

1.1. Contacts with the healthcare system (number of contacts and at least one contact): general practitioner, medical specialist, emergency department (population aged 18+) (EQ-1)

1.1.1. Documentation sheet

Description	EQ-1 At least one contact with the healthcare system (general practitioner, medical specialist, emergency department) (population aged 18+) Number of contacts with the healthcare system (general practitioner, medical specialist, emergency department) (population aged 18+)
Calculation	<p>We analyse inequity in contacts with the healthcare system over the past 12 months. A contact with the healthcare system refers to a consultation of a GP or a specialist or a contact with the emergency department. Two types of utilisation are examined consecutively: the probability of a contact and the number of contacts given at least one contact.</p> <p>Individuals who are registered in a community health centre are excluded from the analysis as no registration in the IMA – AIM database is made for a GP consultation.</p> <p>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:</p> <ul style="list-style-type: none"> • 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	<p>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.</p> <p>Definition of types of healthcare</p> <ul style="list-style-type: none"> • A contact with a general practitioner (GP) is defined as: <ul style="list-style-type: none"> • the qualification of the healthcare provider (variable ss00065B in IMA – AIM GZSS database) 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): 101010, 101032, 101076, 103110, 103132, 103213, 103235, 103412, 103434, 103913, 104112, 104215, 104230, 104252, 104355, 104510, 104532, 104554, 104650, 101135, 109012

- A contact with a medical specialist is defined as:
 - 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
- A contact with the emergency department (ED) is defined as:
 - one of the following nomenclature codes (variable ss00020 in IMA – AIM GZSS database): 590516, 590531, 590553, 590575, 590590, 590612, 590634, 590656, 590671, 590693, 590715, 590730, 590752, 590774, 590796, 590811

Exclusion criteria: Persons registered in a community health centre. Individuals with a registration of nomenclature code 109616 at any point throughout the year are considered to be enrolled in a community health centre and excluded from the analysis.

International comparability	No
Limitations	See methodological note on equity in healthcare use
Dimension	Equity
Related indicators	EQ-2 Contacts with the healthcare system (number of contacts and at least one contact): general practitioner (population aged 18+) EQ-3 Contacts with the healthcare system (number of contacts and at least one contact): medical specialist (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 the healthcare system (GP, medical specialist, ED)

Evolution over time in the probability to have at least one healthcare contact

Table 1 shows the evolution over time of the probability to have one or more healthcare contacts in the past year. There was no aggregate population value of this indicator, hence only the probability in the EU-SILC/IMA-AIM survey sample is reported, both for the entire sample and the sample restricted to adults. Over 90% of the population has visited the ED or consulted a GP or medical specialist in the past year. This high fraction is relatively stable over time and increased with a few percentage points between 2012 and 2021, going from 90.2% in 2012 to 92.7% in 2021. The probability is highly similar 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 healthcare contacts in the past year

Sample	2012	2016	2018	2019	2020	2021
Survey (all)	90.2%	91.1%	91.3%	91.4%	90.6%	92.7%
Survey (18+)	90.6%	91.6%	91.6%	91.6%	91.1%	92.5%

Figure 1^a shows the evolution of the probability to have one or more healthcare contacts in the past year for a variety of population subgroups (adult population). These are the crude trends, without a correction for healthcare needs.

