented 10.5% in 2010. In absolute terms, this amount was 27.6 billions EUR in 2003 and 37.3 billions EUR in 2010.

Table 9 - Indicators assessing the sustainability of the health system						
Indicator	Global	Belgium	Most recent data	Trend over time	Dutch speaking ¹	French speaking ¹
% Medical graduates becoming GPs	☹️	30.1	2009	decrease	29.2	31.0
Mean age GP		51.4	2009	increase	51	52
Nursing graduates (per 1,000 population) ²	⬆️ R	41.7	2010	stable		
% of the GPs using an electronic medical file	😊 ⬆️ R	74.0	2010	increase	83.7	62.5
Acute-care bed days (number of bed-days per capita) ³	😊	1.2	2009	stable		
Total Health Expenditures (% of GDP)		10.5	2010	increase		

¹ For this series of indicators, data are not available per region, but per language (French or Dutch speaking).
² This indicator has to be interpreted together with the indicator on the density of practising nurses (in section on accessibility).
³ This indicator has to be interpreted together with the indicator on the percentage of surgical day-cases (in section on efficiency).
 GDP Gross Domestic Product.

7. Health Promotion

For several reasons, it has not been possible to show a complete overview of the health promotion performance within the scope of this work:

1. Health promotion, which is the “process of enabling people to increase control over and to improve their health” is a very broad concept. Its strategic axes (defined in the Ottawa Charter), involve responsibilities situated mainly outside of the healthcare system and even beyond the health system⁷. A large number of indicators structured within a specific conceptual framework would be necessary.
2. Most of the indicators that would be needed to evaluate the health promotion are not ready to use. Some still necessitate developmental work, while others necessitate being adapted to the Belgian/regional context.
3. Few data are available.
4. The conventional, easy to measure (although narrow-viewed), health/health behaviours-related outcome indicators are distal outcomes influenced by health promotion as well as by other factors. Much more indicators, with their values and some kind of benchmarking, are needed to pilot health policies.

⁷ The five axes of the Ottawa Charter are:

- building healthy public policies (the responsibility of the health authorities is to put health in the agenda of all policies)
- create supportive environments (life settings)
- develop individual skills
- strengthen the community action
- reorient health services

The main values and dimensions of health promotion are: participation, empowerment, equity, sustainability, multistrategic, multisectoriality.

Consequently, only a partial view of the performance of health promotion is given here by means of 15 indicators, as shown in Table 10.

For many of the classical indicators of the health outcomes and healthy lifestyle categories, the national rates are intermediate, while important regional/social disparities are observed, with more favourable lifestyle in Flanders and in more educated classes (at the exception of alcohol consumption).

Few indicators could be internationally benchmarked. We pinpoint the problem of obesity that is quite high, still increases, and shows severe disparities. The tobacco consumption, while being still too high with 20% daily smokers, decreases, but again with very large social disparities and quite large regional disparities. The fruits and vegetables consumption is far lower than the daily needs, but an improvement is seen. The weekly alcohol consumption is not very high, but it seems that addiction tends to increase. The rate of alcohol consumption should however be interpreted with caution since it is particularly susceptible to social desirability bias. No regional/social disparities are observed for this indicator (unless a higher rate of “problematic drinking”, meaning a tendency to addiction, in Brussels).

The HIV diagnosis rate in Belgian citizens increased slowly in the past years; nevertheless, a large increase is observed in men who have sex with men. No international comparisons are shown here, since the diagnosis rate in non-Belgian people could consist of a large proportion of imported cases, which are not so relevant for the health promotion policies in Belgium.

With regard to the other indicators, the lack of social support shows important social and regional disparities. Moreover, the rate is much higher in older people.

Belgium ranks at an intermediate level on the Tobacco Control Scale Policies, which internationally compares the Public policies to control the tobacco consumption.

The other indicators are indices aiming to measure the strength of the local health promotion policies in various settings. They are only available in Flanders (through the VIGEZ surveys). They are difficult to interpret without an in-depth analysis. Trends measured by successive surveys seem to show that the health promotion culture is improving in the schools (the participation culture is quite good), the supply of physical activity is improving. However, health promotion policies are not well implemented in many municipalities.

