1.1. Contacts with the healthcare system (number of contacts and at least one contact): medical specialist (population aged 18+) (EQ-3)

1.1.1. Documentation sheet

Description	EQ-3 At least one contact with the healthcare system (medical specialist) (population aged 18+)
	Number of contacts with the healthcare system (medical specialist) (population aged 18+)
Calculation	We analyse inequity in contacts with a medical specialist over the past 12 months. Two types of utilisation are examined consecutively: the probability of a contact with a medical specialist and the number of contacts with a medical specialist given at least one contact.
	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
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 contacts with a medical specialist
	• the qualification of the healthcare provider (variable ss00065B in IMA – AIM GZSS database) not equal to 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9
	• one of the following nomenclature codes (variable ss00020 in IMA – AIM GZSS database): 101275, 101290, 101592, 101614, 101636, 101651, 101835, 101872, 101990, 102012, 102034, 102071, 102093, 102115, 102130, 102152, 102174, 102196, 102211, 102233, 102255, 102270, 102292, 102314, 102336, 102351, 102373, 102535, 102550, 102572, 102594, 102616, 102631, 102653, 102675, 102690, 102712, 102734, 102756, 102815, 102830, 102874, 102896, 102911, 102933, 102955, 102970, 102992, 103014, 103051, 103073, 103250, 103456, 103471, 103493, 103504, 103736, 103751, 103773, 103795, 103810, 103832, 104812, 104834, 104856, 104871, 105372, 105394, 105416, 105431, 105453, 105475, 105490, 105512, 105534, 105556, 105571, 105593, 105615, 105630, 105652, 105674, 105696, 105711, 105733, 105755, 105770, 105792, 105814, 105836, 105851, 105873, 105895, 105910, 105932,

	105954, 105976, 105991, 106293, 106315, 106330, 106352, 106374, 106396, 106411, 106433, 106455, 106470, 109336, 109351, 109410, 109513, 109535, 109550, 109572, 109631, 109653, 109675, 101135, 109012
International comparability	No
Limitations	See methodological note on equity in healthcare use
Dimension	Equity
Related indicators	EQ-1 Contacts with the healthcare system (number of contacts and at least one contact): general practitioner, medical specialist, emergency department (population aged 18+)
	EQ-2 Contacts with the healthcare system (number of contacts and at least one contact): general practitioner (population aged 18+)
	EQ-4 Contacts with the healthcare system (number of contacts and at least one contact): emergency department (population aged 18+)
	EQ-5 Contacts with the healthcare system (number of contacts and at least one contact): inpatient hospitalisation (population aged 18+)
	A-4 Households facing catastrophic out-of-pocket payments (% of respondents, HBS)
	A-6 People with self-reported unmet needs for medical examination due to financial reasons (% of respondents 16+, EU-SILC)
Reviewers	Carine Van de Voorde (KCE)

1.1.2. Results – at least one contact with a medical specialist

Evolution over time in the probability to have at least one contact with a medical specialist

Table 1 shows the evolution over time of the probability to have one or more contacts with a medical specialist in the past year. According to IMA – AIM population data, between 61% and 63% of the insured population has had at least one contact with a medical specialist over the past 12 months, with a substantial drop to 58.3% in COVID-19 year 2020.[2] Among the individuals included in the EU-SILC/IMA-AIM sample, the fraction of interviewed individuals who have consulted a medical specialist at least once in the past year is somewhat higher (by 2 to 3 percentage points), but shows the same drop in 2020. The probability to consult a medical specialist is higher (by 2 to 3 percentage points) when restricting the sample to the adult population aged 18 or more, which is used in the regression and inequity analysis.

Table 1 – Evolution (2012-2021) of the probability to have one or more contacts with a medical specialist in the past year

Sample	2012	2016	2018	2019	2020	2021
Population	61.9%	62.9%	62.4%	62.5%	58.3%	61.3%
Survey (all)	63.6%	65.4%	65.0%	66.1%	61.1%	64.3%
Survey (18+)	64.5%	67.2%	67.3%	68.0%	63.4%	66.1%

