OECD Health Policy Studies

# Health for Everyone?

## SOCIAL INEQUALITIES IN HEALTH AND HEALTH SYSTEMS

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BETTER POLICIES FOR BETTER LIVES

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# Foreword

Promoting a better sharing of the benefits of growth and equality of opportunities are key components of a strategy to foster social cohesion and the sustainability of economic growth. Yet, in many aspects of life, inequalities between different population groups have persisted at high level or even widened further over the last decade. Across the OECD, the top 10% of income earners now take home nearly ten times more pay than the bottom 10%. Wage inequality has reached record-high levels in some OECD countries, related to the workers' skills but also type of contract. There is also a clear geographical dimension to income inequalities and job quality. And more than in the past, inequality of opportunities feeds into inequality of outcomes and vice versa reducing social mobility from one generation to the next.

Health plays a key role in shaping inequality of opportunities and outcomes. The socio-economic context in which people live affects their health. But this is not a one-way street: health is not only a result of social changes, it also drives them. If health inequality increases, so will inequality in social outcomes. For example, the difference in lifetime earnings between people in poor health and good health is the same as between low-skilled and medium-skilled workers. To address the latter, promoting access to education and training opportunities for disadvantaged groups is key to foster their employment prospects and boost economic growth more generally. However, addressing health inequality is equally important to enable individuals to aspire to a fulfilling life, but this is not always recognised. This needs to change. Making sure that people live as many years as possible in good health should not just be an argument for social justice but at the core of overarching health, social and employment policies.

The OECD "Inclusive Growth" agenda has long made the case for the need for policy to promote equal opportunities and address income inequalities. With *Preventing Ageing Unequally* the OECD examined in 2017 how the two global mega-trends of population ageing and rising inequalities have been developing and interacting, both within and across generations. The 2018 OECD publication *A Broken Social Elevator? How to Promote Social Mobility* has shed light on social mobility, another key angle of the inequality challenge. The report provides evidence of low social mobility across and within generations at the top and the bottom of the income ladder, particularly since the early 1980s.

*Health for everyone?* addresses one missing piece of the puzzle on the links between inequalities of opportunities and outcomes. A considerable body of academic studies demonstrates the existence and extent of inequalities related to health, sometimes looking at trends and/or undertaking comparisons across groups of countries but typically looking at one aspect of the issue: How is obesity distributed across social groups? Do people have equal access to care? Are the well-off in better health? This report provides evidence on health-related inequality across a range of dimensions in a large set of OECD and EU countries. The report identifies groups of countries that display higher (and lower) levels of inequality in health and health systems, setting priorities for more in-depth discussion on how to address them. Overall, the report demonstrates that if policy makers want to promote inclusive growth, increasing attention should go to ensuring that health policies benefit the least well-off.

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The analyses presented in this publication are based on data from a range of national health surveys:

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- The Chilean National Socio-Economic Characterization Survey (CASEN) 2017, managed by Ministry of Social Development of Chile.
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The responsibility for all conclusions drawn from the data lies entirely with the authors.

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# Table of contents

Foreword 3

Acknowledgements 4

Acronyms and abbreviations 10

Executive summary 11

1 Health-related inequalities: Framework and key findings 14
- 1.1. Why a report on health-related inequalities? Introduction and method 15
- 1.2. Key findings on inequalities related to health 19
- 1.3. Key findings on inequalities in health systems 23
- 1.4. Conclusions 29
- References 34
- Annex 1.A. Summary tables 36

2 Inequalities in health and its determinants 44
- 2.1. Introduction 45
- 2.2. Poor health outcomes are detrimental to labour market participation 45
- 2.3. Behavioural risk factors are unequally distributed across socio-economic groups 54
- 2.4. Socio-economic inequalities in health outcomes 66
- 2.5. Synthesis and conclusion 74
- References 77
- Annex 2.A. Detailed results on Chapter 2 81

3 Inequalities in the utilisation of health care services 90
- 3.1. Introduction 91
- 3.2. Income-related inequalities exist in the utilisation of some – but not all – health care services across EU and OECD countries 91
- 3.3. Lower income people use preventive services less frequently 103
- 3.4. Synthesis and conclusion 109
- References 113
- Annex 3.A. Additional results on inequalities in utilisation of care 115

4 Inequalities in unmet needs for health care 134
- 4.1. Introduction 135
- 4.2. Unmet needs for health care: a commonly used indicator of access 135
- 4.3. Lower income people are often less likely to find services readily available 140

4.4. Everywhere lower-income people are more likely to delay or forgo care because of the cost 144
4.5. Synthesis and conclusions 147
References 152
Annex 4.A. Additional results on unmet needs 153

5 Affordability and financial protection: Insights from Europe 162
5.1. Introduction 163
5.2. Affordability and financial protection are concerns in Europe, especially for the poor 164
5.3. Most people in OECD and EU countries have access to publicly financed coverage 171
5.4. The design of coverage, particularly public, can improve affordability 176
5.5. Conclusion 183
References 184
Annex 5.A. Data on financial protection using indicators for global monitoring 186

