

## 1.1. Contacts with the healthcare system (number of contacts and at least one contact): general practitioner (population aged 18+) (EQ-2)

### 1.1.1. Documentation sheet

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|------------------------------|--|
| <b>Description</b>           | EQ-2 At least one contact with the healthcare system (general practitioner) (population aged 18+)<br>Number of contacts with the healthcare system (general practitioner) (population aged 18+)  |
| <b>Calculation</b>           | <p>We analyse inequity in contacts with a general practitioner (GP) over the past 12 months. Two types of utilisation are examined consecutively: the probability of a GP contact and the number of GP 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 <b>fairness gap</b> 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"><li>• Differences in the fairness gap by socioeconomic status, e.g. income or educational attainment, in comparison to the general population.</li><li>• 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.</li><li>• 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).</li></ul> |
| <b>Rationale</b>             | See methodological note on equity in healthcare use  |
| <b>Data source</b>           | 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.<br>KCE report 334 for years 2012, 2016 <sup>1</sup>   |
| <b>Technical definitions</b> | <p>The calculation of the <b>fairness gap</b> and definition of socioeconomic and other population groups are described in the methodological note on equity in healthcare use.</p> <p><b>Definition of GP contacts</b></p> <ul style="list-style-type: none"><li>• 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</li><li>• 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</li></ul> <p><b>Exclusion criteria:</b> Persons registered in a community health centre. Individuals with a registration of nomenclature code 109616 at any point throughout the year were considered to be enrolled in a community health centre and excluded from the analysis.</p>  |

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|------------------------------------|---|
| <b>International comparability</b> | No  |
| <b>Limitations</b>                 | See methodological note on equity in healthcare use   |
| <b>Dimension</b>                   | Equity  |
| <b>Related indicators</b>          | <p>EQ-1 Contacts with the healthcare system (number of contacts and at least one contact): general practitioner, medical specialist, emergency department (population aged 18+)</p> <p>EQ-3 Contacts with the healthcare system (number of contacts and at least one contact): medical specialist (population aged 18+)</p> <p>EQ-4 Contacts with the healthcare system (number of contacts and at least one contact): emergency department (population aged 18+)</p> <p>EQ-5 Contacts with the healthcare system (number of contacts and at least one contact): inpatient hospitalisation (population aged 18+)</p> <p>A-4 Households facing catastrophic out-of-pocket payments (% of respondents, HBS)</p> <p>A-6 People with self-reported unmet needs for medical examination due to financial reasons (% of respondents 16+, EU-SILC)</p> |
| <b>Reviewers</b>                   | Carine Van de Voorde (KCE)  |

### 1.1.2. Results – at least one GP contact

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

Table 1 shows the evolution over time of the probability to have one or more GP contacts in the past year. According to IMA – AIM population data, 78.5% in 2012 up to 82.0% in 2020 of the insured population has had at least one GP contact over the past 12 months.<sup>2</sup> Among the individuals included in the EU-SILC/IMA-AIM sample, the fraction of interviewed individuals who have consulted a GP at least once in the past year is higher but with a similar increasing trend, going from 81.2% in 2012 up to 83.7% in 2020 and climbing to 86.9% in 2021. Note that this probability is less than 10 percentage points lower than the probability to have a healthcare contact (GP, medical specialist and ED combined; EQ-1), implying that the overwhelming majority of individuals who had a healthcare contact has in fact consulted a GP (possibly in combination with a specialist consultation or ED visit). The probability to consult a GP is higher when restricting the sample to the adult population aged 18 or more, which is used in the regression and inequity analysis, going from 83.9% to 86.1% and 88.5% of the sample with at least one GP consultation in the past year in 2012, 2020 and 2021, respectively.

**Table 1 – Evolution (2012-2021) of the probability to have one or more GP contacts in the past year**

| Sample       | 2012  | 2016  | 2018  | 2019  | 2020  | 2021  |
|--------------|-------|-------|-------|-------|-------|-------|
| Population   | 78.5% | 80.1% | 81.0% | 82.0% | 82.0% |       |
| Survey (all) | 81.2% | 83.0% | 84.0% | 83.7% | 83.7% | 86.9% |
| Survey (18+) | 83.9% | 85.3% | 86.1% | 86.1% | 86.1% | 88.5% |