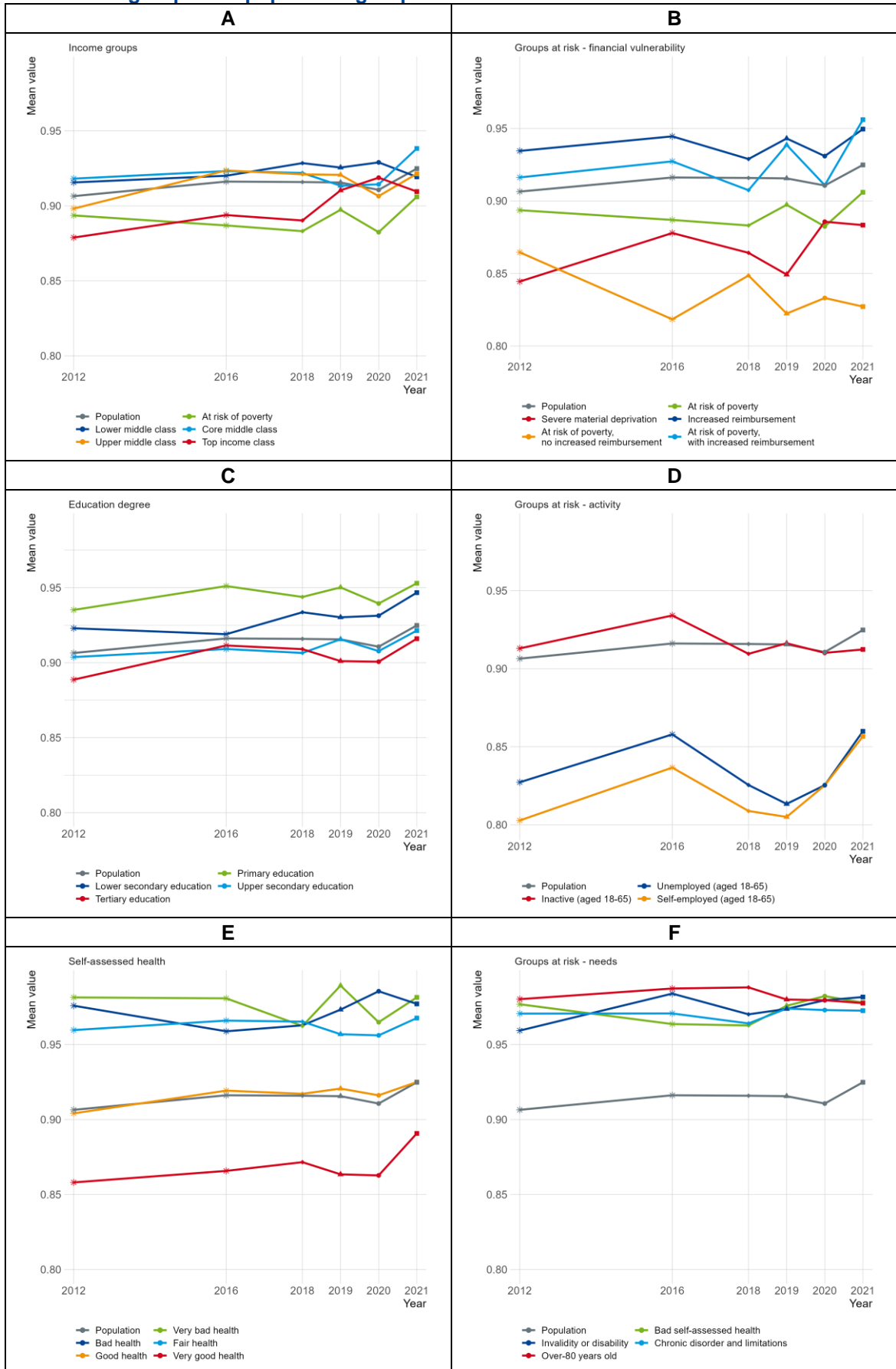
^a Note the analysis is based on a survey sample and that results for some population subgroups are based on a small number of observations (e.g. over-80 years old, very bad self-assessed health, at risk of poverty without

Figure 1 indicates that for most population subgroup, there is a stable or slightly upward trend over time. There is a notable increase for individuals with severe material deprivation, individuals at risk of poverty but beneficiary of increased reimbursement, and individuals in very good health (particularly in 2021) (panels B & E). On the other hand, there is a slight decrease among individuals at risk of poverty but without increased reimbursement (panel B). A particular u-shaped pattern was found among self-employed and unemployed individuals (aged 18-65) with a decrease in probability between 2016 and 2019, followed by a steep rise in 2020 and 2021 (panel D).

There is relatively little variation in probability by income level or educational attainment (panels A & B). However, individuals in unemployment, self-employed individuals, individuals with severe material deprivation and individuals at risk of poverty but without increased reimbursement have a substantially lower probability to have a healthcare contact in the past year (panels B & D). 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 healthcare contact (over 95%) (panel F). Moreover, individuals who benefit from increased reimbursement are more likely to have a healthcare contact than other financially vulnerable groups (panel B).

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 healthcare 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 healthcare contact 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 equalized 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 healthcare contact 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.

In both Figure 2 and Figure 3, we find that, for most population subgroups, disparities are less pronounced once a correction is made for healthcare needs, i.e. the deviations from the population average are lower in the inequity scenario compared to inequality. This is especially true for subgroups based on age and (self-assessed) health status.

The inequity pattern is rather similar as for GP contacts (EQ-2). We conclude

- **w.r.t. education:** there is a higher probability to have a healthcare contact for individuals with primary education (column inequality), this is no longer the case after correcting for healthcare needs (column inequity).
- **w.r.t. income group:** after correcting for needs, we observe a gradient by income group, with lower contact rates in lower income groups. In particular the probability to have a healthcare contact of individuals at risk of poverty is lower than the population average.