## FIGURES

Figure 1.1. Health, risk factors and access to the health system: The odds are stacked in favour of the better-off 15
Figure 1.2. Age-standardised probabilities of smoking by education level 21
Figure 1.3. Life expectancy at birth and summary level of education-related health inequalities across European and OECD countries 23
Figure 1.4. Access to affordable quality care: Possible hurdles and related inequalities scenarios. 24
Figure 1.5. Proportion of the population forgoing care because of the cost, by income quintile 27
Figure 1.6. Share of households with difficulties to afford health care services, 2016 28
Figure 1.7. Dashboard on inequalities in risk factors, health outcomes, access and unmet needs 31
Figure 2.1. Employment rates across European and OECD countries, 2014 48
Figure 2.2. Probability of being in employment among the working-age population, by health status, European and OECD countries 50
Figure 2.3. Impact of poor health on labour market participation, European and OECD countries 51
Figure 2.4. Probability to be absent from work among employed people by health status, European and OECD countries 52
Figure 2.5. Labour market outcomes of the working-age population in good and poor health, European and OECD countries 53
Figure 2.6. Increase in fully productive active population, European and OECD countries 54
Figure 2.7. Age-standardised probability to be overweight by education level, women 57
Figure 2.8. Age-standardised probability to be overweight by education level, men 58
Figure 2.9. Age-standardised probability of smoking by education level, women 60
Figure 2.10. Age-standardised probability of smoking by education level, men 61
Figure 2.11. Age-standardised probability to be a heavy drinker by education level, women 62
Figure 2.12. Age-standardised probability to be heavy drinker by education level, men 63
Figure 2.13. Summary of inequalities in risk factors 65
Figure 2.14. Gap in life expectancy at birth, 2016 (or nearest year) 67
Figure 2.15. Age-sex standardised probability of reporting a poor-self assessed health status by education level 68
Figure 2.16. Life expectancy at birth and summary level of education-related health inequalities across European and OECD countries 71
Figure 2.17. Absolute and relative education-related inequality in health, European and OECD countries 72
Figure 2.18. Absolute inequalities in health status comparing education and income 73
Figure 3.1. Probability of a specialist visit in Estonia, with and without needs-standardisation 95
Figure 3.2. Needs-standardised probability of a doctor visit in the past 12 months, by income quintile 96
Figure 3.3. Inequality levels in the probability of a doctor visit 97
Figure 3.4. Needs-standardised probability and frequency of a GP visit, by income quintile 98
Figure 3.5. Needs-standardised probability and frequency of a specialist visit, by income quintile 100
Figure 3.6. Needs-standardised probability of a hospitalisation in the past 12 months, by income quintile 101
Figure 3.7. Prevalence of cervical cancer screening, by income quintile 106
Figure 3.8. Probability of a dental visit in the past 12 months, by income quintile 107

Figure 3.9. Probability of flu vaccination, by income quintile 108
Figure 4.1. The level of unmet needs due to financial costs varies across surveys 136
Figure 4.2. Needs-standardised probability of a doctor visit, in relation to perception of unmet needs 138
Figure 4.3. People with at least one chronic disease who did not visit a doctor mostly reported their "medical needs were met" 139
Figure 4.4. Unmet needs due to waiting times, by income quintile 141
Figure 4.5. Unmet needs due to distance or transport problems, by degree of urbanisation 142
Figure 4.6. Unmet needs due to distance or transport problems, by income quintile 143
Figure 4.7. Proportion of the population forgoing care because of the cost, by income quintile 145
Figure 4.8. Proportion of the population with unmet needs for dental care due to financial reasons, by income quintile 146
Figure 4.9. Proportion of people with any unmet need and summary level of inequalities, European countries 149
Figure 5.1. Out-of-pocket spending as share of total health expenditure, 2016 or latest year 163
Figure 5.2. Affordability of health care services and its relationship to out-of-pocket spending 165
Figure 5.3. Share of households with difficulties to afford health care services, 2016 165
Figure 5.4. Health care as a share in total household consumption compared to the share of out-of-pocket spending in total health spending 166
Figure 5.5. Health spending as share of total household consumption by consumption quintile, selected countries 167
Figure 5.6. Share of households with catastrophic out-of-pocket spending by consumption quintile, latest year available 169
Figure 5.7. Incidence of catastrophic health spending and the share of out-of-pocket in total health spending, latest available year 170
Figure 5.8. Share of households impoverished or further impoverished after out-of-pocket payments, latest year available 170
Figure 5.9. Three dimensions of health care coverage 171
Figure 5.10. Population coverage for a core set of services, 2016 (or latest year) 172
Figure 5.11. Voluntary health insurance in EU and OECD countries, 2016 or latest year 176
Figure 5.12. Health care coverage for selected goods and services, 2016 or latest year 178
Figure 5.13. Breakdown of spending among households with catastrophic spending, all households 180
Figure 5.14. Breakdown of spending among households with catastrophic spending, lowest consumption quintile 180
Figure 5.15. Unmet needs for dental care due to cost in the first quintile compared to the share of out-of-pocket spending in dental spending 181

Annex Figure 3.A.1. Inequality index for the probability of a GP visit after needs-standardisation 119
Annex Figure 3.A.2. Inequality index for the number of GP visits after needs-standardisation 119
Annex Figure 3.A.3. Inequality index for the probability of a specialist visit after needs-standardisation 123
Annex Figure 3.A.4. Inequality index for the number of specialist visits after needs-standardisation 123
Annex Figure 3.A.5. Inequality index for the probability of a doctor visit after needs-standardisation 127
Annex Figure 3.A.6. Inequality index for the probability of an inpatient hospitalisation after needs-standardisation 127
Annex Figure 3.A.7. Inequality index for the probability of a dentist visit in the past 12 months 130
Annex Figure 3.A.8. Inequality index for the probability of flu vaccination in the past 12 months 130
Annex Figure 3.A.9. Inequality index for the probability of cervical cancer screening 131
Annex Figure 3.A.10. Inequality index for the probability of colorectal cancer screening 131
Annex Figure 3.A.11. Inequality index for the probability of breast cancer screening 132
Annex Figure 4.A.1. Inequality index for the probability of delayed or forgone care due to waiting times (GCI) 157
Annex Figure 4.A.2. Inequality index for the probability of delayed or forgone care due to distance/transport problems (GCI) 158
Annex Figure 4.A.3. Inequality index for the probability of forgone medical care due to financial reasons (GCI) 158
Annex Figure 4.A.4. Inequality index for the probability of forgone dental care due to financial reasons (GCI) 159
Annex Figure 4.A.5. Inequality index for the probability of forgone prescription drugs due to financial reasons (GCI) 159
Annex Figure 4.A.6. Inequality index for the probability of forgone care (any type) due to financial reasons, inequality index (GCI) 160