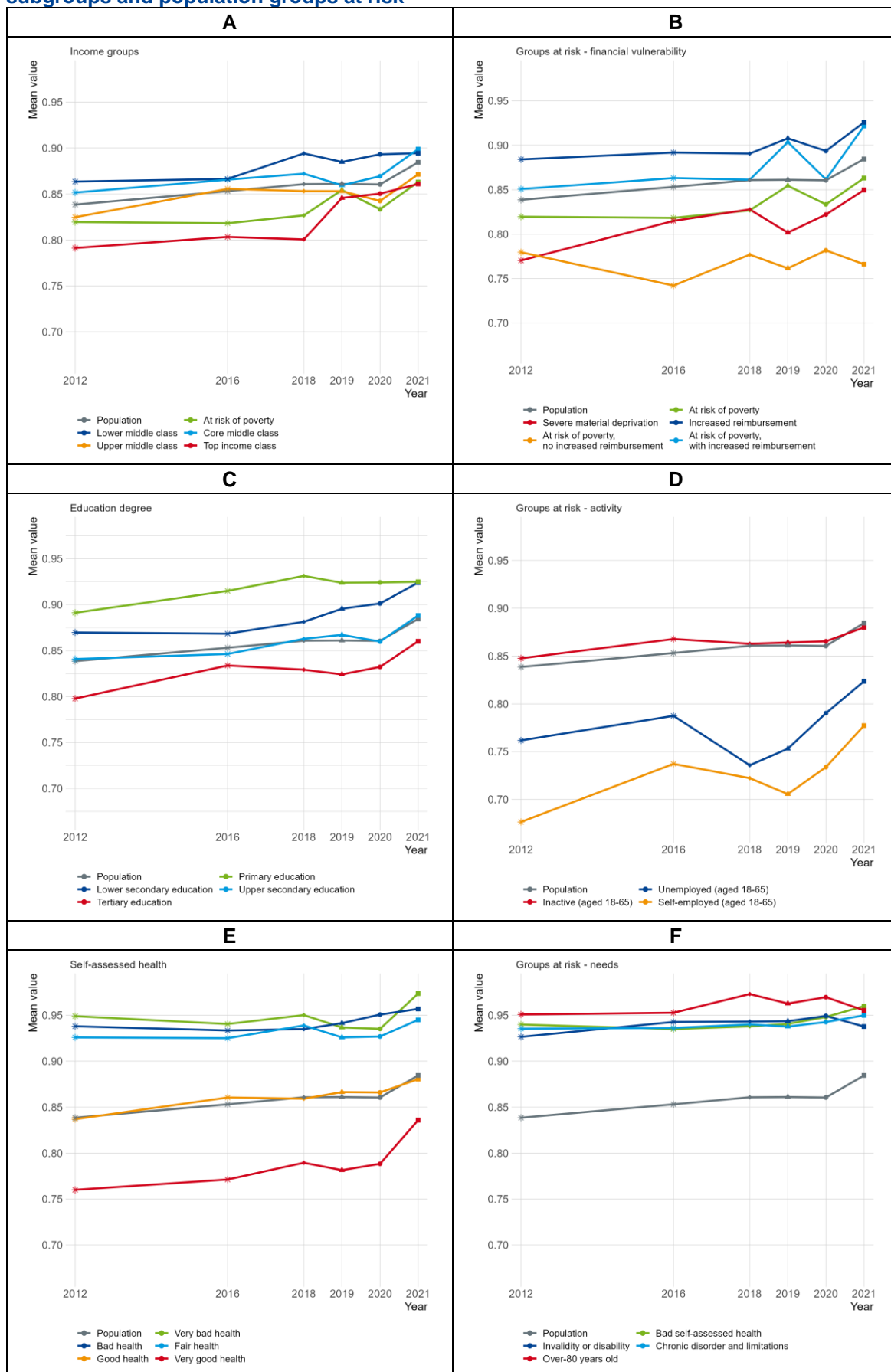
<sup>a</sup> Note the analysis is based on a survey sample and that results for some population subgroups are based on a small number of observations (e.g.

Figure 1<sup>a</sup> shows the evolution of the probability to have one or more GP contacts 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 for most population subgroups, there is a stable or slightly upward trend over time. There is, however, a notable increase for individuals with severe material deprivation, individuals in the top income class, individuals in very good health (in particular in 2021), self-employed individuals and individuals in unemployment (panels A, B, D & E). For the latter two groups, the rise was interrupted by a decrease in 2018/2019. Second, the group of individuals at risk of poverty but without increased reimbursement is one of the few groups without an increase over time in the contact rate with a GP (panel B). Third, there is relatively little variation in the probability to consult a GP by income level (panel A). However, among individuals at risk of poverty, there is a wide and increasing gap between beneficiaries of increased reimbursement and those without increased reimbursement of about 7 percentage points in 2012 and 15 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 GP contact (over 93%) (panel F). In addition, individuals who benefit from increased reimbursement are also more likely to have a GP contact than other financially vulnerable groups (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 1 – Evolution (2012-2021) of the probability to have at least one GP 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 GP 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.<sup>b</sup> 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 GP 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 healthcare contacts (EQ-1). We conclude