Table 10 - Indicators of health promotion

Indicator	Global	Belgium	Most recent data	Trend over time	M	F	Socio Low	Socio High	Flanders	Wallonia	Brussels
Overweight or obese adults (%)	☹️	46.9	2008	increase	53.7	40.4	57.8	40	47.1	48.9	39.8
Obese adults (%)		13.8	2008	increase	13.1	14.4	19.1	9.1	13.6	14.6	11.9
Decayed, missing, filled teeth at age 12-14 (mean score)	☹️ ⚠️ R	1.3 ⁴	2010								
Diagnosis rate of HIV in Belgian pop (/100,000 pop)	☹️	3.9	2010	increase	6.9	0.7			3.8	2.4	8.9
Daily smokers (% 15+)	☹️	20.5	2008	decrease	23.6	17.7	22.1	13.1	18.6	24	22.3
Alcohol consumption (% 15+)	☹️										
- Problematic ¹		10.2	2008	increase	13.1	7.3	11.5	11	9.5	10.7	14.4
- Overconsumption ²		7.9	2008	stable	10.1	5.9	5.9	8.4	7.9	8.4	6.7
- Binge drinking ³		8.1	2008		12.8	3.7	8.3	7.6	8.9	7	6.2

¹ Calculated on the population of persons who drink alcohol (non abstinent) and based on CAGE, 2+ cut off.
² 15+ in women; 22+ in men.
³ Risky single-occasion drinking (≥6 drinks) at least once a week.
⁴ Some data but too few countries.

Table 10 - Indicators of health promotion (continuation)												
Indicator	Global	Belgium	Most recent data	Trend over time	M	F	Socio Low	Socio High	Flanders	Wallonia	Brussels	
At least 200g vegetables and 2 fruits per day (%)	☹️	26.0	2008	increase	23.4	28.5	21.7	29.4	30.0	19.2	25.3	
At least 30 minutes of physical activity per day (%)	☹️	38.1	2008	stable	48.7	28.3	24.0	42.8	45.1	28.4	24.7	
Poor social support (%)	☹️	15.5	2008		15.1	16	24.4	10.1	12.4	20.0	22.9	
Tobacco Control Scale		50/100	2010									
Score of supply of physical activity at school	⚠️		2009	increase					5.5/10			
Health promotion policies in the municipalities	⚠️		2009						37/36/50 ⁶			
% of schools with a health-team	⚠️		2009	increase					42/64/54 ⁶	40% ⁵	40% ⁵	

⁵ For Wallonia and Brussels together.
⁶ Indicators from VIGEZ; respectively in tobacco prevention, healthy eating and physical activity (scores from VIGEZ).

8. Equity and equality

Equity is a key feature in the evaluation of the performance of a health system (see ref. 1 p. 72). It is also a controversial normative issue, referring to judgement and political position. A broad range of perspectives and definitions have been proposed in the literature. We present them in Supplement S2 of the report 2012: “The place of equity in assessments of the performance of health systems” (available on the KCE website: www.kce.fgov.be).

Being aware of this feature, we have approached the dimension of equity in two complementary ways. First, we have documented the inequalities in health, health determinants and healthcare utilization in Belgium across the socioeconomic position (results in Table 11). Second, we have proposed contextual indicators that can highlight issues of equity in healthcare at a global level (results in Table 12 and Figure 2).

Equity in health is sometimes defined as “the absence of systematic inequalities in health/health determinants between social groups who have different positions in a social hierarchy”. For this reason, this chapter focuses only on the socio-economic inequalities. Other inequalities (e.g. by gender or region) are showed in the synoptic tables for each dimensions, and are discussed in the detailed indicator-sheet (see Supplement S1). We have also restricted the socioeconomic position to one characteristic only: the educational level (for the indicators from the HIS) or the preferential reimbursement (BIM) status for the administrative databases. Other dimensions of the social inequality, like employment status, income or ethnicity, were not studied here.

a. Socioeconomic inequalities

Major socioeconomic inequalities could be measured in the field of overall health outcomes (life and health expectancies, self-perceived health); those are endpoint measures pinpointing equality problems in the chain of health determinants. Inequalities were also observed in many indicators of the health promotion section (smoking, being overweight/obese, eating too few fruits and vegetables, practising a physical activity, and social support). Inequalities were observed for the dimension of accessibility. Unfortunately, for most indicators of the other dimensions, no socioeconomic data were available, and the inequalities could not be measured.

