1.1. Regular contacts with a dentist (population aged 18+) (EQ-6)

1.1.1. Documentation sheet

Description	EQ-6 Regular contacts with a dentist (population aged 18+)
Calculation	We analyse inequity in regular contacts with a dentist in the past 3 years (defined as dental visits in two different years during the last three years), see P-11.
	The **fairness gap** of each individual (aged 18+) in the EU-SILC survey is calculated (see methodological note on equity in healthcare use). Next, systematic differences in the fairness gap by socioeconomic group are evaluated by:
	• Differences in the fairness gap by socioeconomic status, e.g. income or educational attainment, in comparison to the general population. • Differences in the fairness gap for specific (vulnerable) population subgroups (e.g. single parents, beneficiaries of increased reimbursement, individuals with severe material deprivation), in comparison to the general population. • The (absolute) concentration index, which is a summary score of the inequity in the distribution of the fairness gap along a socioeconomic dimension (e.g. income distribution, educational attainment).
Rationale	See methodological note on equity in healthcare use See indicator P-11
Data source	Linked micro-data: EU-SILC & IMA – AIM & RIZIV – INAMI, years 2018, 2019, 2020, 2021. This is individual level data from respondents of the EU-SILC data from Statbel (Algemene Directie Statistiek – Direction générale Statistique – Statistics Belgium) enriched with their healthcare consumption data from IMA – AIM and municipality level data on healthcare supply from RIZIV – INAMI. KCE report 334 for years 2012, 2016[1]

Technical definitions	The calculation of the **fairness gap** and definition of socioeconomic and other population groups are described in the methodological note on equity in healthcare use.
	
	 Definition of regular contacts with a dentist
	
	 • A contact with a dentist is identified through the professional code of the provider:
	     ○ The first two digits of the professional code (variable practitioner_cat in IMA – AIM GZSS database) greater or equal to 30 and lower or equal to 39, or
	     ○ The first two digits of the professional code (variable practitioner_cat in IMA – AIM GZSS database) greater or equal to 10 and lower or equal to 19 and the qualification of the healthcare provider (variable ss00065B in IMA – AIM GZSS database) equal to 52, 520, 152, 222, 422, 521.

International comparability	No
Limitations	See methodological note on equity in healthcare use

Dimension	Equity
Related indicators	EQ-7 Regular preventive contacts with a dentist (population aged 18+; population aged below 18)
	A-4 Households facing catastrophic out-of-pocket payments (% of respondents, HBS)
	A-7 People with self-reported unmet needs for dental examination due to financial reasons (% of respondents 16+, EU-SILC)
	P-11 Regular contacts with dentist (% pop aged ≥3 years)
Reviewers	Roos Leroy (KCE); Carine Van de Voorde (KCE)

1.1.2. Results

Evolution over time in the probability to have regular dental visits

Table 1 reports the evolution over time of the probability to have regular dental visits (visits in at least 2 of the past 3 years). For the insured population aged 3 years or more, the fraction of individuals with regular dental visits increased from 49.2% in 2012 to 55.5% in 2018 and remained more or less stable since.[2] Among the individuals included in the EU-SILC/IMA-AIM sample, we find a higher share of respondents with regular dental visits (52.5% in 2012 up to 60.4% in 2021), but a similar evolution over time. The fraction of individuals with regular dental visits is lower (1 to 2 percentage points) when restricting the sample to the population aged 18 or more, which is used in the regression and inequity analysis.

Table 1 – Evolution (2012-2021) of the probability to have regular dental visits in the past 3 years

| Sample	2012	2016	2018	2019	2020	2021
Population (3+)	49.2%	54.1%	55.5%	55.7%	54.4%	53.8%
Survey (3+)	52.5%	58.1%	60.3%	61.3%	60.8%	60.4%
Survey (18+)	51.4%	57.3%	58.7%	59.2%	58.7%	58.1%

Figure 1[a] shows the evolution of the probability to have regular dental visits in the past 3 years for a variety of population subgroups (adult population). These are the crude trends, without a correction for healthcare needs.