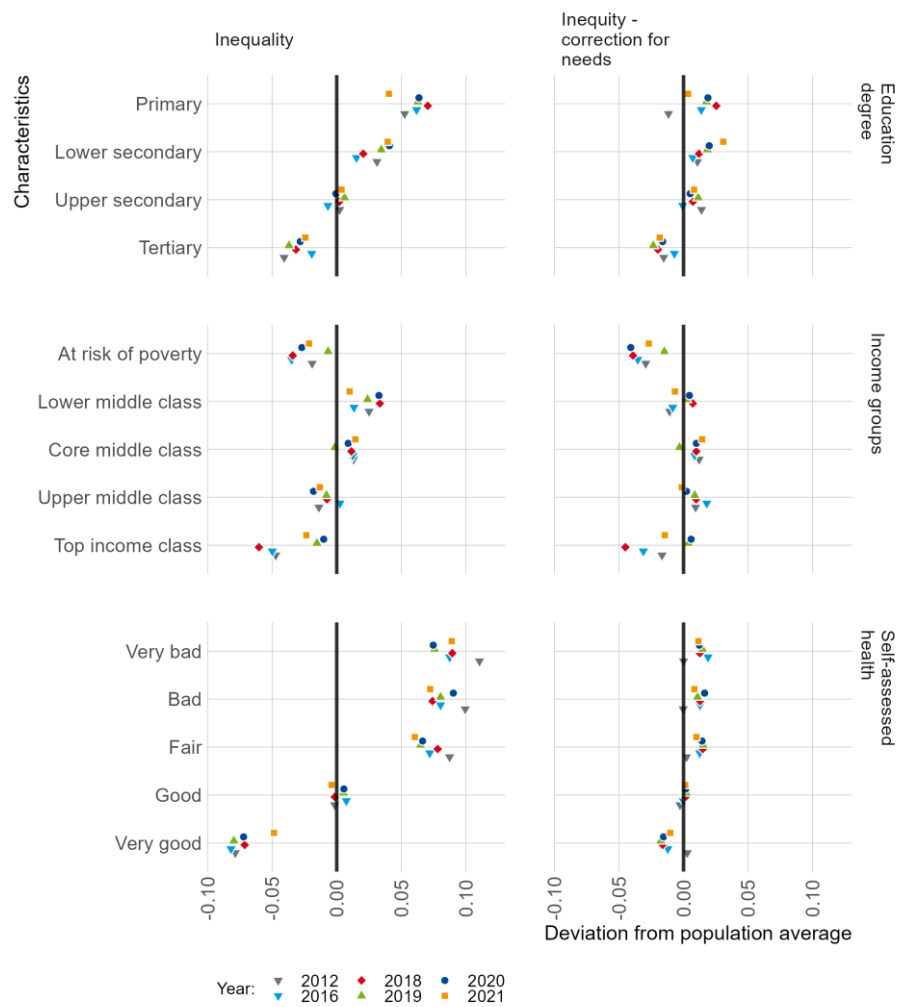
- **w.r.t. education:** there is a clear social gradient in the probability to have a GP contact with higher/lower contact rates among individuals with lower/higher educational attainment (column inequality). After correction for healthcare needs, the social gradient is less pronounced, but has not disappeared (column inequity).
- **w.r.t. income group:** after correcting for needs, we observe lower contact rates among individuals at risk of poverty and in the top income class.

- **w.r.t. self-assessed health:** individuals in fair, bad and very bad self-reported health have a higher probability of having a GP 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 GP contact in the past year among individuals who are unemployed, inactive, single (between 18 and 65 years old), 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 at risk of poverty but without increased reimbursement). Individuals who benefit from increased reimbursement have a probability to have a GP contact in line with the population average after correcting for needs, even in households at risk of poverty.