Figure 1[a] shows the evolution of the probability to have one or more contacts with a medical specialist in the past year 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 slight increase up to 2019 and a drop in 2020. There are, however, some exceptions. We find a decrease over time in the probability to consult a medical specialist for individuals at risk of poverty but without increased reimbursement, individuals with severe material deprivation, self-employed individuals and individuals with (very) bad self-assessed health (panels B, D & E). Second, while we found that individuals in the top income class or with a tertiary degree had the lowest probabilities to consult a GP compared to individuals in other income classes or other education degrees (EQ-2), these groups have relatively higher probabilities to consult a medical specialist (panels A & C). Third, there is relatively little variation in the probability to consult a medical specialist by income level (panel A). However, among individuals at risk of poverty, there is a wide and increasing gap between individuals with and without increased reimbursement of less than 5 percentage points in 2012 and more than 10 percentage points in 2021 (panel B). Fourth, individuals with high care needs, i.e. those in bad health with chronic disorder and limitations, invalidity or disability have the highest probability to have a contact with a medical specialist (over 77%) (panel F). In addition, individuals who benefit from increased reimbursement are also more likely to have a contact with a medical specialist than other financially vulnerable groups (panel B). In particular individuals at risk of poverty but without increased reimbursement, individuals with severe material deprivation, self-employed individuals and unemployed individuals have low contact rates (panels B & D).

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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 at least one specialist contact 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 a contact with a medical specialist in the past year 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] 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 a contact with a medical specialist 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.

Contrary to the assessment of inequities of GP care (EQ-2) or healthcare contacts in general (EQ-1), we find in Figure 2 and Figure 3 that socioeconomic disparities are often more pronounced once a correction is made for healthcare needs, i.e. the deviations from the population average are larger in the inequity scenario compared to inequality. This is especially true for subgroups based on income and educational attainment. Also the value of the socioeconomic inequities is larger than for GP care (EQ-2) or healthcare contacts in general (EQ-1).

We conclude

- **w.r.t. education:** after correction for healthcare needs, there is a clear social gradient in the probability to have a contact with a medical specialist with lower/higher contact rates among individuals with lower/higher educational attainment (column inequity). Simply looking at inequalities paints a different picture with higher contact rates among low-educated individuals.

- **w.r.t. income group:** after correction for healthcare needs, we observe a clear social gradient with contact rates increasing with income (column inequity). Inequalities on the other hand were minor.

- **w.r.t. self-assessed health**: individuals in fair, bad and very bad self-reported health have a higher probability of having a contact with a medical specialist, while the opposite is true for individuals with very good health (column inequality). Such differences are nearly absent when a correction for healthcare needs is made (column inequity).

- **w.r.t. specific vulnerable groups:** after correction for healthcare needs, there is a lower probability of having a contact with a medical specialist in the past year in nearly all financially vulnerable population groups (column inequity). The lower probability is particularly pronounced for individuals who are unemployed, individuals in households with severe material deprivation, individuals at risk of poverty but without increased reimbursement, and individuals in households with children at risk of poverty (column inequity). In some cases there is a positive evolution over time, i.e. the average is evolving towards the population average (e.g. unemployed individuals), but in other cases the situation is deteriorating, i.e. the difference is increasing over time (e.g. individuals with severe material deprivation). Beneficiaries of increased reimbursement also have a probability to have a contact with a medical specialist below the population average after correcting for needs. The latter is striking, as the probability to consult a GP or have a healthcare contact in general for this group was in line with the population average (EQ-1, EQ-2).