## TABLES

Table 2.1. Description of variables used in this section and coverage of the population 48
Table 2.2. Data used to analyse behavioural risk factors 55
Table 2.3. Absolute education-related inequality in overweight, women and men 59
Table 2.4. Absolute education-related inequality in smoking 61
Table 2.5. Absolute education-related inequality in heavy drinking 63
Table 2.6. Data used and coverage of the analysis for health status 67
Table 2.7. Education-related inequalities in health 69
Table 3.1. Variables used and coverage of the population to analyse differences in the utilisation of health care services 92
Table 3.2. Summary of inequalities in doctor visits and hospitalisations 102
Table 3.3. Summary of inequalities in cancer screening, dental care and vaccination 109
Table 4.1. Summary of inequalities in unmet needs due to availability issues 144
Table 4.2. Summary of inequalities in unmet needs due to financial reason 147
Table 5.1. How is coverage attained in EU countries? 174

Annex Table 1.A.1. Key results, country-by-country 36
Annex Table 1.A.2. Key results, country-by-country 37
Annex Table 1.A.3. Key results, country-by-country 38
Annex Table 1.A.4. Key results, country-by-country 39
Annex Table 1.A.5. Key results, country-by-country 40
Annex Table 1.A.6. Key results, country-by-country 41
Annex Table 1.A.7. Key results, country-by-country 42
Annex Table 2.A.1. Description of variables for surveys other than EHIS 81
Annex Table 2.A.2. Descriptive statistics and predicted probabilities: employment and absence from work due to illness 82
Annex Table 2.A.3. Descriptive statistics, standardised probabilities and inequality index: overweight among women and men 83
Annex Table 2.A.4. Descriptive statistics, standardised probabilities and inequality index: smoking among women and men 84
Annex Table 2.A.5. Descriptive statistics, standardised probabilities and inequality index: heavy drinking among women and men 85
Annex Table 2.A.6. Descriptive statistics, standardised probabilities and inequality index: poor self-assessed health and limitations in daily activities 86
Annex Table 2.A.7. Descriptive statistics, standardised probabilities and inequality index: multiple chronic conditions 87
Annex Table 2.A.8. Inequality index: income-related health inequalities 88
Annex Table 3.A.1. Descriptive statistics: Physician and hospital care 115
Annex Table 3.A.2. Quintile distribution of the probability of a GP visit after needs-standardisation, inequality index 116
Annex Table 3.A.3. Quintile distribution of the number of GP visits after needs-standardisation, inequality index 117
Annex Table 3.A.4. Quintile distribution of the probability of a specialist visit after needs-standardisation, inequality index 120
Annex Table 3.A.5. Quintile distribution of number of specialist visits after needs-standardisation, inequality index 121
Annex Table 3.A.6. Quintile distribution of the probability of a doctor visit after needs-standardisation, inequality index 124
Annex Table 3.A.7. Quintile distribution of the probability of inpatient hospitalisation after needs-standardisation, inequality index 125
Annex Table 3.A.8. Descriptive statistics and generalised concentration indexes: Cancer screening 128
Annex Table 3.A.9. Descriptive statistics and generalised concentration indexes: Dental visits and flu vaccination 129
Annex Table 4.A.1. Unmet needs variables in different surveys 153
Annex Table 4.A.2. Descriptive statistics and generalised concentration indices: unmet needs for financial reasons for medical care, dental care and prescription drugs 154
Annex Table 4.A.3. Descriptive statistics and generalised concentration indices: Unmet needs for financial reasons, due to waiting times, transport and overall 155

Annex Table 4.A.4. Summary of inequalities: Detailed results and discussion 156
Annex Table 5.A.1. Data on financial protection using indicators for global monitoring in the context of the SDGs 186

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# Acronyms and abbreviations

| | |
|---|---|
| BMI | Body Mass Index |
| CASEN | National Socio-Economic Characterisation Survey |
| CCHS | Canadian Community Health Survey |
| CI | Concentration index |
| COICOP | Classification of Individual Consumption by Purpose |
| COPD | Chronic Obstructive Pulmonary Disease |
| CSDH | Commission on Social Determinants in Health |
| EHIS | European Health Interview Survey |
| EWCS | European Working Condition Survey |
| EXPH | EXpert Panel on effective ways of investing in Health |
| GCI | Generalized Concentration index |
| GP | General Practitioner |
| MEPS | Medical Expenditures Panel Survey |
| OOP | Out-of-Pocket expenditure |
| OTC | Over-the-Counter |
| PCA | Principal Component Analysis |
| PPP | Purchasing Power Parity |
| RII | Relative Index of Inequality |
| SDG | Sustainable Development Goals |
| SHARE | Survey of Health, Ageing and Retirement in Europe |
| SII | Slope Index of Inequality |
| SILC | Statistics on Income and Living Conditions |
| UHC | Universal Health Coverage |
| VHI | Voluntary Health Insurance |

# Executive summary

Health is one of the main components of a good life. In addition to having value in itself, good health also translates into a better chance of succeeding in education and in the labour market – ultimately contributing to enhance opportunities for people to improve their standing in life. At the same time, inequalities in income and educational attainment contribute to health inequality. Ensuring that everyone, regardless of socio-economic circumstances, has access to the health system can help make sure that economic prosperity is shared by the entire population.

This publication analyses inequalities in health and health systems and thus provides a key insight for the discussion of how societies can become more inclusive. It looks into socio-economic differences in the exposure to risk factors to health, health status, the utilisation of health services, unmet health care needs and coverage. To assess these inequalities, the report undertakes detailed analyses of micro-level data from a range of national health surveys representing 33 OECD and EU countries, presenting differences between the most and least well-off as well as population-level summary measures of inequalities.