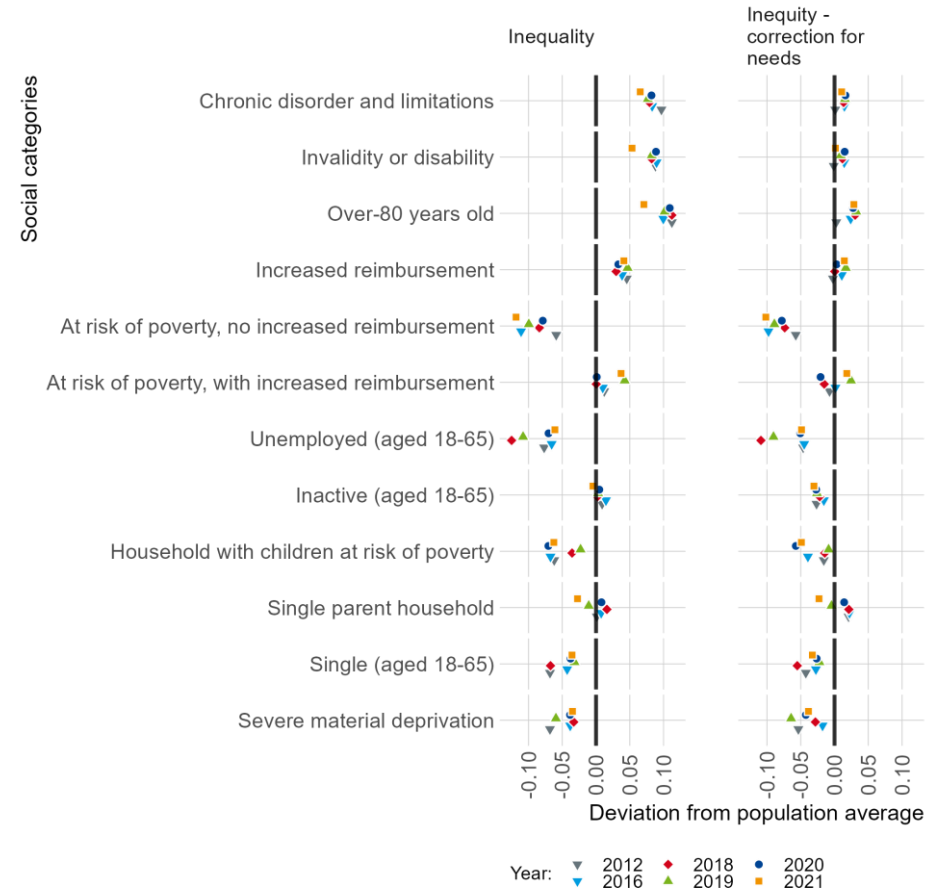
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<sup>b</sup> The output of the regression analysis on which the correction is based is available upon request.

**Figure 2 – Inequality and inequity in the probability to have a GP 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 GP contact in the past year: difference between the general population and specific vulnerable population subgroups**