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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 a contact with a medical specialist in the past year: difference between the general population and population subgroups based on education, income and self-assessed health
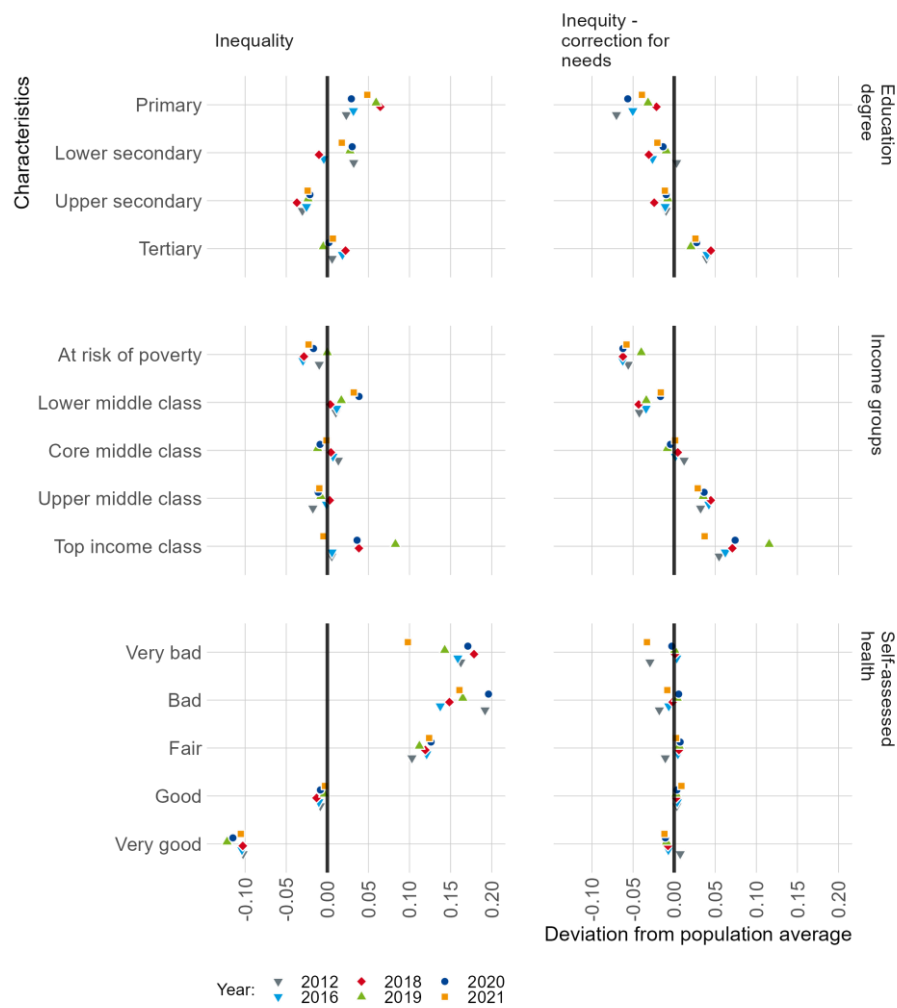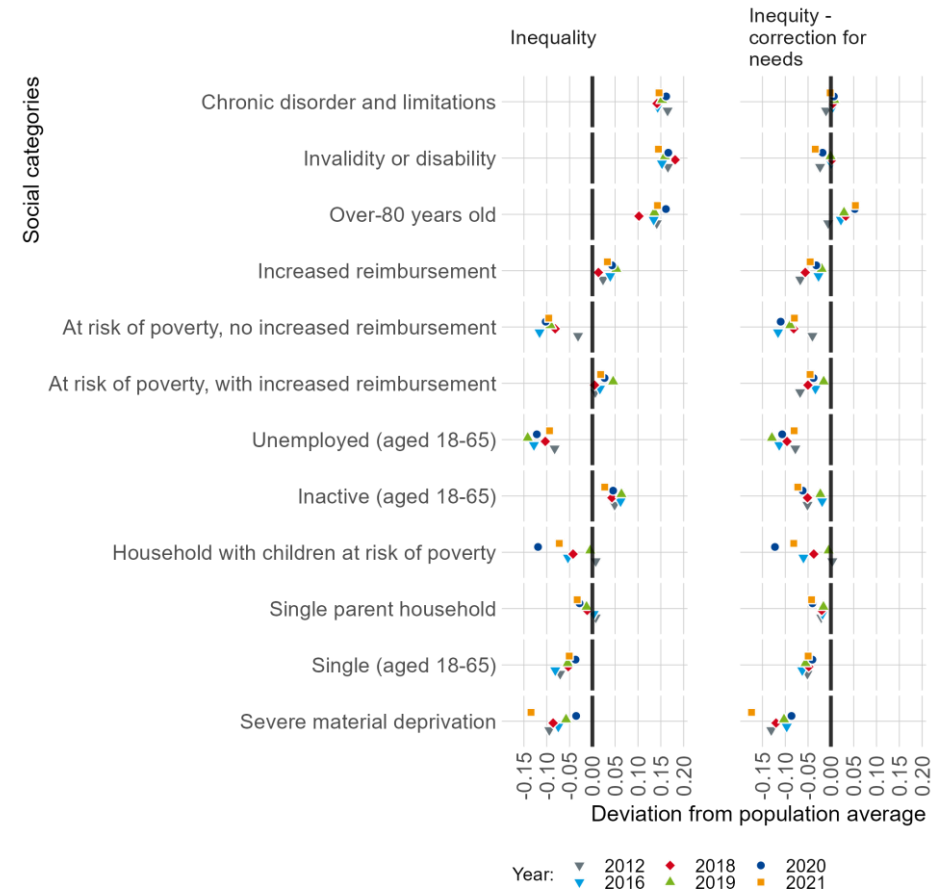
Figure 3 – Inequality and inequity in the probability to have a contact with a medical specialist in the past year: difference between the general population and specific vulnerable population subgroups

Systematic socioeconomic inequity as measured by the concentration index

Figure 4 shows the absolute concentration index of the needs-corrected probability to have a contact with a medical specialist in the past year 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 a contact with a medical specialist 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 show that there are no socioeconomic inequalities in the probability to have a contact with a medical specialist in the past year regarding educational attainment or income. After correction for needs, systematic socioeconomic inequities are found with regard to both income (pro-rich: in favour of more affluent individuals) and educational attainment (in favour of high-educated individuals). The inequities have decreased somewhat between 2018 and 2021.