## Poor health behaviour tends to be more prevalent among the disadvantaged, but the relationship between risk factors and educational level can be complex

Overall, less educated people are more likely to be overweight and smoke. This applies to both sexes but the extent of these inequalities differs. In all countries, there is a greater risk of women with low education to be obese or overweight. For men, this holds true in about 55% of countries. Regarding tobacco consumption, the less educated men are significantly more likely to smoke in all countries and in 80% of countries in the case of women.

The picture for hazardous alcohol consumption is less clear. For women, there are no significant differences in drinking habits across education levels in around two-thirds of the countries but in 25% of them, alcohol consumption rises with income. Men with a high education level are less likely to be heavy drinkers but the population-level gradient is only significant in around half of the countries.

## No matter how it is measured, the least educated are more likely to be in bad health

Across all countries, people in the lowest education category are twice more likely to view their health as poor compared to those with tertiary education (44% vs. 23%). Similar results can be observed for other variables of health status, such as limitations in daily activities and prevalence of multiple chronic conditions.

## People with low income are less likely to see a doctor while access to preventive services is systematically concentrated among the better off

For the same level of health care needs, a person in the lowest income quintile is less likely to see a doctor in a year compared to one in the highest income group. Across countries, this difference is 5 percentage points for a visit to a General Practitioner (GP) but much more pronounced for a specialist visit (12 percentage points). At population level, this gradient is significant in around half of the countries in the case of GPs but in nearly all countries for specialists.

Yet, once access to a GP is established, low-income patients have at least as many visits to the GP than the rich in all but one country. The number of visits to specialists is also equally distributed in the majority of countries once a first contact has occurred.

The use of preventive services, such as cancer screening or dental care, is concentrated among higher income groups in the vast majority of OECD and EU countries. For cervical cancer, the difference in screening rates reaches on average 17 percentage points across income groups.

## Unmet needs for care are systematically concentrated among lower income groups and poor households face more difficulties to afford care when they access the system

On average in Europe, 26% of people in the lowest income segment did not avail care they needed due to costs compared to 8% of people with the highest income level. Overall, unmet needs for financial reasons are concentrated among lower income groups in all countries.

When accessing the health system, nearly 17% of households in EU countries declare they have difficulties in affording care but the proportion stands at 30% for those below the poverty line. Everywhere, households in the bottom income quintile are more likely to incur catastrophic health spending.

## There is some consistency when comparing inequalities across various health domains

Comparing jointly the levels of inequalities across domains and countries shows some consistency. The relatively high inequalities in indicators measuring service utilisation and unmet needs in countries like Bulgaria, Latvia, Croatia, Greece and Finland suggest that when countries struggle to warrant equal health service use across different population groups, they also face problems with inequalities in unmet needs. In some of these countries, this reflects limitations in the level of coverage and financial protection.

## A range of policy options exists to reduce social inequalities in health

A wide range of policy options exists for OECD and EU countries to tackle health-related inequalities. This should start with public health interventions that more specifically target disadvantaged population groups helping them to adopt more healthy lifestyles. Measures to improve health literacy –which is less widespread among disadvantaged populations – can also help close the inequality gap on risk factors and access to care.

The health care system can also contribute to redress inequalities. Measures should include the strengthening of primary care and the reconfiguration of service delivery models to ensure that recommended preventive services are also delivered to population groups with lower socio-economic status. This can require improving service availability in rural and disadvantaged urban areas. Making sure

that the entire population has health care coverage and benefit baskets are designed in a way to exempt the most vulnerable population groups from co-payments can also help.

Finally, labour market, education, housing and social policies that benefit the more disadvantaged groups can also contribute to reducing inequalities in health.

# 1 Health-related inequalities: Framework and key findings

This chapter provides an overview of the report on socio-economic inequalities in health and health systems. It presents the rationale of the report as well as the overall approach selected to analyse inequalities in 33 OECD and EU countries. Key findings on inequalities in risk factors and health outcomes are discussed followed by a presentation of inequalities in utilisation of health services, unmet needs for health care and financial hardship when seeking care. The results confirm that people from disadvantaged socio-economic backgrounds frequently are in worse health, have higher exposure to risk factors and struggle more to access the health system than the better-off or better educated. However, the extent of these inequalities differs across countries. The chapter also assesses whether some countries systematically concentrate inequalities in health and health systems and concludes by discussing policy options to redress them.

Note by Turkey:
The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

Note by all the European Union Member States of the OECD and the European Union:
The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

## 1.1. Why a report on health-related inequalities? Introduction and method

### *1.1.1. Health is essential to well-being and increases a person's chance of being productive…*

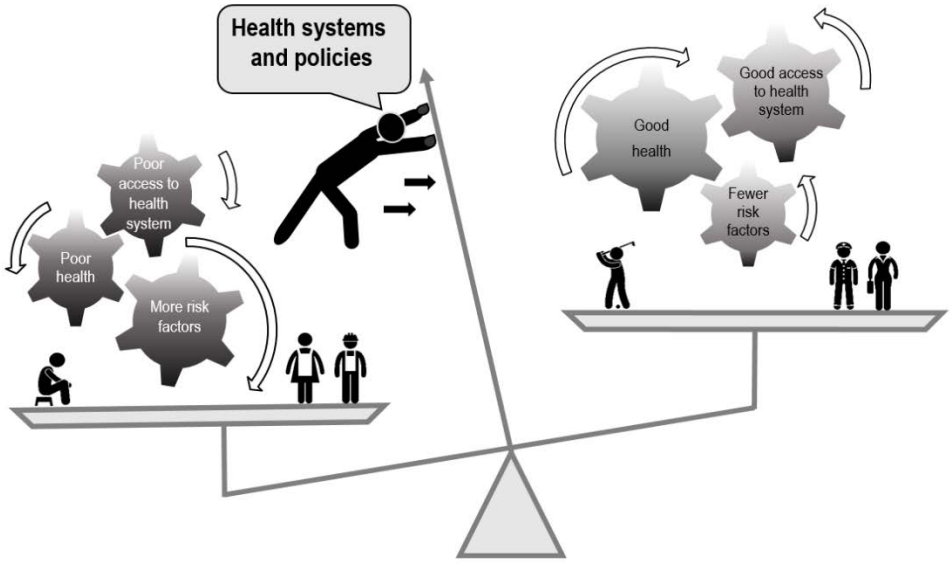
Health is one of the main components of a good life, and it is of intrinsic value. Data collected in the context of the OECD's Better Life Index[1] from around 145 000 citizens around the world suggest that health is the number one priority for living a good life for the majority of people.