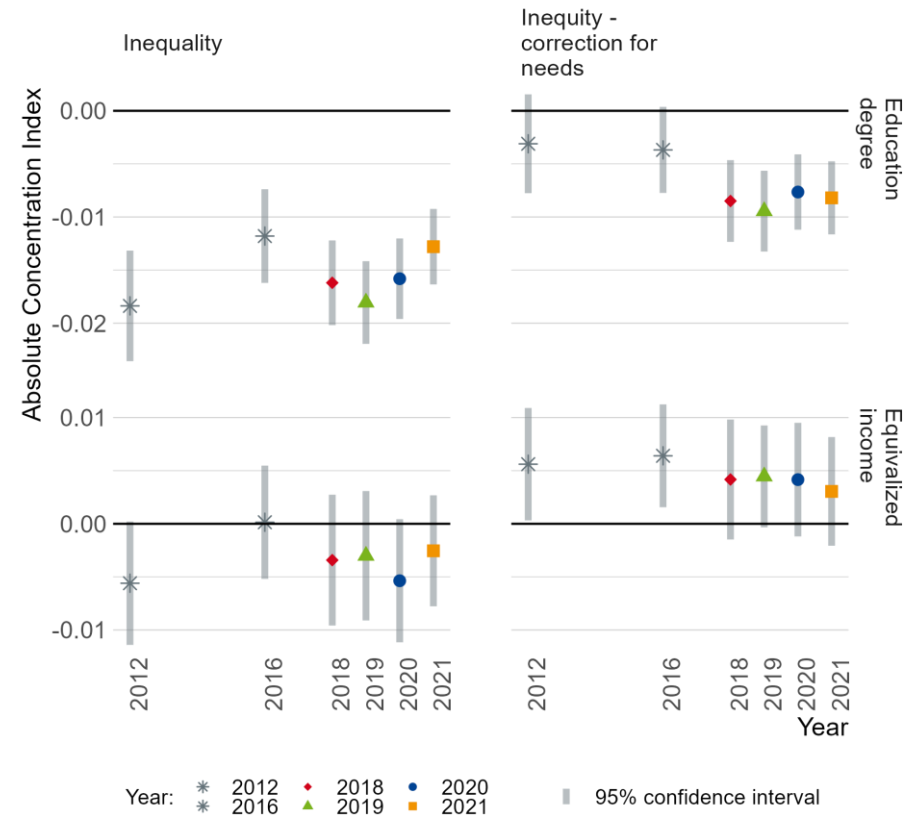


**Systematic socioeconomic inequity as measured by the concentration index**

Figure 4 shows the absolute concentration index of the needs-corrected probability to have a GP 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 GP 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 socioeconomic inequalities in the probability to have a GP contact in the past year regarding educational attainment, with a higher use among low-educated individuals. No inequalities are found by income level. After correcting for needs, a similar picture emerges, with no inequities related to income and small but significant inequities related to educational attainment in favour of low-educated individuals.

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



## Key points

- GPs are fairly accessible. More than 80% of the population consulted a GP in the past year; over 93% among subgroups with high care needs. EU-SILC/IMA-AIM survey contact rates are slightly higher than population averages, but follow the same upward trend and additionally show a strong increase in 2021. 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 without an increase in GP contact rate over time.
- After correction for needs, inequities in the probability to have a GP contact remain. Lower probabilities are found for individuals at risk of poverty, individuals in the top income class, unemployed individuals, inactive individuals, singles between 18 and 65 years old, individuals in households with children at risk of poverty, 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 when 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 income and small but significant inequities by educational attainment (higher contact rates among low-educated individuals).



### 1.1.3. Results – number of GP contacts

#### Evolution over time in the number of GP contacts in the past year

From Table 1 and Figure 1, we concluded that the probability of having at least one GP contact was high, between 79% and 89%, depending on year and sample, and has increased over time. Table 2 and Figure 5 additionally show the evolution over time of the number of GP contacts in the past year for individuals with at least one contact. For 2019 and 2020, there was a population benchmark available indicating an average of 5.5 and 5.8 GP contacts per year among individuals with at least one contact.<sup>2</sup> Among the individuals included in the EU-SILC/IMA-AIM sample, we find an annual number of contacts of the same magnitude. Conditional on having at least one GP contact in the past year, the average number of contacts per individual fluctuated between 5.3 and 6.1 GP contacts per year, with a notable decrease between 2016 and 2018. The number of GP contacts is higher when restricting the sample to the adult population (+0.3/0.5 contacts per year), but follows the same time pattern.

Note that the number of GP contacts amounts to about two thirds of the number of healthcare contacts (EQ-1).

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

| Sample       | 2012 | 2016 | 2018 | 2019 | 2020 | 2021 |
|--------------|------|------|------|------|------|------|
| Population   |      |      |      | 5.50 | 5.80 |      |
| Survey (all) | 5.87 | 5.97 | 5.33 | 5.45 | 5.65 | 6.05 |
| Survey (18+) | 6.22 | 6.30 | 5.68 | 5.82 | 6.14 | 6.45 |

