3 QUALITY OF CARE

Quality of care 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".[25] In this report, the concept has been further subdivided into five sub-dimensions:

- Effectiveness of care
- Safety of care
- Appropriateness of care
- Continuity of care; and
- People-centred care

3.1 Effectiveness of care

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".[26] Effectiveness indicators are typically outcome (results) indicators: patient-reported outcomes (PROMs), adverse events (such as mortality, avoidable admission, and incidence of bacterial resistance) and sentinel events (e.g. wrong-site surgery). Ten indicators were chosen among internationally published indicators to assess effectiveness (Table 2). Even though it is not a specific outcome, treatable mortality was also added as a "starting point" to assess the effectiveness of healthcare systems in reducing premature deaths from various diseases and injuries.[27]

The effectiveness of **primary care** is measured by avoidable hospital admissions for three chronic conditions, namely asthma, chronic obstructive pulmonary disease (COPD) and diabetes. Effectiveness indicators for **hospital acute care** are 5-year relative survival rate for cancer (breast and colorectal cancer), case fatality within 30 days after admission for acute myocardial infarction (AMI) and ischemic stroke, and case fatality within 30 days after admission for surgery for colorectal cancer.

Several indicators analysed in other sections of this report can also be interpreted in terms of effectiveness. Some examples are:

- Safety indicators: incidence of hospital-acquired Methicillin-Resistant Staphylococcus Aureus (MRSA) infections (QS-2);
- Mental health indicators: rate of involuntary committals in psychiatric hospital wards (MH-4);
- Preventive care indicators: incidence of measles (P-5) and preventable mortality (P-13);

Treatable mortality

A death is deemed to be treatable when, in light of the medical knowledge at the time of death, deaths from those causes can be mainly avoided through timely and effective healthcare interventions, including secondary prevention and treatment. Belgium ranked well among EU-14 countries for men and average for women. Treatable causes of mortality were decreasing over time and was higher in Brussels and Wallonia than in Flanders.

Avoidable hospital admissions

High hospital admission rates for asthma, COPD and diabetes can be interpreted as pointing to poor effectiveness of first-line care, as well as to poor coordination or continuity of care.[17]

Belgium was situated around the EU-14 average for asthma admission rates and fares below European average for diabetes as well as for COPD (for recent years), but this needs to be interpreted with caution, as differences between countries can be due to many other factors than to effectiveness of care, such as differences in prevalence of the disease, accessibility of care or methodology for measuring the indicator.

Asthma-related admissions showed a decreasing trend since 2010, which was also the case in other EU-14 countries, with a sharp drop in 2020 due to the COVID-19 pandemic, which reduced access to hospital services. Rates are similar in the three regions since 2018.

Admissions for diabetes were slowly decreasing from 2010 to 2020, followed by a rise in 2021 (see also section 8.4); the same trend was observed in other European countries. Flanders had a number of admissions slightly above Wallonia and Brussels.

Admissions for COPD were stable from 2010 to 2015, then rose from 2016 to 2019, then fell in 2020 and 2021 (see also section 8.4), in Belgium as well as in other European countries. When looking by region, Brussels had the lowest rate of admissions followed by Flanders, then Wallonia.

Cancer survival

Five-year survival rates after breast and colorectal cancer are outcome indicators measuring the effectiveness of the health system for specific diseases. Both cancers can be screened, and programmes are implemented at the regional level (see indicators P-6, P-7 and P-9). The relative survival rate can reflect both advances in public health interventions (greater awareness of the disease, improvement of screening programmes) as well as improved treatments.

In a study comparing European countries published in 2014,[28] Belgium had outstanding 5-year survival rates for colon and rectal cancer, but lower than average results for breast cancer. Still, comparison of survival results between European countries is complicated by methodological limitations, and should thus be interpreted with caution.

The 5-year relative survival rate after the diagnosis of breast cancer and colorectal cancer was 92.4% and 71.9% respectively, in a cohort of patients diagnosed in 2017. Compared to patients diagnosed in 2004, the survival rate was slightly increasing for breast cancer patients and a moderate increase was observed for colorectal cancer patients.

Mortality after acute myocardial infarction (AMI) or ischaemic stroke

The 30-day AMI case-fatality rate reflects the processes of care, such as timely transport of patients and effective medical interventions. Case-fatality after AMI decreased slowly in Belgium between 2010 and 2019, mirroring the trend observed in other European countries.[17] Part of this reduction can probably be attributed to better treatment, particularly in the acute phase of myocardial infarction. In 2020, there was a sharp drop in Belgium while in EU-14 the rate was stable in 2020 and 2021. In 2021, the mortality results were lower in Flanders than in the two other regions, but the gap is closing.

The management of ischaemic stroke has evolved over the last decade, with clear advances in thrombolytic treatments and the emergence of stroke units.[29] As in other European countries, case-fatality after ischemic stroke decreased slightly in Belgium between 2010 and 2021, but stabilised in recent years. As far as regions are concerned, in 2021, Wallonia (9.3% of case-fatality rate within 30 days) and Brussels (9.4%) had a rate a bit higher than Flanders (8.1%).

Case-fatality rates for ischemic stroke in Belgium were slightly above the EU-14 average.