Table 11 - Summary table of socioeconomic inequalities						
	Overall value (f)	Value in lowest social group (f)	Value in higher social group (f)	Absolute difference (lowest vs highest)	Relative Risk (lowest vs highest)	Summary measure (CII or PAF)
General Health Status						
Life Expectancy at 25 in men, 2001 ^{1,2}	51.38	47.56	55.03	-7.47	n.a.	3.73%
Life Expectancy at 25 in women, 2001 ^{1,2}	57.09	53.98	59.9	-5.92	n.a.	1.43%
Healthy Life Years at 25 in men, 2001 ^{1,2}	40.47	27.75	46.33	-18.58	n.a.	15.30%
Healthy Life Years at 25 in women, 2001 ^{1,2}	40.42	28.92	47.1	-18.18	n.a.	16.56%
% of the population (aged 15+) that assess their health as good or very good ³	76.8%	57.4%	85.7%	-28.3%	0.67	11.6%
Accessibility of care						
Delayed contacts with health services because of financial reasons (% of households) ⁴	14.0%	27.0%	4.0%	23.0%	6.75	-71.4%
Breast cancer screening (% women aged 50-69) ⁵	60.1%	48.6%	62.9%	-14.3%	0.77	4.7%
Cervix cancer screening (% women aged 25-64) ⁵	61.8%	48.9%	64.2%	-15.3%	0.76	3.9%
Appropriateness						
% of adult diabetes patients receiving appropriate care, in terms of regular retinal exams and blood tests ⁵	54.0%	48.0%	58.0%	-10.0%	0.83	7.4%
¹ in years; ² 5 educational levels; ³ 4 educational levels; ⁴ 5 income levels; ⁵ 2 reimbursement categories; rates are not adjusted for age; summary measures= CII (Concentration Index of inequalities) relative for life and health expectancy, PAF (Population Attributable Fraction) for all the other indicators.						

Table 11 - Summary table of socioeconomic inequalities (continuation)						
	Overall value (f)	Value in lowest social group (f)	Value in higher social group (f)	Absolute difference (lowest vs highest)	Relative Risk (lowest vs highest)	Summary measure (CII or PAF)
Health promotion						
% of the population (aged 15+) that reports to smoke daily ³	20.5%	22.0%	13.1%	8.9%	1.68	-36.1%
% of the population (aged 15+) reporting a poor social support ³	15.5%	24.4%	10.1%	14.3%	2.42	-34.8%
% of the adult population considered as being obese (BMI \geq 30) ³	13.8%	19.2%	9.1%	10.1%	2.11	-34.1%
% of the adult population considered as being overweight or obese (BMI \geq 25) ³	46.9%	57.8%	40.0%	17.8%	1.45	-14.7%
% of the population reporting to eat at least 200g vegetables and 2 fruits per day ³	26.0%	21.7%	29.4%	-7.7%	0.74	13.1%
% of the population reporting to practice at least 30 minutes of PA per day ³	38.1%	24.0%	42.8%	-18.8%	0.56	12.3%
³ 4 educational levels.						
Source: Health Interview Survey and EPS (IPH and KCE calculations) PA physical activity.						

b. Contextual indicators of equity

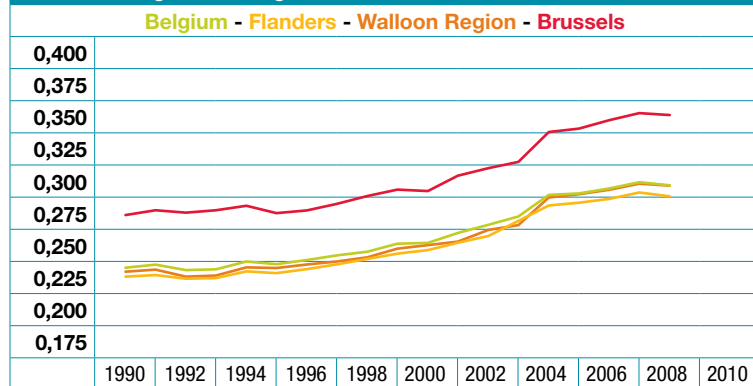
We have selected two contextual equity indicators: an indicator of progressivity of public financing of healthcare and an indicator of the repartition of the national income. First, the computed ratios in Table 12 show that the share of regressive financing sources (indirect tax payments) has increased. Generally, indirect tax payments are regressive because the rich and the poor pay the same rate of indirect taxes on consumption goods and services and richer persons save a higher proportion of their income. Hence, the average rate of indirect taxes (indirect tax payments divided by income) decreases with income. However, we have to be cautious with the interpretation of the trend because the two last years are only budgeted amounts.