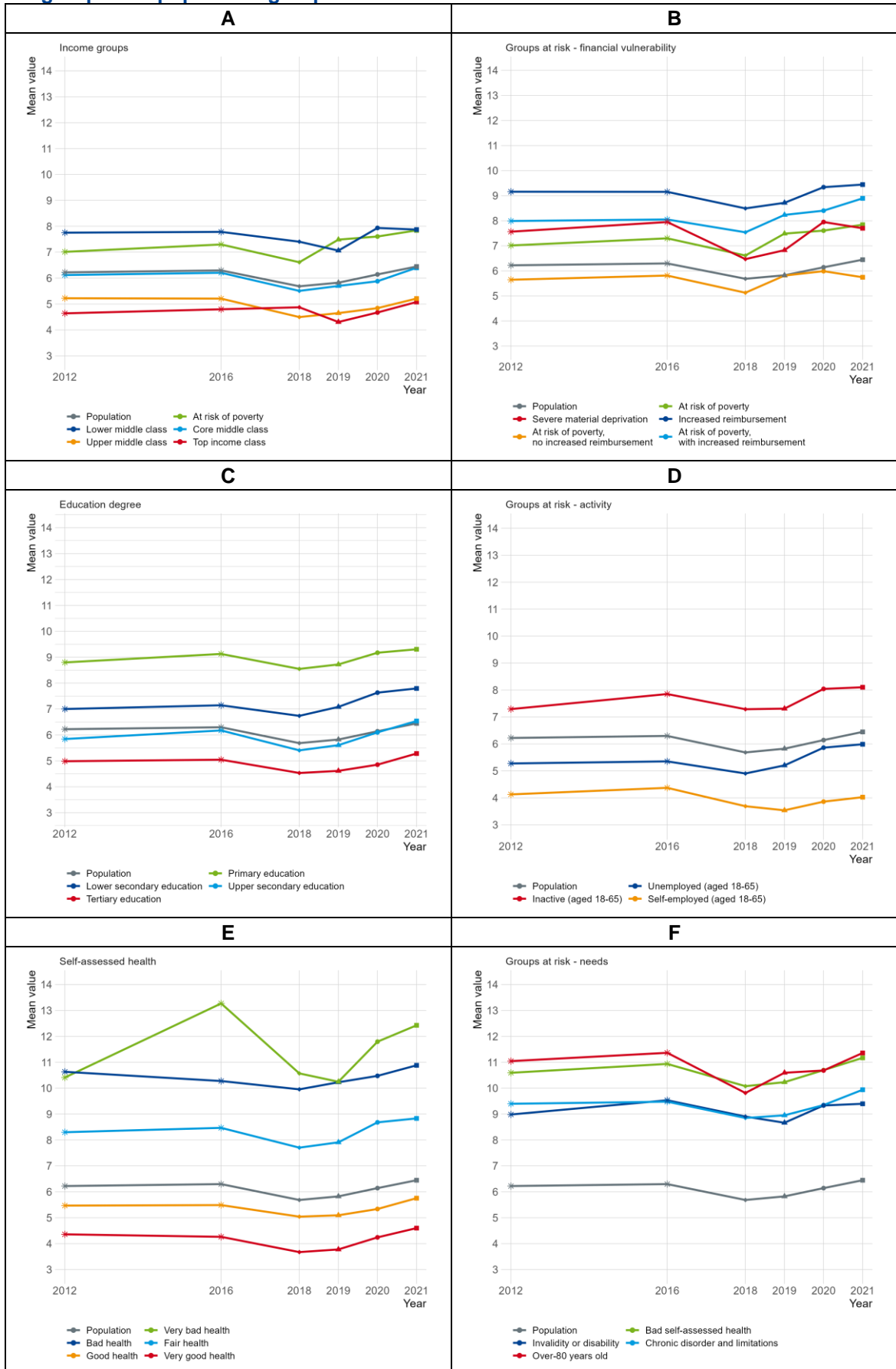
<sup>c</sup> Note the analysis is based on a survey sample and that results for some population subgroups are based on a small number of observations (e.g.

Figure 5<sup>c</sup> shows the evolution of the number of GP 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 most population groups follow a similar trend as the population, with a decrease in 2018 followed by a gradual increase up to 2021. Second, a higher number of GP contacts (annually between 8 and 12 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 GP 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 5 contacts on average in 2021 for individuals with very good health to more than 15 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 or are at risk of poverty, 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 (see 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 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 GP 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 GP 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.<sup>d</sup> 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 GP 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 GP contacts can be important (range between -2 and +7 contacts) and in favour of individuals with worse health status, with low educational attainment, with low income, in inactivity, in invalidity, with increased reimbursement, with material deprivation 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 -1 and 2). The conditional number of GP contacts is below the population average for the unemployed, for individuals at risk of poverty but without increased reimbursement, for higher educated individuals and individuals in the upper middle and top income class. On the other hand, the number of GP contacts is above the population average after accounting for healthcare needs for individuals at risk of poverty, low-educated individuals, beneficiaries of increased reimbursement, individuals in households at risk of poverty, and over-80 year olds.