Being in good health also contributes to other important outcomes such as labour market outcomes, educational achievement and allows for an active participation in community life. Particularly important in an economic context is the impact on labour market outcomes: good health translates into a better chance of finding a job, being more productive and ultimately creates opportunities for people to improve their standing in life (Chapter 2 of this report will discuss this further). The *Preventing Ageing Unequally* report (OECD, 2017[1]), showed that, at all ages, men and women in bad health work less and earn less when they work. Over the course of a career, bad health reduces lifetime earnings by 33% and 17% for men with low and high levels of education, respectively (and with smaller effects overall for women). This is detrimental to economies and societies at large.

### *1.1.2. …but the odds are stacked in favour of the better-off*

The least well-off and less educated are less likely to be in good health, which is, among other things, explained by a higher exposure to risk factors detrimental to their health and lower access to preventive and health care services. Moreover, these inequalities persist over a life cycle. Growing up in favourable socio-economic circumstances leads to higher levels of educational attainment, which, in turn, is associated with higher income and better health in later stages of life. Poor health can have intergenerational effects. This is true, for example, for mental health problems where recent research has shown that maternal mental ill health is likely to negatively affect the mental health of children and grandchildren (Johnston, Schurer and Shields, 2013[2]). It is also associated with lasting effects on children's educational attainment, future household incomes, and the increased probability of engaging in criminal activity.

**Figure 1.1. Health, risk factors and access to the health system: The odds are stacked in favour of the better-off**




Note: Each side of the scale represents the nexus of the relationships between risk factors, health and access to the health system which reinforce one another positively (right side of the scale) or negatively (left). People of lower (higher) socio-economic standing are more likely to land on the left (right) side of the scale. The size of the cogwheels indicates the value of the indicators used to measure these domains for the two population groups. Health systems and policies can contribute to redressing the balance.

### *1.1.3. Health systems and policies can contribute to redressing the balance*

Health is influenced by a range of social, economic and environmental determinants, but by ensuring access to care of good quality, as well as through prevention and public health policies, health systems play a key role in improving health outcomes.

Health systems can contribute to reducing inequalities if they enable access to services based on needs rather than the ability to pay. In most OECD and EU countries, national health system strategies and policies highlight the importance of ensuring access to quality care for everyone and protecting all people against the cost of illness. These targets are also incorporated in global health policy frameworks. Sustainable Development Goal 3.8 on Universal Health Coverage emphasises access to quality care, affordability and financial protection. Ensuring access to quality health services and more broadly investing in people's health is also a central recommendation in OECD's *Framework for Policy Action on Inclusive Growth* (2018[3]). Finally, the European Pillar of Social Rights states that "everyone has the right to timely access to affordable, preventive and curative health care of good quality" (Tajani, Ratas and Juncker, 2017[4]).

Figure 1.1 captures the nexus of the interacting phenomena described above and summarises the framework that guides the empirical analyses of this report. Overall, poorer health, high exposure to risk factors and problems accessing the health system tend to go hand in hand and to be more common among the less well-off and disadvantaged. On the other hand, those with higher socio-economic status generally adopt healthier lifestyles, find it easier to access the health system and are in better health overall. These effects can also reinforce each other and, as mentioned before, also influence labour market and educational outcomes.

A range of health policy levers exist to redress these health-related inequalities. These include, for example, public health interventions to reduce the high exposure of risk factors among disadvantaged population groups, making sure a sufficient number of health providers are available in poorer areas, and guaranteeing that the entire population is covered against the cost of health care. Ultimately, these policies can also contribute to ensuring that economic prosperity can be shared by the entire population.

Of course, the challenge of health inequalities also needs to be seen in a country-specific context. In many OECD countries, particular population groups such as indigenous peoples, ethnic and linguistic minorities concentrate socio-economic disadvantages but may also face additional barriers to access[2]. In other countries, barriers of access may be concentrated in certain regions that are economically disadvantaged or scarcely populated. All this to say that when comparing health inequalities across countries, context is important. It also means that, in addition to the generic health policy levers described above, more country-specific policy responses –also going beyond the health system- may be necessary to redress inequalities in health.

### *1.1.4. This report provides a comparative assessment of health-related inequalities in 33 OECD and EU economies*

This report measures and compares a range of inequalities in health and health systems across countries providing evidence on the main imbalances as described by the three cogwheels in Figure 1.1. Hence, the focus of the report is on analysing differences across population groups with different socio-economic status. While it is acknowledged that gender-specific differences in health also exist, any analysis is generally outside of the scope of this report. However, due to the fact that the social gradients for risk factors are different between men and women, socio-economic differences for this domain are analysed separately for both sexes. Inequalities in health related to migration status or ethnicity are also not considered in this report.

The comprehensive analysis is produced mainly using national health surveys from 33 EU and OECD countries: the 2014 European Health Interview Survey wave 2 for 30 European countries (EU countries, Iceland and Norway), the Canadian Community Health Survey 2015-16, the Chilean National Socio-Economic Characterization Survey 2017, and the US Medical Expenditure Panel Survey 2016. Drawing

heavily on this data, the report measures and compares inequalities across socio-economic groups in the following domains: health status, risk factors, health care utilisation and unmet needs. Other data sources are used to assess differences in coverage and financial protection. It is acknowledged that the use of national health surveys, typically excludes some population groups that are particularly affected by health inequalities, such as the homeless or irregular migrants.