Second, because the health status can be influenced by the level of income inequality in a country, we show the evolution of the Gini index since 1988 in Belgium. Given that the value of the Gini index increases with income inequality, we observe that the inequality is increasing in Belgium and is higher in Brussels than in the two other regions.

Table 12 - Indicator of equity: progressivity indicators of the public financing of the healthcare system

Indicators of progressivity	2005 (final accounts)	2006 (final accounts)	2007 (final accounts)	2008 (provisional accounts)	2009 (provisional accounts)	2010 (budget)	2011 (budget)
Ratio proportional receipts/total receipts	71.1%	71.0%	72.0%	70.6%	69.4%	64.8%	61.4%
Ratio progressive receipts/total receipts	18.9%	19.0%	18.0%	17.3%	17.2%	19.4%	18.4%
Ratio regressive receipts/total receipts	10.0%	10.0%	10.0%	12.1%	13.4%	15.8%	20.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Vade mecum de la sécurité sociale, RIZIV – INAMI, KCE calculations.

Figure 2 - Indicator of equity: Gini index after taxation and transfers, in Belgium and regions

Source: DGSIE (Belgium)

Note: the Gini coefficient is a coefficient for inequality of income in a population. When there is perfect equality (everybody has the same income), the coefficient is 0. When there is perfect inequality, the coefficient is 1 (one person has all the income). A lower coefficient indicates a more equal distribution of the incomes.

9. Conclusions on strengths and weaknesses

Health status

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

Accessibility

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

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

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

Quality of care

The quality was studied by means of 5 dimensions. The effectiveness showed a mixed picture, since it scored very well on cancer survival rates, but with concerns on the field of mental health, since Belgium has the second highest suicide rate in Europe (with very high regional disparities), and a high and increasing level of involuntary commitments in psychiatric hospitals. More indicators and data would be needed to describe the effectiveness in mental health.

The appropriateness of care is rather disappointing with high and increasing rates of breast cancer screening outside the target groups, moderate follow up of guidelines (antibiotics, diabetic patients), increasing rates of caesarean sections with large variability between hospitals.

The safety of care shows encouraging results, with decreasing trends in the exposure to medical radiation, hospital-acquired MRSA, hospital mortality after hip fracture, and stable incidence of post operative sepsis and prescription of anticholinergic antidepressants to older persons. However the incidence of pressure ulcers is increasing.

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

Patient-centeredness could only be very partially assessed. A high satisfaction rates with health services was found, as well as a trend to die more at the place of living. More data need to be collected for this topic.

Efficiency

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

Sustainability

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

Equity

The dimension of equity has been approached by two complementary ways. First, inequalities in health, health determinants and healthcare utilization have been analysed by socioeconomic position. Strong inequalities were observed in the health and lifestyle indicators and were discussed above. Inequalities were also observed for the cancer screening, and for the follow up of chronic patients. However, most hospital-based indicators could not be studied by social status in this work, and the conclusion is still largely incomplete qua inequalities in care provision and quality. Equity was also approached by two contextual indicators, highlighting this issue at a global level. The progressivity of the financing of healthcare is decreasing (more based on financial taxes), which is an evolution towards less equity. The Gini index corresponds to the level of inequality in the global distribution of incomes in Belgium, and has been shown to be related to the global health status. It is relatively low in Belgium (hence not important inequality) but increases over time, which can be interpreted as less equal distribution.

Health Promotion

Finally, health promotion was mostly approached by conventional health and lifestyle indicators, complemented with some indicators related to health policies, healthy settings, and individual skills. Since the very limited availability of suitable indicators and data, only a fragmental view could be showed.

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

Please find [the complete report](#) on the website of the Belgian Health Care Knowledge Centre, www.kce.fgov.be, under the heading “publications”.

For each of the indicators described above, a documentation sheet is available on the KCE website in the document entitled [Supplement S1](#). It summarises the rationale for choosing the indicator, technical information on data sources and computation, all results, including subgroup analyses and benchmarking, limitations in interpretation, and all bibliographical references.

III. The 2012 performance report: usefulness, added value and limitations

1. What is the usefulness of the Performance Report?

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

By means of 74 indicators, this report provides a broad picture of the performance of the Belgian health system. The indicators provide warning signals with respect to the status of the health system in terms of accessibility, quality, efficiency, sustainability and equity. In some cases, policy makers may already be aware of the problems, and have already commissioned additional analyses to know which actions to take. In other cases, these signals are new to policy makers, and will thus require further in depth analysis. In any case, the comprehensive and structured way indicators are presented intends to facilitate the prioritising of needed actions and /or further studies.