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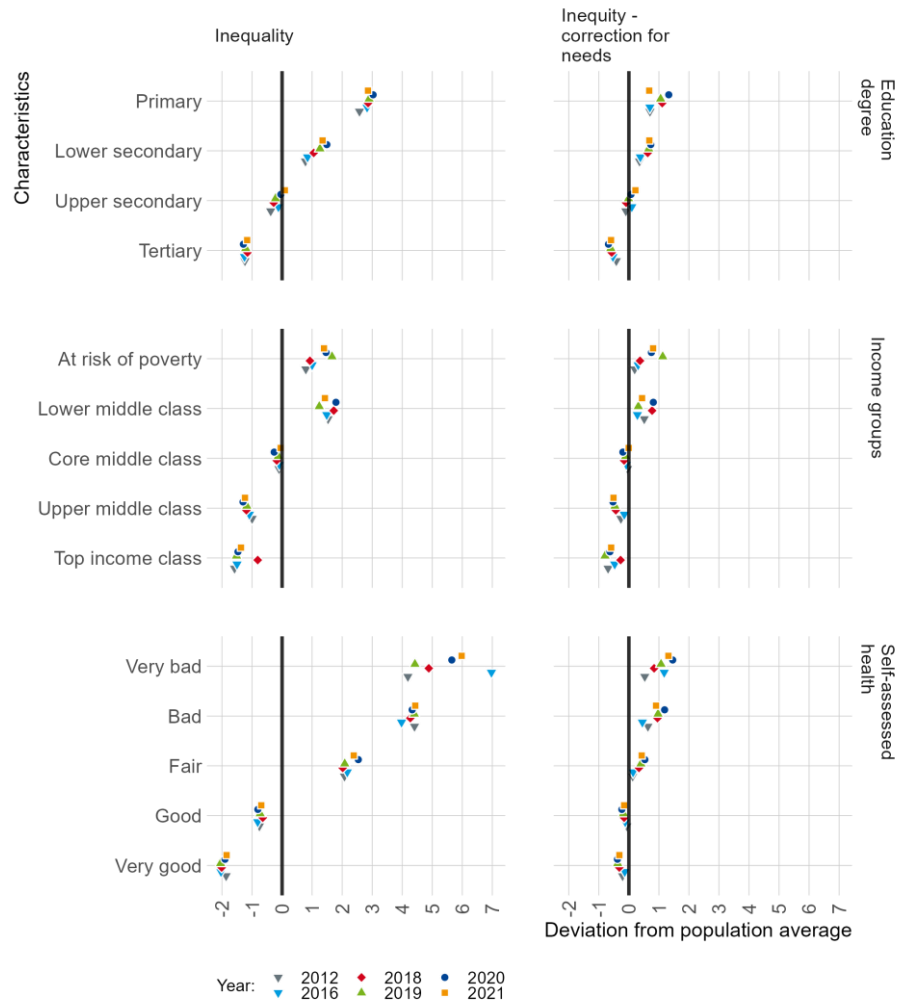
<sup>d</sup> The output of the regression analysis on which the correction is based is available upon request.

### **Systematic socioeconomic inequity as measured by the concentration index**

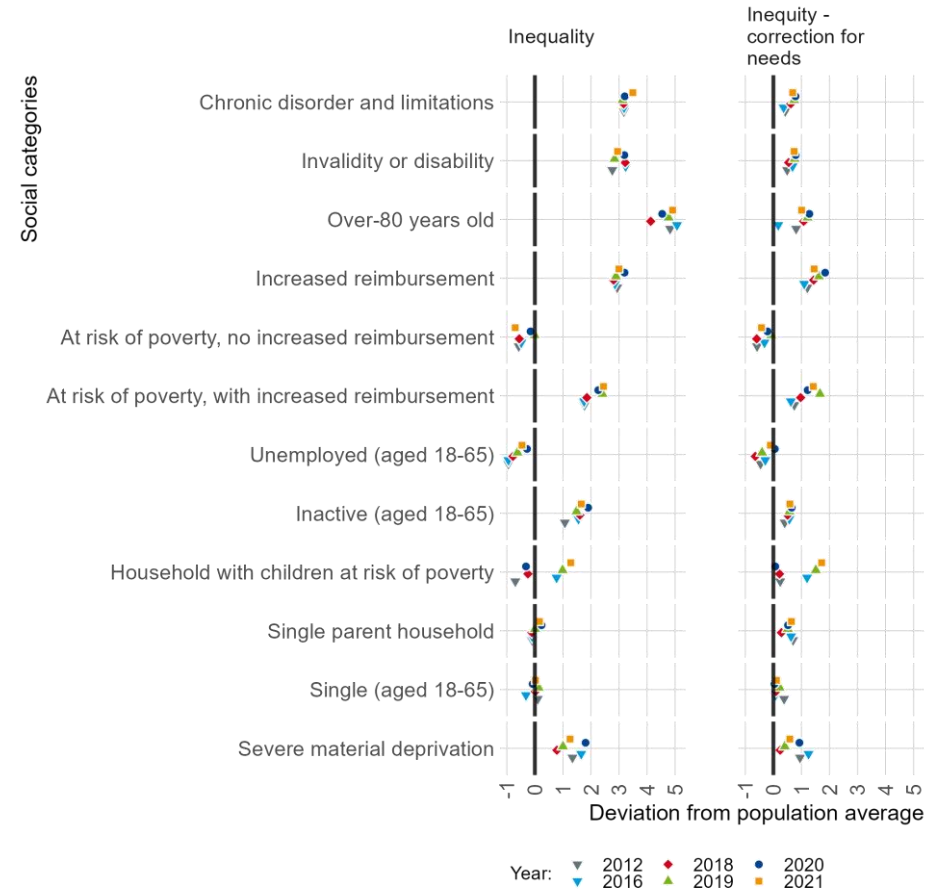
Figure 8 shows the absolute concentration index of the needs-corrected number of GP contacts in the past year to education and (equivalized) income. The absolute concentration index takes into account the entire distribution of care use in a similar way as the Gini index. Negative values of the concentration index should be interpreted as a higher needs-corrected number of GP contacts concentrated among individuals with lower educational attainment or lower income. Positive values indicate a higher needs-corrected number of GP contacts for individuals with higher educational attainment and higher income.