Figure 4 – Evolution (2012-2021) of socioeconomic inequality and inequity in the probability to have a contact with a medical specialist in the past year as measured by the absolute concentration index for subgroups based on education and income
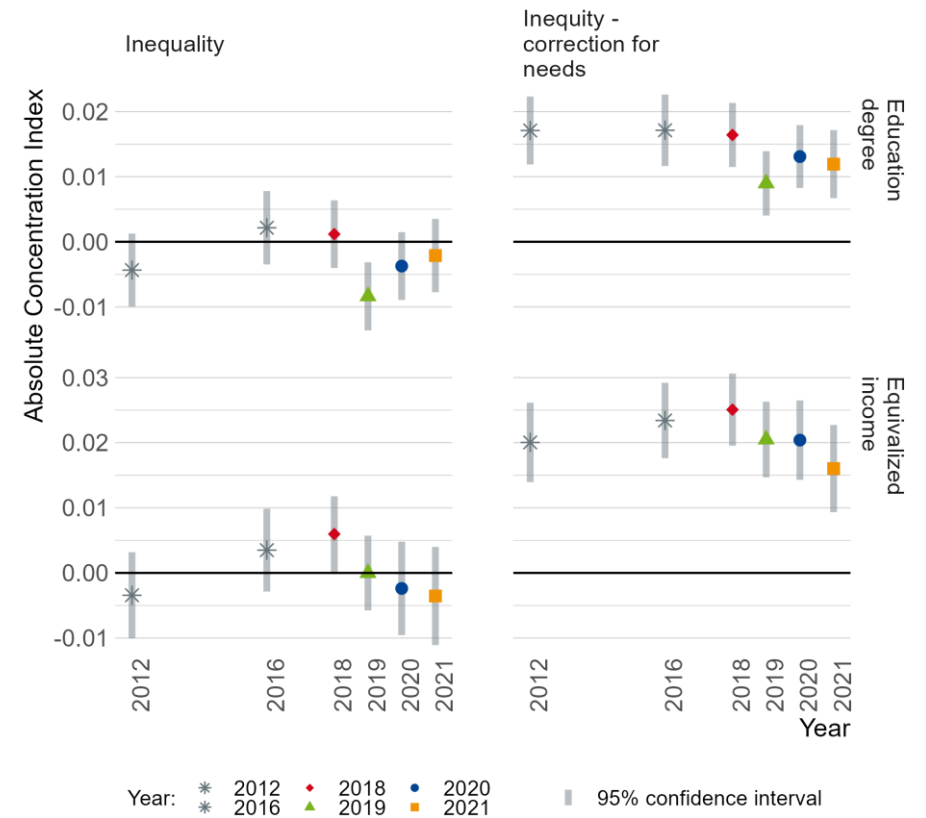
Key points

- **Over 60% of the population consulted a medical specialist in the past year; over 77% among high care groups. There was a substantial drop in contact rates in 2020. EU-SILC/IMA-AIM survey contact rates are somewhat higher than population averages. Among individuals at risk of poverty, there is a wide and increasing gap between individuals with and without increased reimbursement. The latter group is one of the few population groups with decreasing contact rates over time, together with individuals in households with severe material deprivation and self-employed individuals.**

- **After correction for needs, there are important socioeconomic inequities in the probability to have a contact with a medical specialist. 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 consult a specialist are also found for individuals who are unemployed, individuals in households with severe material deprivation, individuals at risk of poverty but without increased reimbursement, and individuals in households with children at risk of poverty. Both improving (e.g. unemployed individuals) and deteriorating (e.g. individuals with severe material deprivation) trends over time are observed.**

- **After correction for needs, we also found a lower contact rate for beneficiaries of increased reimbursement. Hence, access to specialist care is less equitably distributed than access to GP care.**

- **While no socioeconomic inequalities are found, the concentration index clearly demonstrates systematic inequities by educational attainment (in favour of high-educated individuals) and income (pro-rich: higher contact rates among richer individuals).**