Figure 1 indicates that most population subgroups follow the general trend in the adult population with an increase up to 2018 and stable thereafter. There are, however, some exceptions. We find a decrease over time in the probability to have regular dental visits among the unemployed (aged 18-65) and individuals with very bad self-assessed health (panels D & E). Second, there is an important socioeconomic gradient with respect to income (panel A) and education (panel C). Individuals with high income (upper middle and top income class) and high educational attainment (tertiary education) have a probability to have regular dental visits well above the population mean. The opposite is true for individuals with low income (at risk of poverty and lower middle class) and low educational attainment (primary and lower secondary education). Other financially vulnerable population subgroups (individuals with increased reimbursement, with severe material deprivation, in unemployment or inactivity, see panels B and D) also have a probability well below the population average, in particular individuals with severe material deprivation. The middle income and educational groups (core middle class and upper secondary education) have a probability in line with the population mean. Third, the fraction of individuals with regular dental visits is below average for individuals with high care needs, i.e. those with fair, bad and very bad self-reported health, with chronic disorder and limitations, invalidity or disability (panels E and F). The fraction is particularly low among over-80 year olds.

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[a] Note the analysis is based on a survey sample and that results for some population subgroups are based on a small number of observations (e.g.

over-80 years old, very bad self-assessed health, at risk of poverty without increased reimbursement, etc.). This may lead to fluctuations over time due random variation that interferes with the observed trends.

Figure 1 – Evolution (2012-2021) of the probability to have regular dental visits for different subgroups and population groups at risk
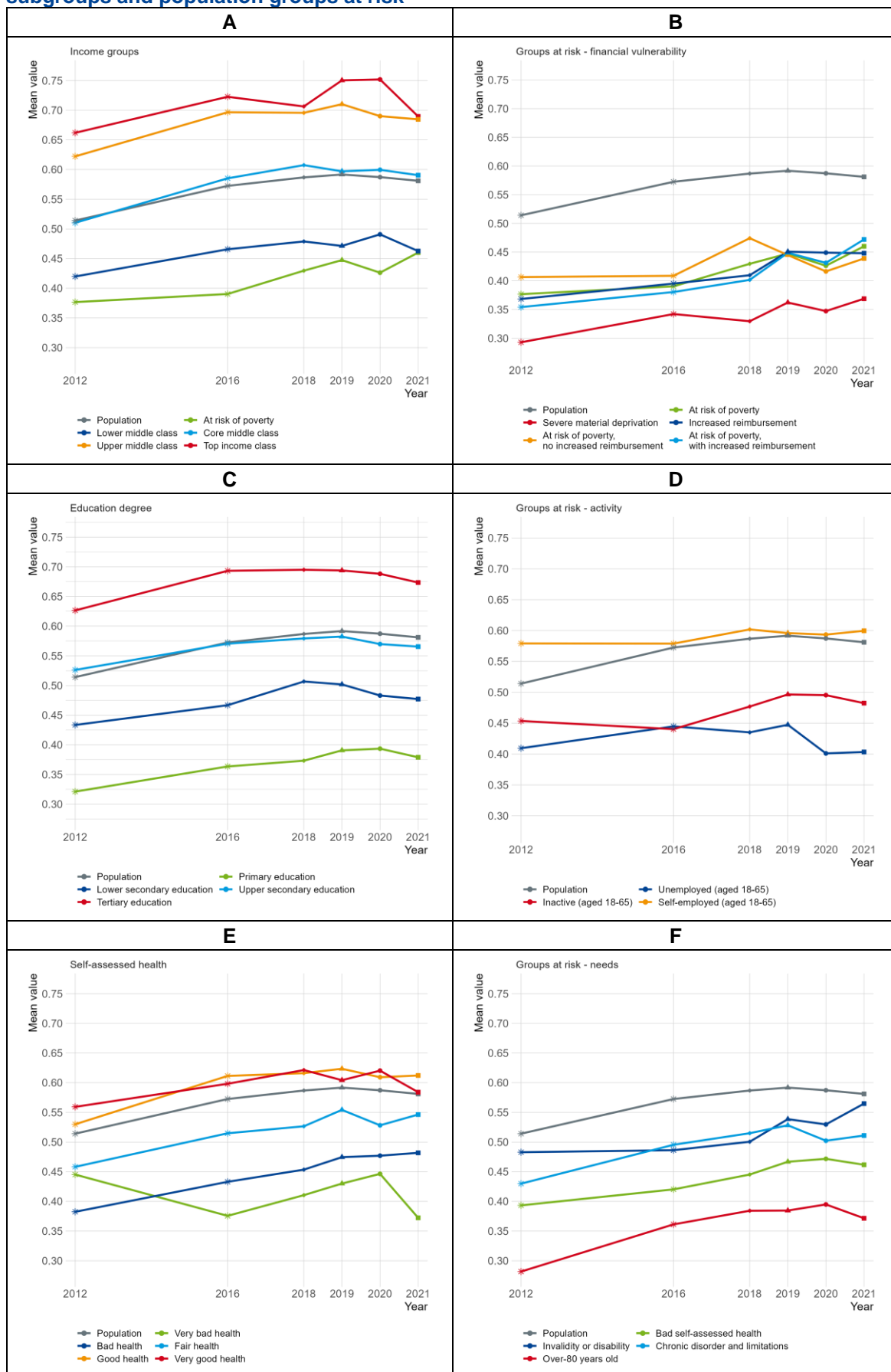
Overview inequity over time for different population subgroups