The results in Figure 8 reveal the presence of socioeconomic inequalities and inequities in the number of GP contacts both with respect to educational attainment (in favour of lower educated individuals) and income (pro-poor: in favour of low-income individuals). The found inequities are of similar magnitude and have increased somewhat between 2016 and 2020.

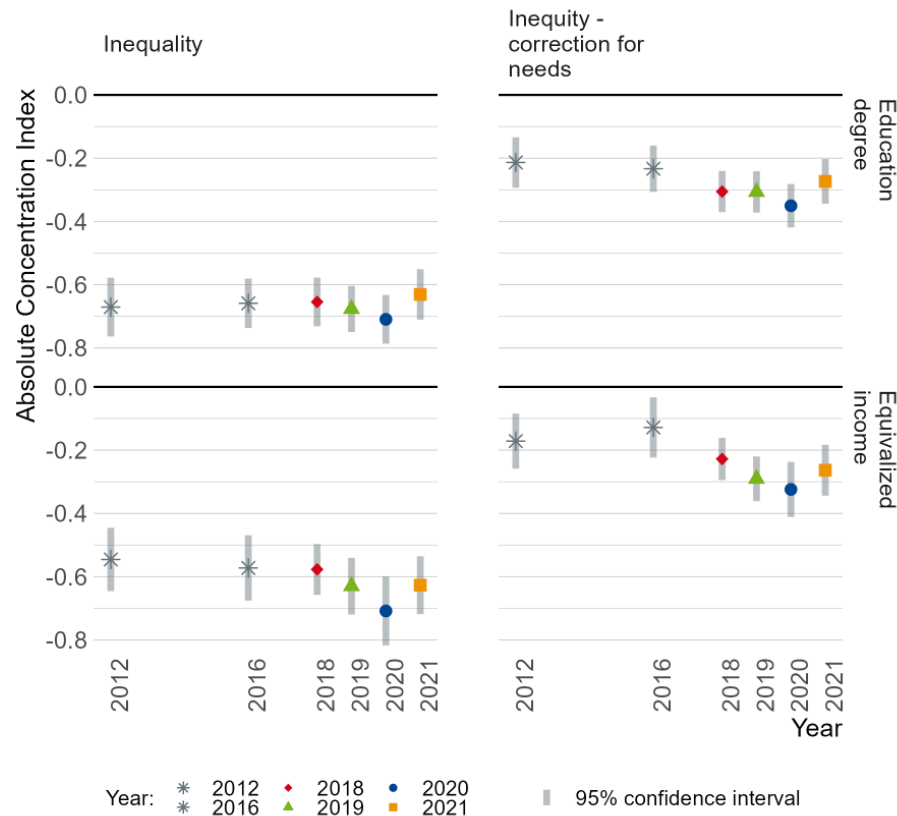
**Figure 6 – Inequality and inequity in the number of GP contacts in the past year: difference between the general population and population subgroups based on education, income and self-assessed health**



**Figure 7 – Inequality and inequity in the number of GP 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 GP 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 GP contacts (among those with at least one GP contact) increased from 6.2 in 2012 to 6.5 in 2021 among the survey sample (18+), with a drop between 2016 and 2018. There is large variation in the average annual number of GP contacts between population subgroups, but much 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 GP contacts are found (with deviation between -1 and +2 GP contacts on average per year). A lower number of contacts is found for the unemployed, for individuals at risk of poverty but without increased reimbursement, and for high-educated and high-income individuals. A higher number of GP contacts is found for individuals at risk of poverty, low-educated individuals, beneficiaries of increased reimbursement, individuals in households at risk of poverty, and over-80 year olds.
- The concentration index demonstrates systematic inequities both with respect to educational attainment (in favour of lower educated individuals) and income (pro-poor: in favour of low-income individuals). Inequities increased somewhat between 2016 and 2020.

### 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/>