1.1.3. Results – number of contacts with a medical specialist

Evolution over time in the number of contacts with a medical specialist in the past year

From Table 1 and Figure 1, we concluded that a high share of the population (between 58% and 68%, depending on year and sample) had at least one contact with a medical specialist in the past year. Table 2 and Figure 5 additionally show the evolution over time of the number of contacts with a medical specialist in the past year for individuals with at least one contact. IMA – AIM population data indicate that for individuals with at least one contact, the average number of contacts fluctuated between 4.3 and 4.7 on average, without a substantial drop in 2020.[2] Among the individuals included in the EU-SILC/IMA-AIM sample, we find a highly similar average annual number of contacts. Conditional on having at least one specialist consultation in the past year, the average number of contacts per individual fluctuated between 4.3 and 4.8 annual contacts per year. The number of contacts is higher when restricting the sample to the adult population (+0.2/0.3 contacts per year), but follows the same time pattern.

Note that the average number of contacts with a medical specialist amounts to about half of the number of healthcare contacts (EQ-1).

Table 2 – Evolution (2012-2021) of the number of contacts with a medical specialist in the past year

Sample	2012	2016	2018	2019	2020	2021
Population	4.30	4.50	4.50	4.50	4.30	4.70
Survey (all)	4.34	4.43	4.61	4.68	4.41	4.79
Survey (18+)	4.54	4.62	4.91	4.96	4.67	5.04

Figure 5[c] shows the evolution of the number of contacts with a medical specialist conditional on having at least one contact for a variety of population subgroups (adult population). These are the crude trends, without a correction for healthcare needs.

First, we find that most population groups follow a similar trend as the population. Second, there is little variation between groups based on income, educational attainment or even financial vulnerability (panels A, B & C). Beneficiaries of increased reimbursement do not have a higher number of specialist consultations compared to other individuals in a difficult financial situation (panel B). There is, however, important variation by self-assessed health status and between population subgroups with high care needs (panels E & F). Age is less of a determinant of the number of contacts with a medical specialist than of GP contacts (panel F). Third, while individuals who qualify their health status as fair and (very) bad have a similar probability to have a contact with a medical specialist (see Table 1), there is a divergence in the average number of consultations (panel E). Fourth, the number of contacts with a medical specialist is below average for the self-employed, but increasing at a more rapid pace (panel D).

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[c] 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 5 – Evolution (2012-2021) in the number of specialist contacts in the past year for different subgroups and population groups at risk
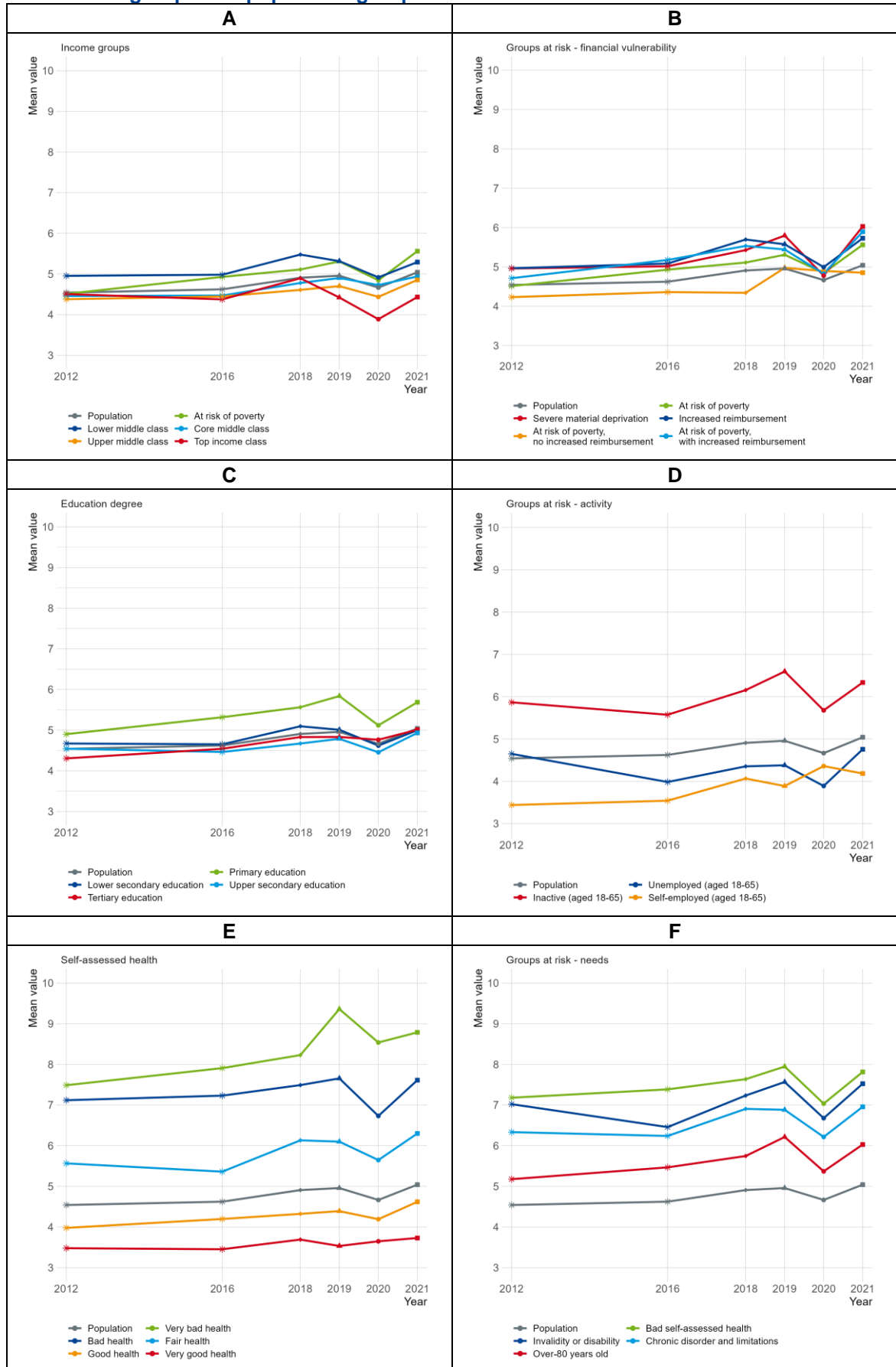
Overview inequity over time for different population subgroups