Figure 2 and Figure 3 show how the probability to have regular dental visits in the past 3 years in various population subgroups differs from the population average when looking at inequality as well as inequity. When analysing inequity, a correction is made for healthcare needs.[b] Contrary to other types of care (see EQ-1 to EQ-5), the correction for healthcare needs in case of dental care is limited to differences by age and gender as there are no variables available in the EU-SILC/IMA-AIM database that are specifically related to dental care needs. Moreover, one could argue that regular dental care and in particular regular preventive dental care is recommended regardless of health status.

Figure 1 reveals a substantial gradient in regular dental visits by self-assessed health and other proxies for high care needs, with lower contact rates among individuals in worse health. In our opinion, it would be incorrect to label these differences as fair and justified and adjust dental care use accordingly.

In Figure 2, population groups are defined based on categories of equivalized income, categories of educational attainment, and categories of self-assessed health. In Figure 3, specific vulnerable population subgroups are considered.

The figures can be read as follows. Values to the left of the vertical line indicate that the population subgroup has a lower probability of having regular dental visits than the population average. Values to the right of the vertical line, on the other hand, indicate a higher probability than the population average. In addition to an evaluation in terms of the population average, it is possible to make a comparison over time for a specific population subgroup or a comparison of different subgroups.

Given the minor correction for healthcare needs (only age and gender, see above), the results with respect to inequalities and inequities in Figure 2 and Figure 3 are quite similar. The disparities in having regular dental visits are

quite large compared to other types of healthcare and range between -20 and +15 percentage points.

We conclude that, first, there are important gradients in the probability to have regular dental visits with respect to income, self-assessed health and education. The probability to have regular visits is markedly lower for individuals with primary and lower secondary education; individuals at risk of poverty and in the lower middle class; and individuals with fair, bad and very bad self-assessed health status. A probability above the population mean is found for individuals with tertiary education, in the upper and top middle class and, to a lesser extent, for individuals with good and very good self-assessed health.