A large and ever-evolving body of research proposes different approaches to measuring inequalities, some of which originate from epidemiologists, others from economists. In particular, an array of methods exist to generate, based on the distribution of the variable in the population, a number summarising the level of inequality in a way which allows comparisons across time and/or countries. These summary measures all have different properties and in particular reflect different and equally valid value judgements of what constitutes more or less unequal circumstances[3]. The methodological choices made in this study are briefly explained in Box 1.1. The fact remains that different approaches can lead to different assessments of how unequal countries are relative to one another. In the preparation of this report, alternative approaches were tested but for the sake of clarity and brevity, not all can be presented here. Instead, rather than trying to rank countries on the basis of one set of assumptions, the approach followed distinguishes three broad groups of countries which consistently have relatively low, intermediate or high levels of inequality under different assumptions and across sets of variables which cover the same domain of analysis. Where country groupings vary substantially under different assumptions, differences are explicitly discussed.

The report is structured as follows: Chapter 2 briefly describes the relationship between health and labour market outcomes, demonstrating the importance of improving health to activate and increase the productivity of the working-age population. Subsequently, the distribution of major risk factors for health and of health outcomes along the socio-economic gradient are analysed. The rest of the report describes in more detail the different types of the imbalances depicted in the “access of health system” cogwheel in Figure 1.1. It looks into inequalities in the utilisation of health services (Chapter 3), in unmet need for health care (Chapter 4) and reviews the coverage and financial protection provided by OECD and European health systems (Chapter 5).

### Box 1.1. Summary description of the methodological approach to measure inequalities in this report

The report’s main objective is to estimate whether and the extent to which people across the social spectrum are more or less exposed to risk factors, in good health or have better access to care (measured by service utilisation and unmet needs for care) in OECD and EU countries (each of these categories being labelled a domain of inequality in this box). This required a number of key methodological choices which are outlined here along with their rationale. More details on the methods are provided in the relevant chapters.

#### Standardisation

Assessing the gap between socio-economic groups for risk factors, health outcomes and access to care requires factoring out other determinants which may explain differences in each domain between these groups but are not amendable to policy. For instance, if the better-off are older than the least advantaged on average, part of the health gap between these groups can be attributed to age and a simple tabulation of health and socio-economic status is likely to underestimate socio-economic inequalities. To measure inequalities more accurately, ***indirect standardisation*** (O’Donnell et al., 2008[5]) ***is used where relevant***. For instance, an age and sex standardisation is used to compare health status between education groups. To compare the utilisation of care between income groups, the impact of differences in age, sex, and health status between these groups are similarly neutralised[4]. The standardised probabilities serve as a basis for contrasting the situation of the least and most advantaged.

**Choice of a marker of socio-economic inequalities**

Education, income, occupation and wealth are the main markers of socio-economic status which can be used as the dimension along which inequalities in each domain are captured. These markers are generally correlated and at the same time each can have an intrinsic marginal impact on some of the variables of interest in this study. An intuitive example is that better education can increase a person's awareness of the importance of a healthy diet while the associated higher income influences the type of food they can purchase (e.g. processed food is cheaper and unhealthier). The distributions and correlations of these variables in two populations are likely to differ, which would intuitively impact how unequal they might appear if one maker of socio-economic status is used rather than the other. An option to address this concern is to measure and compare inequalities along different markers simultaneously, as done for instance by Huisman, Kunst and Mackenbach (2005[6]) for smoking, Devaux and Sassi (2013[7]) for obesity, and Hu et al (2016[8]) for health.

For the sake of clarity and concision, this report mostly focuses on one socio-economic marker for each domain examined. ***Education is selected for health and risk factors***, as it has a larger explanatory power of differences and, for similar reasons***, income is selected for access***. These markers are also more commonly used in the literature which measures inequalities in these respective domains, which increases the comparability of this report with other studies.

**Measurement approaches preferred by epidemiologists and economists**

Studies aiming to quantify health-related inequalities originate mostly from two groups of disciplines, epidemiology and public health on the one hand and economics on the other. The former is more prolific on inequalities in health status and risk factors and the latter on access to care and coverage of services. In public health and epidemiology, the most commonly used summary measures to assess inequalities which take into account the entire distribution of the population across socio-economic dimensions are the *slope* and *relative index of inequalities*. Economists generally privilege measures which originate from the income-inequality literature such as *(generalised) concentration indices* (for more detailed presentation of these concepts see Chapters 2 and 3 respectively).

In this report, to pragmatically facilitate comparison with the most relevant bodies of literature, the approach privileged by epidemiologists ***(slope and relative index of inequalities) is adopted for health and risk factors while concentration indices are used for variables describing access***.

**Absolute and relative inequalities**

Comparing inequalities across populations requires a value judgement on what constitutes inequality and hence a reduction of inequalities. Intuitively, relative measures of inequalities would consider equivalent situations where the ratio between the health of the better and worse off are identical, while absolute measures of inequalities would consider equivalent situations where the difference between these two groups is the same. For instance, if smoking rates among the better-off were reduced from 20% to 10% and those of the worse-off from 30% to 20% over the same time period, the absolute inequality in smoking among the two groups would remain constant while the relative inequality would increase (moving from a situation where the worse-off smoked 1.5 more than the better-off to one where they smoke twice as much) – see Kjellsson Gerdtam and Petrie for a full discussion (2015[9]). Both approaches to measuring inequalities are equally valid and many studies present both types of measures including Devaux and Sassi (2013[7]) and Hu et al (2016[8]). The latter, as well as Mackenbach et al (2016[10]) look at trends in health inequalities and find that while relative inequalities have been increasing, absolute inequalities have been stable or even have decreased.

As reducing absolute, rather than relative, inequalities could be construed as a more realistic policy objective, this report focuses on the former. In other words, ***this body of work primarily reports and compares***

***absolute inequalities which factor in the level of the variable of interest*** – so that if two countries have the same relative inequality, the one with the higher average will be considered more unequal[5].