2. What is the added value of this report compared to the previous one?

The previous report, called "a first step towards performance assessment", was mainly a pilot study. Its main conclusion was that, in Belgium, it was feasible to conduct such an evaluation, not in the least thanks to the good collaboration between administrations. This second report presents the first full performance evaluation of the Belgian health system. The following strengths can be identified.

Improved data availability

Significant improvement in data availability was achieved: data are now available for cancer survival, for infant mortality, and the delay with regard to the availability of national mortality data was largely reduced.

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

As stated in the operational objectives, the set of indicators has been enriched for those domains or dimensions that were less or not at all covered in the previous report. Indicators have been added in the fields of mental healthcare, care for older persons, continuity of care, and to a lesser extent in end-of-life care, long-term care, patient centeredness and health promotion. Two contextual indicators of equity have been added, and the indicators have been systematically analysed by socioeconomic status (when data were available).

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

The structure of the set of indicators has been clarified in many ways. Only measured indicators are retained in the current set. Indicators for which we could not find data are discussed in the section "data available soon" or "indicators under development" (see [supplement S1](#)). This facilitates the comprehension of the set of indicators, highlights near changes in data availability and points at gaps in data. Also, the former distinction between primary and secondary indicators has been removed, as it proved not to play a role in their interpretation.

Systematization in data analysis

The analysis of data has been systematized, and the indicators are always presented by using the same structure: evolution over time, evolution over time by region, subgroup analyses by socioeconomic characteristics and international benchmarking.

Use of already available information

Maximum use has been made of routinely available data (e.g. in administrative databases or in national registries): the Health Interview Survey (HIS), the hospital administrative discharge data (RHM - MZG), the EPS (échantillon permanent - permanente steekproef), databases from the RIZIV – INAMI (doc N, Pharmanet), registry of hospital-acquired infections, vaccination surveys, Belgian Cancer Registry. The use of routinely available data necessitating no additional cost for data collection facilitates the analysis of trends over time.

Improve communication of results

Finally, synoptic tables with colour codes have been developed to allow a quick and easy overview of the results and of their interpretation; it also allows comparison of indicators.

3. What are the limitations of this report?

a. Performance against which target? Benchmarking with other European countries does not solve the problem

Unfortunately, very few specific and measurable objectives have been defined in Belgium. When such targets exist, the value of the indicator was assessed by comparison to the value of the objective. Otherwise, the judgement was based on external (e.g. WHO-defined) targets, or by comparing with the results of other countries. Whenever it was possible, the indicators have been compared with the average of the EU-15 countries. This allows to position Belgium as compared to its near neighbours, but does not solve the question of “are our results good or bad?” Indeed, some results can be good when compared to other countries, whilst they are not when confronted with the country objective. Moreover, interpreting the results of international comparison of performance is still under debate (see ref. 8 p. 72), and there are many pitfalls, such as methodological and contextual variations, making meaningful comparisons difficult.

Several international organisations already benchmark Belgium against other European countries on health status and health-care indicators: the WHO with the “World Health Report 2000” (see ref. 9 p. 72), the biannual report “Health at a glance Europe” (see ref. 10 and 11 p. 72) resulting from a collaboration of OECD and the European Union (see ref. 12 p. 72), the website of the ECHI indicators, supported by the European Union and the Euro Health Consumer Index (see ref. 13 p. 72) from the private Swedish organisation Health Consumer Powerhouse.

b. Make decisions on outdated data?

Some data are clearly outdated, and even the most recent ones date back from 2 years ago. This is inherent to the use of administrative data or registries. For international comparison, we sometimes had to rely on data from 2005! In several cases, it would be difficult for policy makers to base decisions on such outdated information. Regarding the indicators provided by the HIS, very recent data are expected in the next performance report since a new HIS will be conducted in 2013.

c. A more comprehensive view, but still some gaps in the tool

Most issues relate to the lack of suitable indicators, the lack of (recent) data, the need to look for a better indicator or for more details

1. **Global health status: add an indicator with high potential for action: avoidable/amenable mortality**

The previous report included premature mortality as an indicator of health status, expressed as potential years of life lost (PYLL) before the age of 70. Instead, the study of mortality expressed by group of causes, and the study of avoidable/amenable mortality, could provide interesting information on the effectiveness of health services.