- **w.r.t. self-assessed health:** individuals in fair, bad and very bad self-reported health have a higher probability of having a healthcare contact (column inequality), while the opposite is true for individuals with very good health. Such differences are nearly absent when a correction for healthcare needs is made (column inequity).
- **w.r.t. specific vulnerable groups:** there is a lower probability of having a healthcare contact in the past year among individuals who are unemployed, inactive, single (between 18 and 65), individuals at risk of poverty but without increased reimbursement, and individuals in households with severe material deprivation (column inequity). In some cases there is a positive evolution, 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 at risk of poverty but without increased reimbursement). Individuals who benefit from increased reimbursement have a probability to have a healthcare contact in line with the population average after correcting for needs, even in households at risk of poverty.

^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 healthcare contact in the past year: difference between the general population and population subgroups based on education, income and self-assessed health

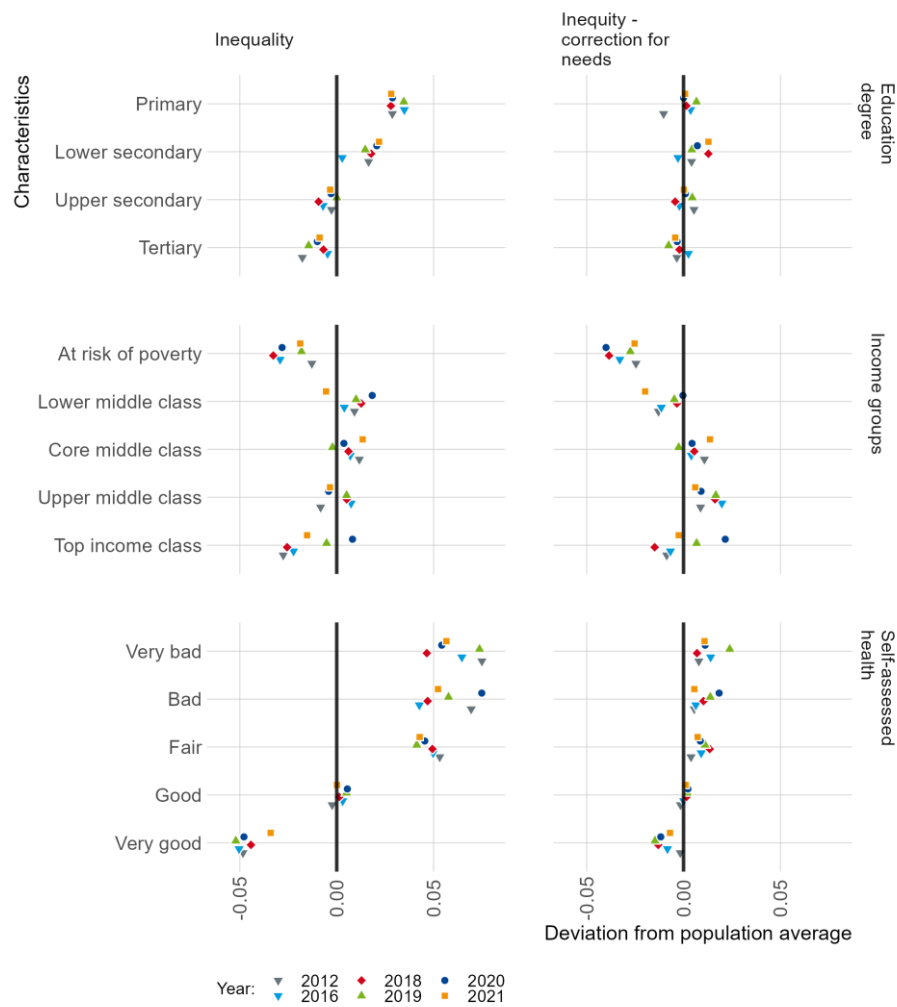
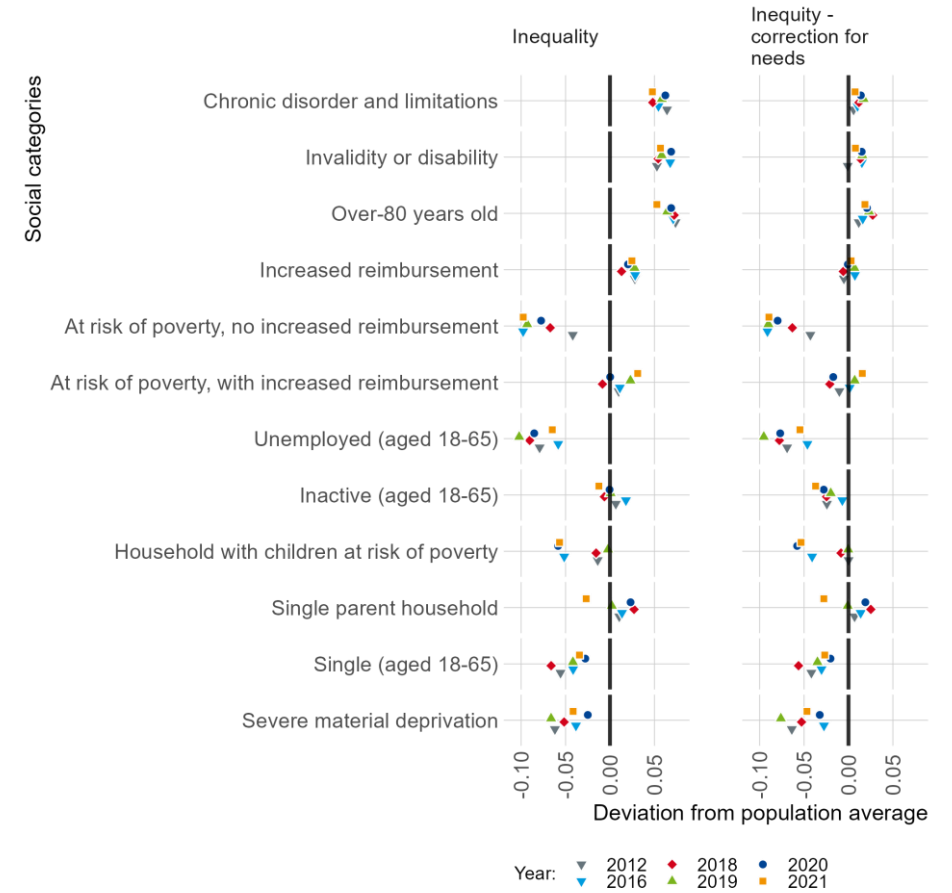