Figure 6 and Figure 7 show how the number of contacts with a medical specialist 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.[d] In Figure 6, population groups are defined based on categories of equivalized income, categories of educational attainment, and categories of self-assessed health. In Figure 7, 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 number of contacts with a medical specialist than the population average. Values to the right of the vertical line, on the other hand, indicate a higher number of contacts 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.

In both Figure 6 and Figure 7, we find that inequalities in the number of contacts with a medical specialist can be important (range between -1.5 and +4 contacts) and in favour of individuals with worse health status and in inactivity. For other population groups inequalities are smaller, generally less than 1 contact, in favour of low-educated and low-income individuals, beneficiaries of increased reimbursement and individuals in households with severe material deprivation.

After correction for healthcare needs, disparities are of similar magnitude, but opposite sign. There are social gradients for education and income groups with the number of contacts increasing with income and obtained education degree. Almost all financially vulnerable population subgroups have a lower average number of specialist consultations than expected based on their health status, without a particular group being more disadvantaged. There is no systematic improving or deteriorating time pattern.

Systematic socioeconomic inequity as measured by the concentration index

Figure 8 shows the absolute concentration index of the needs-corrected number of contacts with a medical specialist in the past year 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 a higher needs-corrected number of contacts with a medical specialist concentrated among individuals with lower educational attainment or lower income. Positive values indicate a higher needs-corrected number of contacts with a medical specialist for individuals with higher educational attainment and higher income.

The results in Figure 8 reveal the presence of small socioeconomic inequalities and larger inequities in the number of contacts with a medical specialist. While the socioeconomic inequalities indicate that specialist contacts are more concentrated among low-educated and low-income individuals, the found inequities are of opposite sign and give evidence of an inequitable distribution in favour of high-educated individuals high-income individuals. Inequities with respect to educational attainment have increased over time.