**Consolidating results and grouping countries**

The previous discussion demonstrates the existence of a number of reasonable alternative approaches to measuring and comparing inequalities. The fact that in most domains a number of indicators exist to illustrate different dimensions complicates matters further. For instance, health is often captured by at least three types of variables in surveys: self-assessed health, limitations in daily activity and the presence of chronic diseases; access to services is captured by enquiring about the utilisation of services (including consultations with various providers, hospitalisation, coverage of preventive services) as well as unmet needs.

Each set of methodological choices on any of the above variables is likely to lead to different assessments of how unequal countries are relative to one another for each variable of interest.

As the previous discussion hints, the general choice made in this report is to complement rather than duplicate the academic literature which typically focuses on the study of one domain – or even one variable within a domain – and reviews trends and/or sets of countries by comparing absolute and relative inequalities, and/or using different markers of socio-economic status. In contrast, this report goes for breadth by:

- Looking at the various domains in turn, in each case using all variables common to most surveys for a large set of countries;
- Selecting an approach to measuring inequalities by domain which generally allows comparison with the existing literature. In the preparation of this report, alternative approaches were nevertheless comprehensively tested. In most cases, the results differed or converged in a manner consistent with the implication of the underlying methodological choices and reporting all results would not have added value. Instead, through various chapters, results using alternative approaches are selectively presented when they meaningfully help nuance results. Detailed results of interest to specialists of each domain are also presented in the annexes.
- Considerable effort is put into summarising and consolidating the information. Rather than trying to rank countries finely on each variable of a given domain, the approach seeks to distinguish three broad groups of countries which have relatively low, high or intermediate levels of inequality when looking at variables jointly in a given domain. The robustness of the final groupings is then comprehensively tested[6].

## 1.2. Key findings on inequalities related to health

### *1.2.1. Poor health behaviour is more prevalent among the disadvantaged*

Lifestyles play an important role in explaining population health. For example, while at population-level around half of the decline in mortality by cardio-vascular diseases in the United Kingdom between 2000 and 2007 can be attributed to improvement in treatment, the reduction in risk factors accounts for an additional third of the mortality decline and it is much more important in explaining improvements among the lower income-groups (Bajekal et al., 2012[11]). Most behavioural risk factors are indeed more prevalent among disadvantaged individuals. The report shows:

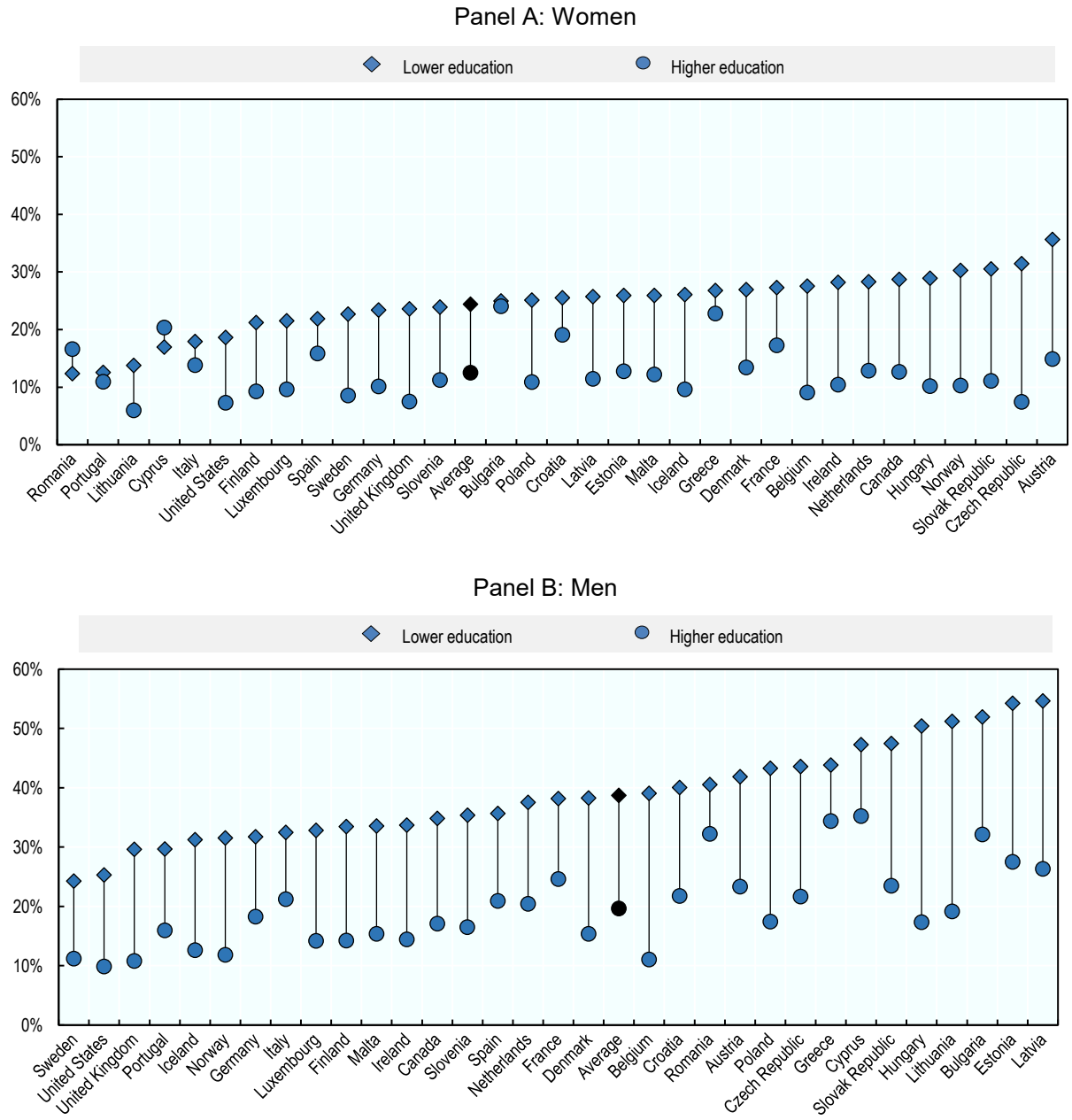
- Overweight and obesity, which are known risk factors for numerous health problems, have increased in many European and OECD countries over the past decades (OECD, 2017[12]; OECD/EU, 2018[13]). For both men and women, the prevalence of overweight and obesity is