Figure 3 – Inequality and inequity in the probability to have a healthcare contact in the past year: difference between the general population and specific vulnerable population subgroups

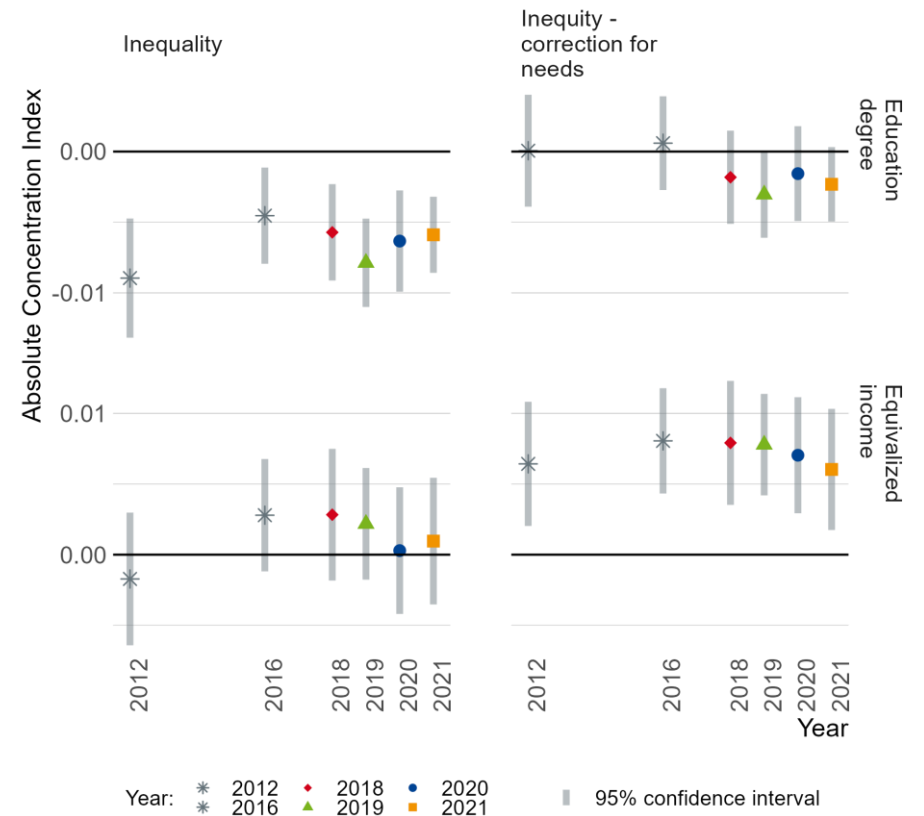


Systematic socioeconomic inequity as measured by the concentration index

Figure 4 shows the absolute concentration index of the needs-corrected probability to have a healthcare contact 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 healthcare contact 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 systematic inequalities in the probability to have a healthcare contact in the past year, with a higher use among low-educated individuals. No inequalities are found by income level. After correcting for needs, an analysis of inequity indicates the opposite, there are no significant inequities related to educational attainment. However, there are significant inequities with regard to income in favour of more affluent individuals after needs are taken into account. The inequities with respect to income are relatively stable over time.