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

Figure 6 – Inequality and inequity in the number of contacts with a medical specialist in the past year: difference between the general population and population subgroups based on education, income and self-assessed health
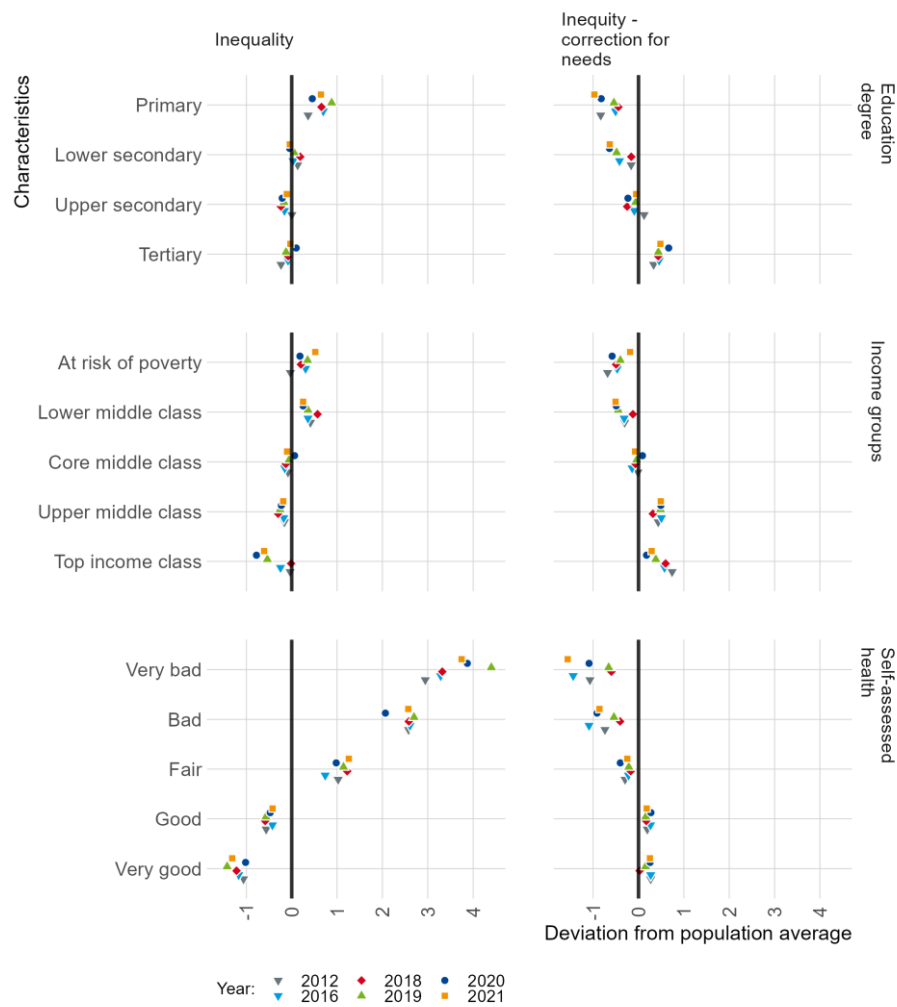
Figure 7 – Inequality and inequity in the number of contacts with a medical specialist in the past year: difference between the general population and specific vulnerable population subgroups
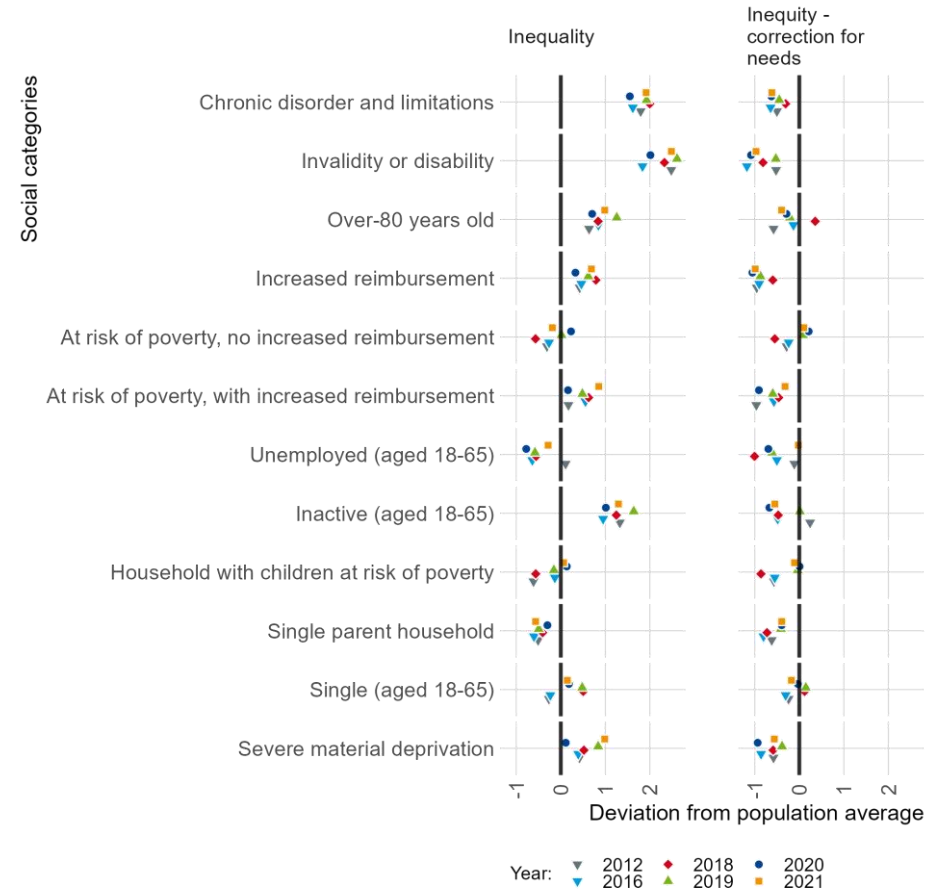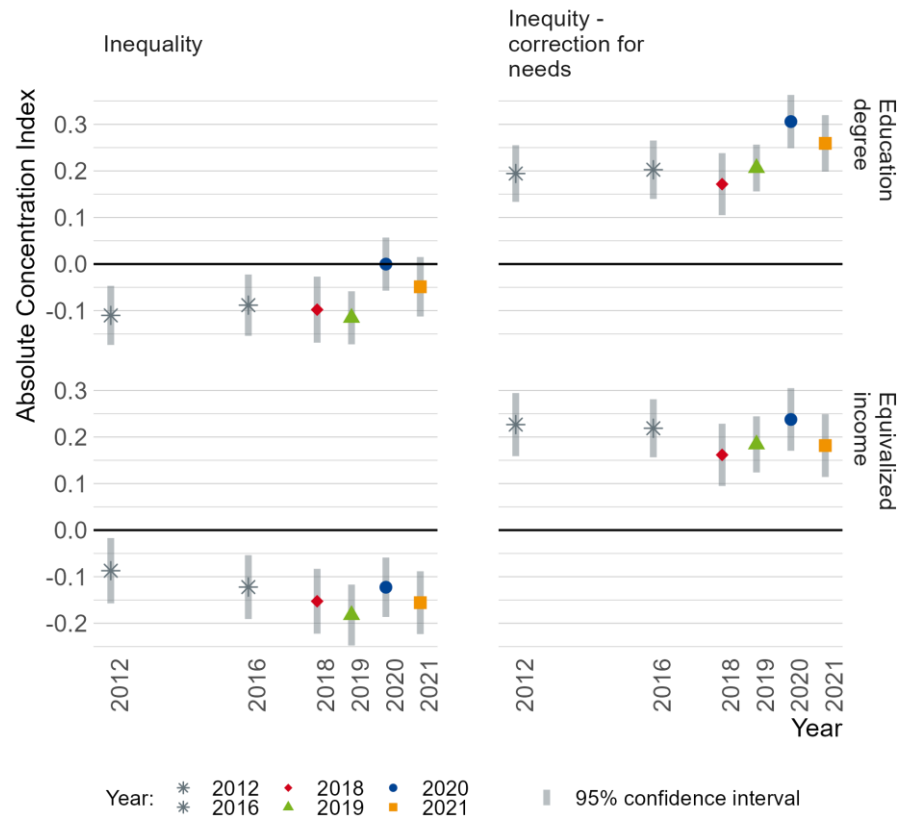
Figure 8 – Evolution (2012-2021) of socioeconomic inequality and inequity in the number of contacts with a medical specialist in the past year as measured by the absolute concentration index for subgroups based on education and income

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/

Key points

- The average annual number of contacts with a medical specialist (among those with at least one specialist contact) increased from 4.3 in 2012 to 4.7 in 2021 and had the same evolution in the survey sample. There is little variation in the annual number of contacts and the evolution over time between groups based on income, educational attainment or financial vulnerability. There is important variation by self-assessed health status and between population subgroups with high care needs. Age is less of a determinant of the number of contacts with a medical specialist than of GP contacts.

- Socioeconomic inequalities and inequities contradict each other, emphasizing the importance of a correction for healthcare needs.

- After correction for needs, social gradients are found for education and income with the number of contacts increasing with income and obtained education degree. Almost all financially vulnerable population subgroups have a lower average number of specialist consultations than expected based on their health status.

- The concentration index demonstrates systematic socioeconomic inequities both with respect to educational attainment (in favour of high-educated individuals) and income (pro-rich: in favour of high-income individuals). Inequities with respect to educational attainment have increased over time.