Second, for all vulnerable population subgroups the probability to have regular dental visits is below the population average. This is particularly the case for financially vulnerable population subgroups (i.e. at risk of poverty, beneficiary of increased reimbursement, unemployed, inactive, severe material deprivation). In some cases there is a positive evolution over time, i.e. the average is evolving towards the population average (e.g. individuals at risk of poverty with increased reimbursement), but in other cases the situation is deteriorating, i.e. the difference is increasing over time (e.g. individuals in unemployment). It is important to note that although increased reimbursement does not sufficiently increase accessibility to the dentist, the situation of this subgroup is improving over time.

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[b]   The output of the regression analysis on which the correction is based is available upon request.

Figure 2 – Inequality and inequity in the probability to have regular dental visits in the past 3 years: difference between the general population and population subgroups based on education, income, and self-assessed health
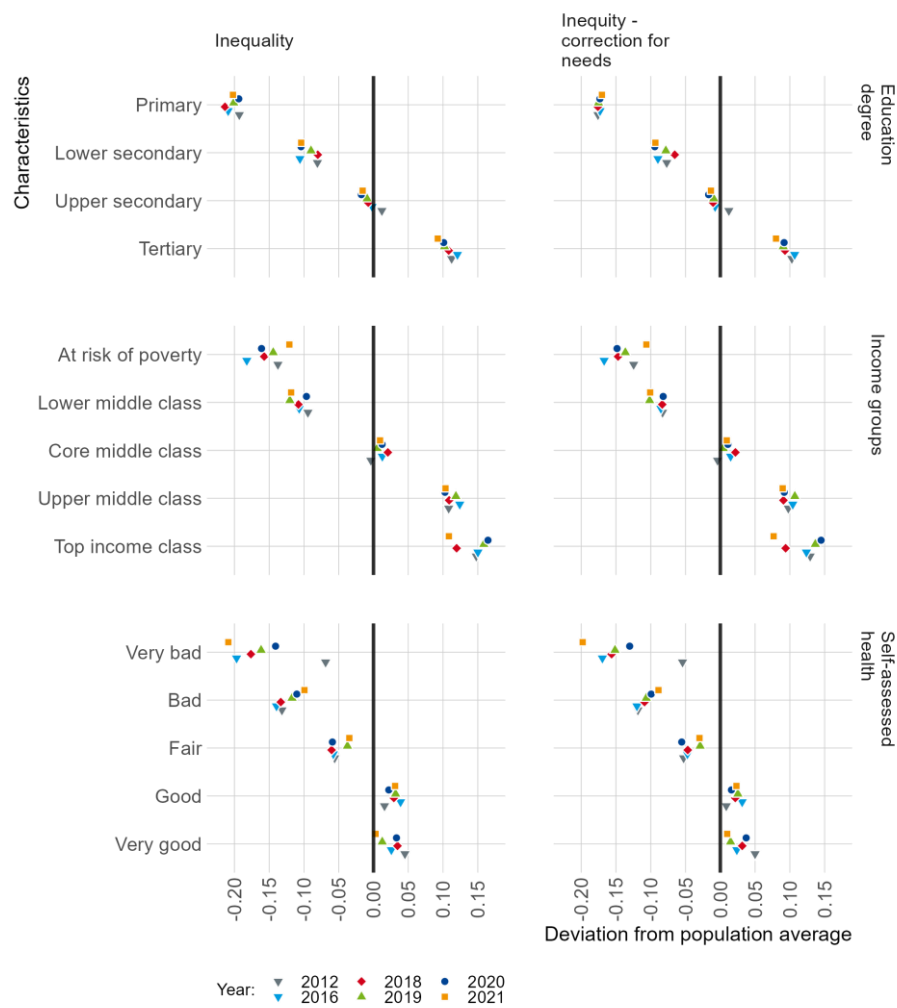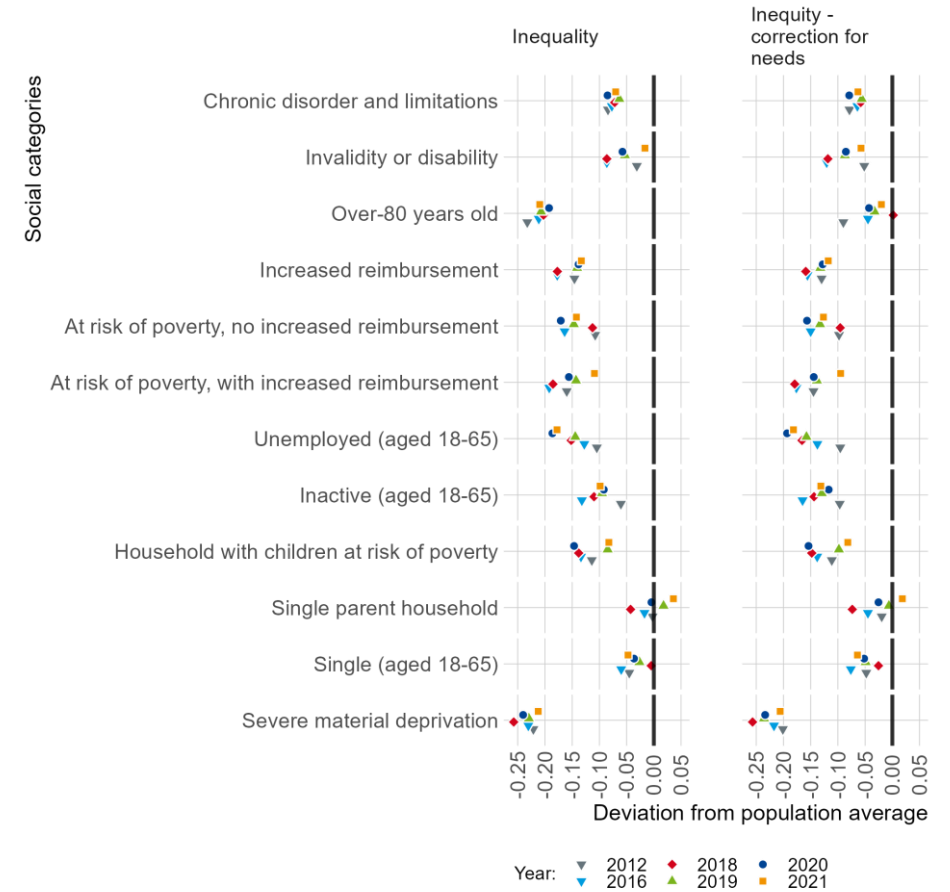