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



Key points

- **Over 90% of the population had at least one healthcare contact in the past year; above 95% among high care groups (over-80 year olds, in (very) bad health, with chronic disorder and limitations, in invalidity). Individuals in unemployment, individuals with severe material deprivation and individuals at risk of poverty but without increased reimbursement have a substantially lower probability to have a healthcare contact in the past year.**
- **After correction for needs, inequities in the probability to have a healthcare contact remain. Lower probabilities are found for individuals at risk of poverty, unemployed individuals, inactive individuals, singles between 18 and 65 years old, individuals at risk of poverty but without increased reimbursement, and individuals in households with severe material deprivation. Both improving (e.g. unemployed individuals) and deteriorating (e.g. individuals at risk of poverty but without increased reimbursement) trends over time are observed.**
- **No inequities are found for beneficiaries of increased reimbursement, even if they are at risk of poverty. This suggests an improved accessibility for this group, that does not extend to other financially vulnerable groups.**
- **The concentration index demonstrates no systematic inequities by educational attainment and significant inequities by income (pro-rich: higher contact rates among richer individuals).**

1.1.3. Results – number of contacts with the healthcare system (GP, medical specialist, ED)

Evolution over time in the number of healthcare contacts in the past year

Table 2 and Figure 5 show the evolution over time of the number of healthcare contacts in the past year for individuals with at least one contact. There was no population average number of contacts that could be used as benchmark, hence only the number of contacts in the EU-SILC/IMA-AIM sample is reported, both for the entire sample and the sample restricted to adults. From Table 1 and Figure 1, we concluded that the probability of having at least one contact was high, over 90%, and increased with a few percentage points between 2012 and 2021. Table 2 and Figure 5 additionally indicate that conditional on having at least one contact in the past year, the average number of contacts per individual remained more or less stable over time between 8.4 and 8.9 contacts per year, but had a substantial increase in 2021 to 9.2 contacts. The number of contacts is higher when restricting the sample to the adult population (+0.6/0.7 contacts per year), but follows the same time pattern.

Table 2 – Evolution (2012-2021) of the number of healthcare contacts in the past year

Sample	2012	2016	2018	2019	2020	2021
Survey (all)	8.59	8.87	8.44	8.62	8.39	9.23
Survey (18+)	9.23	9.50	9.13	9.38	9.19	9.93

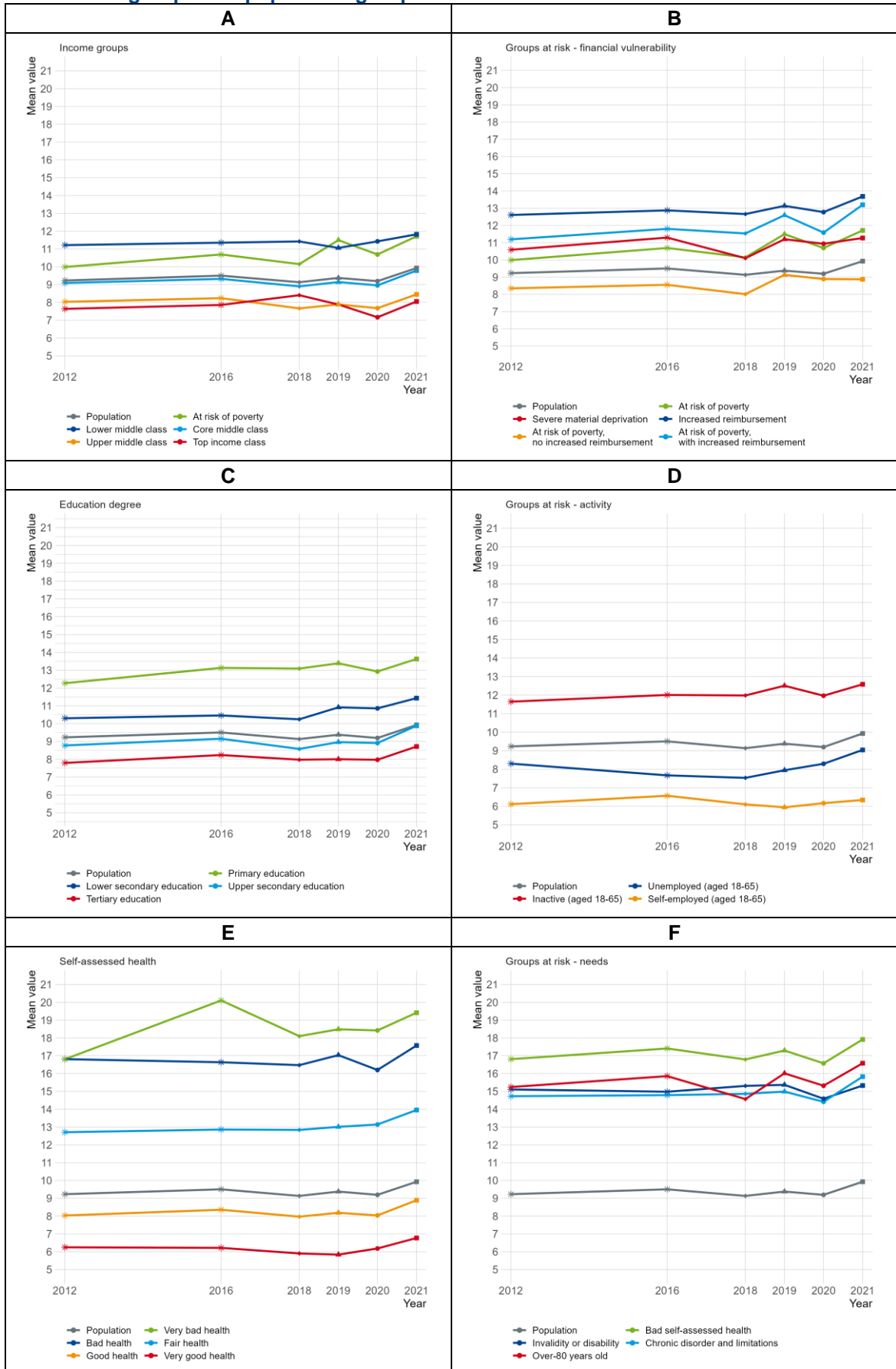
^c Note the analysis is based on a survey sample and that results for some population subgroups are based on a small number of observations (e.g.