2. **Financial accessibility: need for a more comprehensive picture**

A prerequisite to guide policy within the domain of financial accessibility is an improved transparency in ambulatory supplements as well as in private hospital insurances (the percentage of people with private hospital insurance, and what is specifically covered by these private insurances, at what cost).

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

4. **Workforce counts:** better data on the supply side available, but data on the need side still lacking. An effective healthcare workforce planning should be considered within a global policy taking into account supply and patient needs. Data on the supply side undoubtedly improved these last years.

But no indicators of the needs have been defined yet in this report. On the other hand, the needed workforce is not only depending on the medical needs but also on the way the health care system is organized, for instance primary versus hospital care

5. **Mental healthcare:** current indicators do not reflect the recent changes in the sector. The most recent reform efforts to attain a balanced integrated care model focus on the development of “care networks” (the so-called “Art. 107 project”). The main aim is that community services should be offered whenever possible, while hospital services should be available when ambulatory care cannot provide a good answer to the patient’s needs. Some new indicators have been proposed to monitor these evolutions (e.g. the percentage of patients with case management; the percentage of expenditures on community care compared to total expenditures on mental health care). But they could not yet been measured because of limitations in the current data.

6. **Continuity and coordination of care:** new data soon available with the new pathways in ambulatory care, but still many gaps remain. The results of the new pathways in ambulatory care (zorgtrajecten/trajets de soins) for type 2 diabetes or chronic renal failure patients are currently being evaluated. Those elements will be included in the next edition of this report. However data on other relevant indicators, such as patient experiences with coordination of care, or availability of patient health information at any time, are lacking.

7. **Patient-centeredness:** many initiatives but few data. Patient centeredness is intrinsically difficult to measure with quantitative data, because it is related to the health system's ability to successfully answer to the particular needs of the patient or to encourage the patient's involvement. To improve our understanding in that domain, the next wave of the Health interview Survey will contain a set of questions on the patient's experience with ambulatory healthcare services (GP or specialists), based on the OECD questionnaire to facilitate international comparison (see ref. 14 p. 72). Patient's experience with ambulatory care will thus be included in the following update of this report.
8. **Long-term care:** Several indicators have been chosen to assess the quality of long-term care for older patients, as the prevalence of malnutrition, the percentage of older patients physically restrained, the prevalence of falls, the incidence of pressure ulcers and the problem of poly-medication. Those indicators could not be measured yet, which highlights the current lack of data in this domain. However, the BelRAI will soon provide data on some selected indicators. BelRAI is an instrument developed to assess needs of older persons in residential facility or receiving nursing care at home.
9. **End-of-life care:** many local studies in Belgium, but few national data. The few indicators in this report are based on the population of patients dying from cancer, or on the population of patients receiving palliative care at home. This does not cover the whole population of patients eligible for palliative care, which highlights a real gap in data availability. Moreover, so far no data at national level have been published on accessibility nor on quality of end-of-life care. Compared to the other domains of care, end-of-life care is little or not at all represented in databases from international organisations.

10. **Health promotion:** data on health literacy are lacking, while they are already available in other European countries. Health literacy is a relatively new concept considered as a crucial resource in health management. It can be defined as the individual skills necessary to understand and manage factors interacting with one's health. This gives individuals the opportunity to make healthier choices. It has been defined as a priority of action for the 2008-2013 European Union strategy, and results from the EU Health Literacy Survey for some countries are now available.
11. **Efficiency would deserve more attention in future report**
Obviously, efficiency in healthcare cannot be sufficiently assessed with the few indicators selected in this work. International literature proposes efficiency measures which explicitly identify inputs and outputs (see ref. 7 and 15 p. 72). This could certainly be an interesting area of research.
12. **Inequalities** could not be studied for all indicators, because in some data sources (RHM-MZG) no socio-economic data were available. In the health insurance data, the information on the socio-economic status is rather crude and approximate.

IV. General conclusion

This report presents the results of a first global evaluation of the performance of the Belgian health system, building on a former feasibility study. By means of seventy-four indicators with numerical values, this report intends to provide an overall overview of the health system performance, pointing to some directions for policy actions and generating questions for further follow up or research.

It represents a substantial improvement over the previous report, by being more comprehensive and by updating the former set with more relevant indicators. Moreover, it allows in some cases the measurement of evolution. Also, important previous gaps in basic data have been filled since the last edition, like the cause specific mortality rates or the cancer survival.