In-hospital mortality after colorectal surgery

Case fatality rates within 30 days and 90 days after a surgery to treat the colorectal cancer are indicators of the quality of acute care delivered to patients. Advances in diagnosis and treatment, including improved surgical techniques, have contributed to an increase in the survival over the last decade.[27] The evolution of the postoperative mortality rate over the period 2011-2015 was favourable (mortality decrease) for colon cancer and stable for rectum cancer. The rates were similar in Brussels and Wallonia, with Flanders managing lower rates. This requires further analysis (taking into account possible differences in patient populations and in coverage of the screening programme) before drawing conclusions on differences in quality of care.

Conclusion

The subset of indicators for the measurement of effectiveness of care was in many cases chosen among internationally published indicators. Belgium is situated around the EU-14 average for all measured effectiveness indicators, except for 5-year survival rate following a diagnostic for colon and rectal cancer, where results were better than in other countries (although the comparative data are outdated), and diabetes and COPD hospital admissions, where results are worse.

However, international comparisons should be interpreted with caution because of methodological issues. Trends over time are more reliable and are therefore equally informative for policymaking:

- Two indicators out of three on avoidable hospital admissions (asthma and diabetes) showed a decreasing trend which might be due to an improvement in the quality of primary care, but a conclusion is difficult to draw, as for 2020 and 2021, the COVID-19 disrupted the accessibility to hospital services.
- Five-year relative survival after colorectal cancer showed a notable increase for stage III patients.
- Case-fatality rates after AMI have decreased in recent years, as in other European countries.
- Postoperative mortality rate after surgery for colon cancer has been improving and was stable for rectal cancer.
- In comparison with the countries of the EU-14, Belgium compared well in treatable mortality for men and average for women.

Table 2 – Quality: Indicators on effectiveness of care

(ID)	Indicator		Belgiume	Year	Flanders	Wallonia	Brussels	Source	EU-14	EU-27
Effectiveness primary care – avoidable hospital admissions										
QE-1	Asthma hospital admissions in adults (/100 000 population)	⊕	13.7	2021	13.6	13.2	13.7	MZG – RHM		
			16.2	2021				OECD	16.4	18.8
QE-10	COPD hospital admissions in adults (/100 000 population)	●	169.8	2021	**160.0**	**204.9**	106.9	MZG – RHM		
			178.4	2021				OECD	122.6	102.8
QE-2	Diabetes hospital admissions in adults (/100 000 population)	●	124.6	2021	**130.1**	115.4	107.4	MZG – RHM		
			136.4					OECD	95.7	104.0
Effectiveness hospital and specialised care – health outcomes										
QE-3	Breast cancer 5-year relative survival rate (%)	⊕	92.4	2017-2022	92.5	92.5	91.4	Belgian Cancer Registry		
			86.4	2009-2014				OECD	86.2	83.2
QE-4	Colorectal cancer 5-year relative survival rate (%)	⊖	71.9	2017-2022	74.1	67.5	72.5	Belgian Cancer Registry		
			67.9/66.6	2009-2014				OECD*	63.6/62.9	60.5/59.0

[e] Differences between values calculated by the authors and OECD values are due to age-standardisation done by OECD.

(ID)	Indicator		Belgium	Year	Flanders	Wallonia	Brussels	Source	EU-14	EU-27
QE-5	Case fatality within 30 days after admission for AMI (% of the population aged 45+, admission-based)	⊕	5.8	2021	5.1	**6.7**	**6.6**	MZG – RHM		
			4.3	2021				OECD	5.8	7.1
QE-6	Case fatality within 30 days after admission for ischaemic stroke (% of the population aged 45+, admission-based)	⊕	8.6	2021	8.1	9.3	9.4	MZG – RHM		
			8.2	2021				OECD	7.4	9.6
QE-7a	Case fatality within 30 days after surgery for colon (c) or rectal (r) cancer (% of the population, surgery based)	ST	3.6 (c) 1.6 (r)	2020	2.8 (c) **2.3** (r)	**4.9** (c) **1.0** (r)	**5.8** (c) 0.0 (r)	Belgian Cancer Registry	-	-
QE-7b	Case fatality within 90 days after surgery for colon (c) or rectal (r) cancer (% of the population, surgery based)	-	6.7 (c) 4.2 (r)	2020	5.8 (c) 4.2 (r)	**7.6** (c) 3.4 (r)	**10.4** (c) **8.4** (r)	Belgian Cancer Registry	-	-
QE-8a	Treatable mortality, men (per 100 000 population, age-adjusted)	⊕	65.8	2020	51.9	**89.1**	**88.3**	Statbel cause of deaths database		
			66.3	2020				Eurostat	77.3	109.0
QE-8b	Treatable mortality, women (per 100 000 population, age-adjusted)	⊕	59.4	2020	55.2	**78.1**	**71.8**	Stabel cause of deaths database		
			59.5	2020				Eurostat	60.5	76.3
QE-11	Successful treatment of pulmonary tuberculosis (% of people with laboratory confirmed pulmonary tuberculosis)	ST	82.4	2020	85.9	83.0	77.4	BE TB register		
			67.3	2020				ECDC	77.3	73.6

Good (🟢), average (🟡) or poor (🔴) results, globally stable (ST), improving (+), deteriorating (-) or trend not evaluated (empty). * *Results for colon/rectum cancer are presented separately in OECD Health Statistic*