Figure 5^c shows the evolution of the number of healthcare contacts 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 for most population groups the 2021 number of healthcare contacts is similar or higher compared to the 2012 value. Second, a higher number of healthcare contacts (annually between 14 and 18 on average, see panel F) is observed for individuals with high care needs, i.e. those in (very) bad health, with chronic disorder and limitations to daily activities, over-80 year olds and individuals with invalidity/disability. Third, while individuals who qualify their health status as fair and (very) bad have a similar probability to have a healthcare contact (see Table 1), there is a divergence in the average number of consultations (panel E). In general, there is a large difference in the number of contacts by self-assessed health status (less than 7 contacts on average in 2021 for individuals with very good health to more than 19 for individuals with very bad health). Fourth, there appears to be some financial issues related to the frequency at which a doctor is consulted. Individuals who experience severe material deprivation, have a number of contacts only slightly above the population average, while individuals at risk of poverty but without increased reimbursement have a number of contacts below the population average (panel B). It is striking in that sense that individuals at risk of poverty have in most years a lower number of contacts than individuals in the lower middle class, although this seems to have improved more recently (panel A). Finally, the subgroup of individuals with increased reimbursement, who benefit from reduced co-payments and for GP care from the mandatory third-party payer system, have a significantly higher number of contacts than the average number among individuals in a financial precarious situation (panel B).

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 healthcare 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 healthcare contacts 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 healthcare contacts 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 healthcare contacts can be important (range between -4 and +10 contacts) and in favour of individuals with worse health status, with low educational attainment, in inactivity, in invalidity, with low income, with increased reimbursement, and over-80 year olds. After correcting for healthcare needs, disparities are much less pronounced, i.e. the deviations from the population average are generally small or have disappeared (range between -2 and 1). The conditional number of healthcare contacts is below the population average for the unemployed, for individuals in invalidity, individuals in households with severe material deprivation and individuals at risk of poverty but without increased reimbursement, although for the latter group the situation is improving over time. On the other hand, for over-80 year olds, and individuals with increased reimbursement, we find that the number of healthcare contacts is above the population average even when accounting for healthcare needs.

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

Systematic socioeconomic inequity as measured by the concentration index

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

The results in Figure 8 reveal the presence of socioeconomic inequalities in the number of healthcare contacts both with respect to educational attainment (in favour of lower educated individuals) and income (in favour of low-income individuals). After correction for healthcare needs, disparities are much smaller and generally not significant, implying that there are no systematic inequities in the conditional number of healthcare contacts in the past year. Although not significant, the sign of the absolute concentration index for income has, however, reversed over time from positive (pro-rich) to negative (pro-poor).