Belgium is not the first country having exercised this challenge. With the signing of the 2008 Tallinn charter on health systems, the Member States formally committed themselves to the monitoring and evaluation of health system performance. Several neighbouring countries, having years of experience with health system performance measurement served as example for this report, this is certainly true for the Dutch Performance Report. One of the weaknesses hampering successful performance measurement (also identified in former Dutch performance reports) is the availability of up to date data. Regular updating of administrative data and dynamic publishing of results on a website could be one possibility to investigate.

With the Directive on the application of patients' rights in cross border care, the commitment taken in Tallinn becomes a common concern among member states⁸. As from the implementation of the Directive into national legislation in October 2013, member states will need to ensure that patients coming from another member state, can receive relevant information on safety and quality standards in order to make an informed decision for cross-border healthcare. In that context this report not solely lays down the basis of a future systematic performance assessment but can be considered as a first step towards Belgium's responsibility to ensure safe, high quality, accessible and efficient health care for Belgian as well as foreign patients.

⁸ Directive 2011/24/EU of the European Parliament and of the Council of 9 March 2011 on the application of patients' rights in cross-border healthcare, Official Journal L 88/45, 4 April 2011

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Recommendations

General recommendation to policy makers

The concept of performance is implicitly linked to the attainment of objectives. Even though this report takes stock of “the current situation”, it should first and foremost be used to “improve the situation”. In that light, policy makers should clarify the measurable objectives and set deadlines by which these objectives should be attained, keeping the following recommendations in mind.

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

In general terms, the institutions and bodies concerned are advised to base themselves on the findings hereafter and to either stay the course in the areas where positive findings were made or to adjust their course to improve the situation in areas where warning signals have been issued.

Sticking with the positive findings:

- Health status: the “reported” or “perceived” health status measured by the health surveys (Institute for Public Health) is better than the European average.
- Coverage of preventative measures: the vaccination rate of children exceeds the European average.
- Quality of the health care:
 - Effectiveness of curative care: excellent survival rates 5 years after a breast cancer or colorectal cancer diagnosis in comparison with other European countries.
 - Excellent relational continuity with general practitioners and (more than 90% of) Belgians are extremely happy with their experience of the health system.
- Efficiency: an increase in day hospital and the use of less expensive medication attest to an increase in efficiency.

Issues to be taken into consideration in terms of steering future health policies:

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

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

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

- Quality of the health care:
 - (In)appropriate care: several indicators show that medical practice is not always appropriate. For instance:
 - The choice of antibiotics that are prescribed in first instance does not adequately meet the recommendations and shows no signs of improvement over the course of time (save in children).
 - The percentage of patients suffering from diabetes that is correctly followed up in line with recommendations is too low.
 - Even though the level is a little below that of the average in other European countries, the rate of caesarean sections is high (20%) and the numbers of caesarean sections performed following a complication-free pregnancy vary greatly from hospital to hospital.
 - Health care safety: even though the levels of radiation of medical origin are slightly lower than in 2011, they remain high compared to the European average.
 - Continuity of care: certain indicators show that there is a weakness in this area. For instance:
 - In spite of a continuous increase, the percentage of patients with a global medical file remains low.
 - The percentage of readmissions to psychiatric hospitals is relative high in comparison with the European average.
 - Sustainability of the system: The health system relies on primary care in which general medicine plays a key role. Even though the average age of general practitioners continues to rise, the quotas laid down by the planning commission have not been filled for a few years now. If this remains the case, this may very quickly pose problems in terms of the functioning of that primary care.

Recommendation to improve the health information systems

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

- Timeliness of the data:
 - Continuing the efforts to transmit recent updates to international organisations (OECD, Eurostat, WHO);
 - Accelerating access to administrative databases (Minimum Hospital Data).
- Data per area of care:
 - Mental health care: reforming the Minimum Psychiatric Data so as to bring them in line with international standards (unique patient identifier) and with developments in the sector. A review, that would allow patients' entire care path, including the care they receive outside of hospital, to be monitored, is needed.
 - Long-term care: ensuring that the data collected within the framework of the BelRai project are indeed available at national level to ensure that the various indicators selected can be measured.
 - Oral health: oversampling the group of 12-year-olds in the oral health survey to ensure that the international indicators can be calculated correctly.
 - End-of-life care: making better use of the existing data (Cancer Register and network of Sentinel General Practitioners)
 - Public health: completing the medication usage database to ensure that data are available on all the medication used, including on drugs that are not refunded but which need to be studied for public health or patient safety purposes (benzodiazepines, certain anti-inflammatories).