Figure 3 – Inequality and inequity in the probability to have regular dental visits in the past 3 years: difference between the general population and specific vulnerable population subgroups

Systematic socioeconomic inequity as measured by the concentration index

Figure 4 shows the absolute concentration index of the needs-corrected probability to have regular dental visits in the past 3 years to education and (equivalized) income. The absolute concentration index takes into account the entire distribution of care use in a similar way as the Gini index. Negative values of the concentration index should be interpreted as higher needs-corrected probabilities of having regular dental visits concentrated among individuals with lower educational attainment or lower income. Positive values indicate higher needs-corrected probabilities for individuals with higher educational attainment and higher income.

The results in Figure 4 indicate systematic and substantial socioeconomic inequalities and inequities in the probability to have regular dental visits, with higher probabilities concentrated among high-educated individuals and high-income individuals. Inequalities and inequities as measured by the concentration index are of similar magnitude have slightly decreased between 2016 and 2021.

Figure 4 – Evolution (2012-2021) of socioeconomic inequality and inequity in the probability to have regular dental visits in the past 3 years as measured by the absolute concentration index for subgroups based on education and income
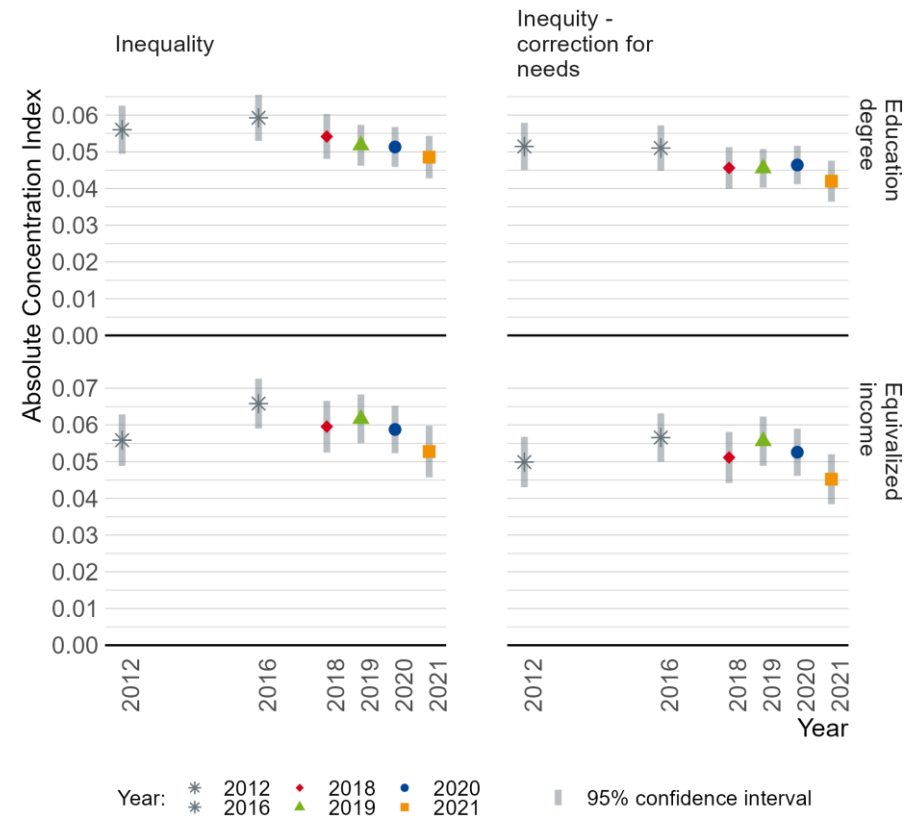
Key points

- **Only half of the Belgian population had regular dental contacts in the past 3 years. The EU-SILC/IMA-AIM survey value is higher, but follows the same upward trend over time. Higher contact rates are found among individuals with higher income, higher educational attainment and better health status.**

- **No specific variables are available to correct for dental care needs, hence only a correction is made for age and gender. Moreover, one could argue that regular dental care and in particular regular preventive dental care is recommended regardless of health status.**

- **After correction for age and gender, there are important socioeconomic inequities in the probability to have regular dental visits. Clear social gradients are found with regard to income class and educational attainment with contact rates increasing with income and level of education. Inequities in the probability to have regular dental visits are found for all financially vulnerable population subgroups and in particular for individuals in households with severe material deprivation. Both improving (e.g. individuals at risk of poverty with increased reimbursement) and deteriorating (e.g. unemployed persons) trends over time are observed.**

- **After correction for age and sex, lower contact rates are found for beneficiaries of increased reimbursement.**

- **The concentration index demonstrates systematic and substantial inequities by income (pro-rich: in favour of high-income individuals) and educational attainment (in favour of high-educated individuals). Inequities slightly decreased over time.**

References

1. Bouckaert N, Maertens de Noordhout C, Van de Voorde C. Health System Performance Assessment: how equitable is the Belgian health system? Health Services Research (HSR). Brussel: Belgian Health Care Knowledge Centre (KCE); 2020. KCE Reports 334 Available from: https://doi.org/10.57598/R334C

2. IMA-AIM Atlas. 2023. Available from: https://atlas.ima-aim.be/databanken/