Figure 6 – Inequality and inequity in the number of healthcare contacts in the past year: difference between the general population and population subgroups based on education, income and self-assessed health

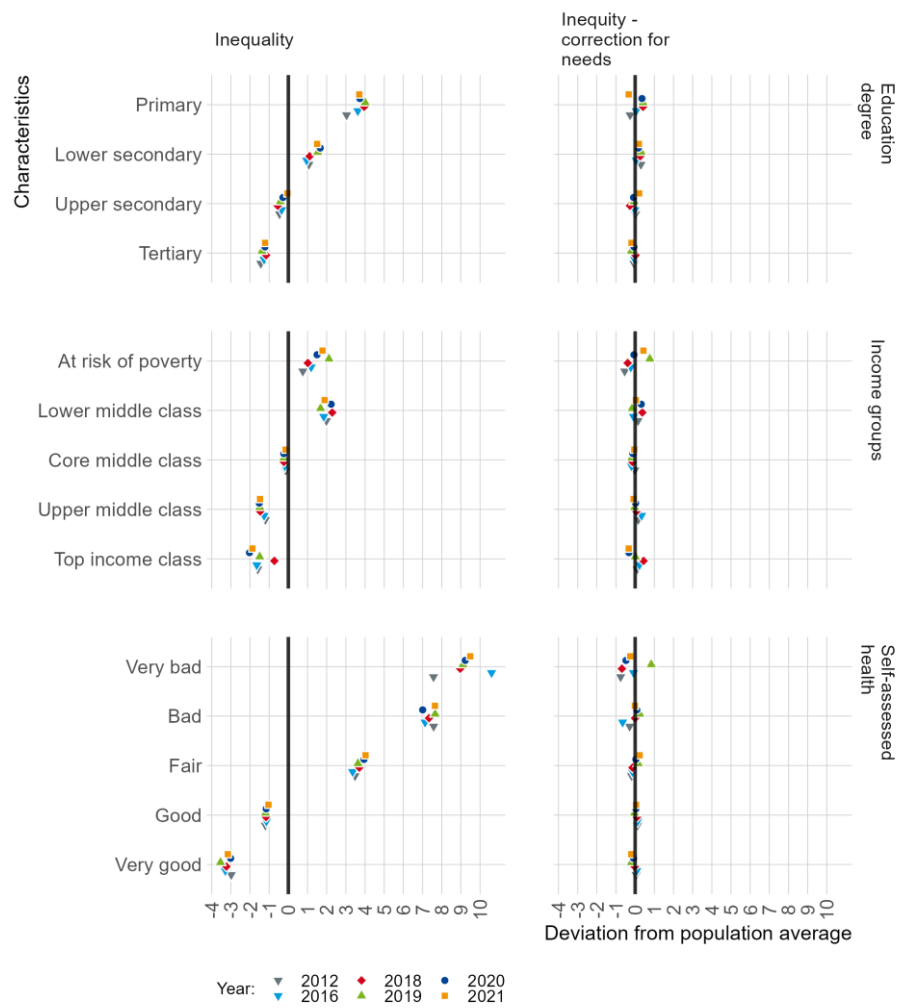


Figure 7 – Inequality and inequity in the number of healthcare contacts in the past year: difference between the general population and specific vulnerable population subgroups