Recommendations for the collection of new data or new research

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

- Socio-economic inequalities: administrative databases can only offer a partial answer. Some data are simply unavailable (for instance, socio-economic status or ethnicity do not feature in the hospital data), others are either not very specific or not differentiating enough (for instance the recipients of preferential reimbursement).
- Affordability: enhancing the household budget survey to record the full health-care-related cost to patients and to facilitate an analysis by socio-economic level.
- Patient experience: data will become available thanks to the next Scientific Institute of Public Health survey, which will deal with general practitioners and consultants across the board (though data per specialty will need to be collected.)
- Health promotion:
 - There are no data on “health literacy” in Belgium. More specifically, it is advisable that Belgium would take part in European research aimed at developing tools to measure health literacy and that it would collect data on this topic.
 - Community-based health promotion: initiatives have been taken in the different regions of the country, yet, there are no statistics on these initiatives to hand. In Flanders, health-promotion data on certain communities (schools, towns, companies) are collected via the Flemish Institute for Health Promotion and Disease Prevention (VIGeZ). We would therefore recommend that the other regions would collect data on health promotion in communities more systematically in function of the information they need to document and support their policies.

- Finally, it would be advisable to check whether health promotion indicators, more specifically in the area of health care, could be included in the next report.

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

- For the attention of the FPS Public Health, the National Institute for Health and Disability Insurance (INAMI) and the Scientific Institute of Public Health (ISP)
 - Calculating the indicators for which there are presently no data available but for which data will be on hand by the next report (the outpatient care paths project, the BelRAI project, patient experience in the health survey, the prevalence of hospital-acquired infections, time to reimburse new medications).
 - For monitoring purposes, it would be desirable if more recent results could be included in the future. These indicators should preferably be routinely measured by the institutions/administrations and the respective administrative database managers. The results shall be forwarded to the teams tasked with updating the report, in accordance with an as yet to be specified schedule and framework.
 - Following international developments (OECD, WHO, Eurostat) in order to, where necessary, adjust the set of indicators in Belgium.
- For the attention of the research teams
 - Identifying new indicators for poorly documented issues (the labour force issue in nursing care, for instance).
 - Updating the performance review on the basis of more recent data.
 - Analysing the overall coherence (notably with a view to reinforcing the efficiency and sustainability dimensions) and updating the set of indicators in light of new evidence or new priority issues.

Colophon

Title: Performance of the Belgian health system: Report 2012 - Synthesis

The Belgian Health Care Knowledge Centre (KCE), the Institute of Public Health (IPH) and the National Institute for Health and Disability Insurance (NIHDI) issued the report.

The following administrations and public institutions have been consulted throughout the duration of the project:

- at the federal level (Federal Public Service Public Health, Federal Public Service Social Security, NIHDI, IPH)
- at the regional level: the Flemish Region and Community (Vlaams Agentschap Zorg en Gezondheid), the French Community - Fédération Wallonie-Bruxelles (Direction générale de la Santé), the German-speaking Community (Ministerium der Deutschsprachigen Gemeinschaft- Fachbereichsleiterin Gesundheit, Familie und Senioren), the Walloon Region (Direction générale opérationnelle des Pouvoirs locaux, de l'Action sociale et de la Santé and Observatoire wallon de la santé), the Brussels-Capital Region ((Joint Community Commission – Brussels-Capital Health and Social Observatory, Commission communautaire française and Vlaamse Gemeenschapscommissie)

Domain: Health Services Research (HSR)

MeSH: Delivery of Health Care, Health Promotion; Health Services Accessibility, Quality of Health Care, Efficiency, Organizational, Health-care Disparities, Social Justice; Benchmarking, Belgium.

This brochure is a report's synthesis. The complete report has the following reference: Vrijens F, Renard F, Jonckheer P, Van den Heede K, Desomer A, Van de Voorde C, Walckiers D, Dubois C, Camberlin C, Vlayen J, Van Oyen H, Léonard C, Meeus P. Performance of the Belgian Health System. Report 2012. Health Services Research (HSR). Brussels: Belgian Health Care Knowledge Centre (KCE). 2012. KCE Report 196Cs. D/2012/10.273/118.

Please find:

- this brochure on the website of the Health and Disability Insurance (NIHDI): www.inami.be, section Voulez-vous en savoir plus? > Etudes & recherches
- the complete report on the website of the Belgian Health Care Knowledge Centre, www.kce.fgov.be, under the heading “publications”.

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