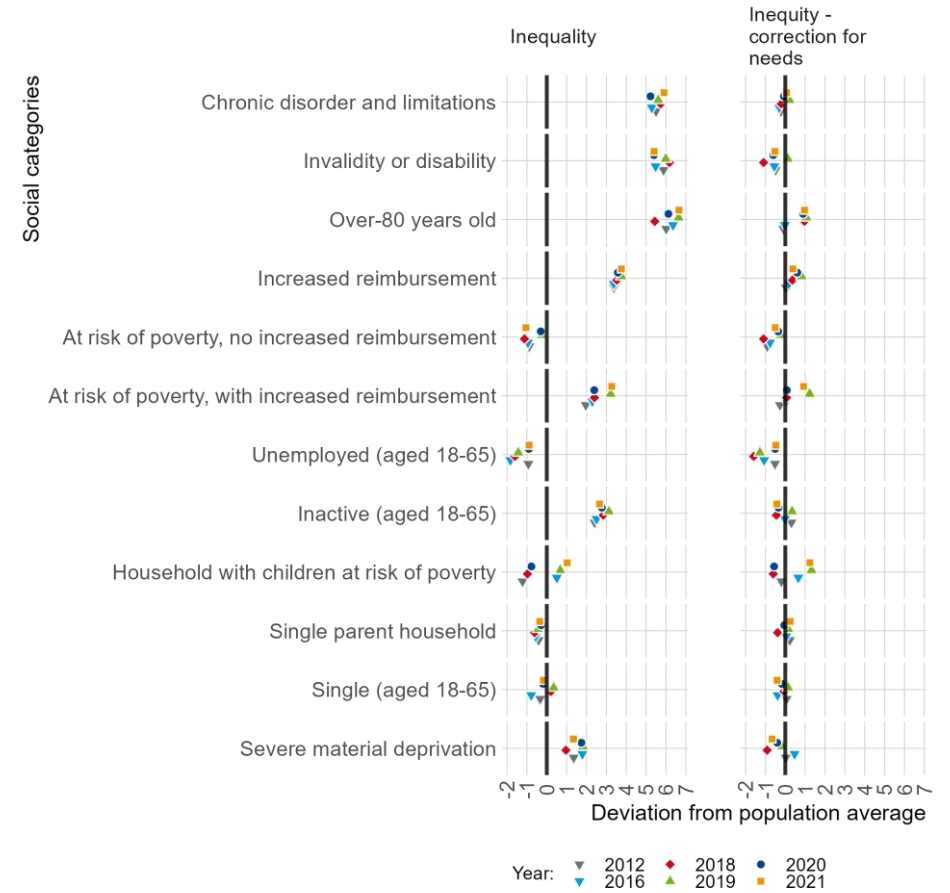
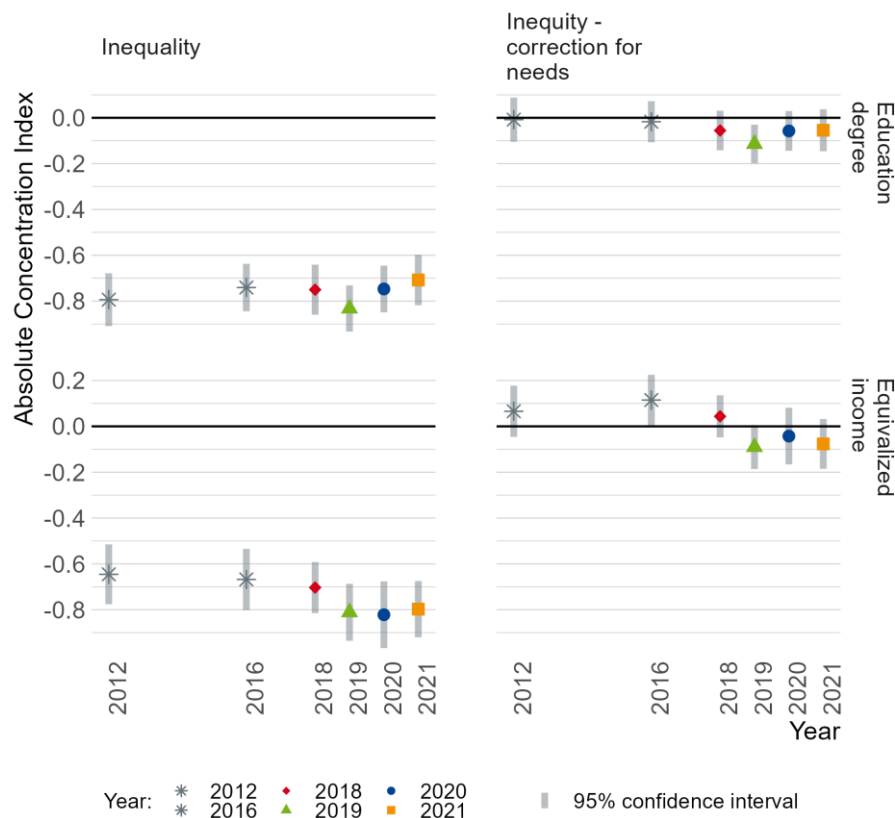


Figure 8 – Evolution (2012-2021) of socioeconomic inequality and inequity in the number of healthcare contacts in the past year as measured by the absolute concentration index for subgroups based on education and income



Key points

- The average annual number of healthcare contacts (among those with at least one contact) increased from 9.2 in 2012 to 9.9 in 2021 among the survey sample (18+), with a particularly substantial rise in 2021. There is large variation in the average annual number of healthcare contacts between population subgroups, but little variation over time within each subgroup. The number of contacts is strongly associated with health status and to a lesser extent with the financial situation.
- After correction for needs, inequities in the conditional number of healthcare contacts are small (generally less than 1 contact per year on average). A lower number of contacts is found for the unemployed, for individuals in invalidity, individuals in households with severe material deprivation and individuals at risk of poverty but without increased reimbursement, although for the latter group the situation is improving over time.
- No inequities are found for beneficiaries of increased reimbursement, even if they are at risk of poverty.
- The concentration index demonstrates no systematic inequities by educational attainment or income. Although not significant, the sign of the absolute concentration index for income has, however, reversed over time from positive (pro-rich) to negative (pro-poor).

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>