generally higher among the low-educated. On average, the gap in overweight and obesity rates between those with tertiary education and those without a high school degree stands at 16 percentage points for women (36% for the most educated and 52% for the least educated) and at 4 percentage points for men (54% vs 58%). In all countries included in the analysis, the distribution of obesity and overweight is significantly unequal and to the detriment of the least educated for women. The same is true for men in 18 countries (in 13 countries the gradient is not significant). In Poland, inequalities are to the detriment of the most educated men. In Luxembourg, France, Spain, Italy and Denmark inequalities to the detriment of the less educated are relatively high for both men and women.

- Although smoking rates have been decreasing over the past decades, tobacco consumption remains a major public health issue worldwide. Across all European and OECD countries, more men than women tend to smoke. In total, one in five women and nearly one in three men are daily or occasional smokers. For both women and men, smoking rates are twice as high for people in the lowest education group compared to those in the highest one on average across 32 countries (Figure 1.2). The summary measures indicate significant inequalities to the detriment of women with lower education in 26 countries and to the detriment of higher educated women in three countries (Portugal, Romania and Cyprus). No gradient was found in the remaining three countries. For men, inequalities to the detriment of the least educated are significant everywhere and highest in the Baltic countries, Belgium and Hungary.
- Harmful alcohol use is a leading cause of death and ill health worldwide, especially in people of working age (Sassi, 2015[14]). Rates of heavy drinking (defined as consuming a daily amount of pure alcohol of 20 grams or more for women, and 40 grams or more for men) vary across countries, and are generally more common among men than women. On average across 28 European and OECD countries (27 in the case of women), 5% of men report heavy drinking compared to 3% among women. However, there is no clear social gradient in hazardous drinking habits in the majority of countries. Among women, heavy drinking becomes a greater problem as education decreases in three countries (Lithuania, Romania and Canada) and as education increases in seven (Austria, Belgium, Germany, Norway, Denmark, the United Kingdom and Luxembourg), and with no clear gradient in the remaining 17 countries. For men, those with higher education are less likely to be heavy drinkers but the population-level gradient in drinking habits is only significant in around half of the countries (13 out of 28).

Generally, these results are in line with previous research on inequalities in the exposure to risk factors.

## Figure 1.2. Age-standardised probabilities of smoking by education level




Note: Results correspond to the age-standardised probabilities. For women, the difference between education groups are significant at the 95% confidence level for all countries except Bulgaria, Cyprus, Greece and Portugal. For men, all difference are significant at the 95% level. See Chapter 2 for an overview of what the different education levels exactly refer to.
Source: OECD estimates based on national health survey data.

### *1.2.2. Across all countries, the chance that the least educated assess their health as poor is twice as high as for those with a high level of education*

On average across OECD and EU countries, life expectancy at birth has increased by over ten years since 1970. However, large inequalities in life expectancy exist by socio-economic status including education

level, income or occupational group. On average across countries for which data are available, people without high-school diploma can expect to live about 6 years less than those with tertiary education.

This education gap in life expectancy is due to higher mortality rates among the least educated at different ages. The least educated people have, for example, higher death rates from circulatory diseases and cancer (Mackenbach et al., 2016[10]; Mackenbach et al., 2017[15]). The greater prevalence of smoking and of excessive alcohol consumption, particularly among low-educated men contribute to these higher mortality rates.

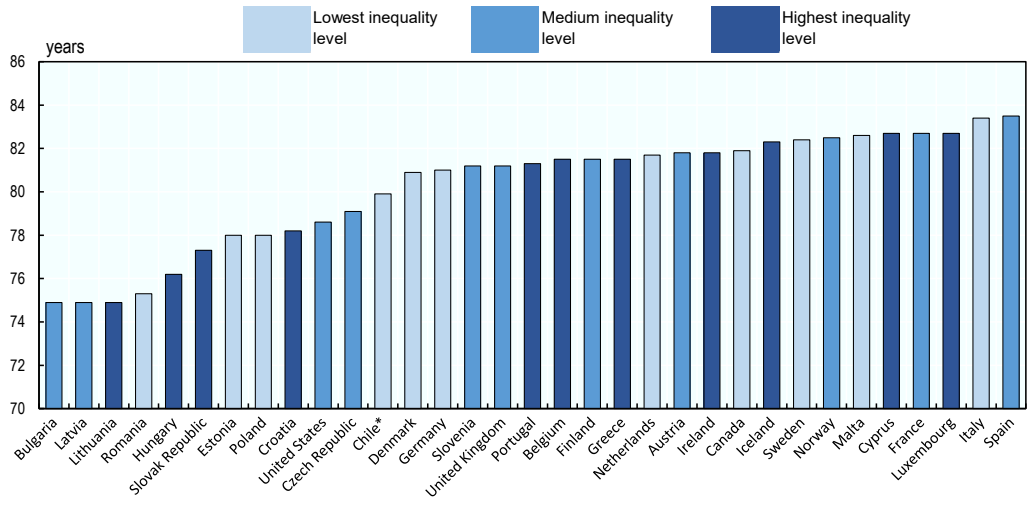
This report assesses the magnitude of the association between the socio-economic position and ill health measured by poor self-assessed health status, limitations in daily activities and multiple chronic conditions. The analysis shows that:

- Around one third of the population in the countries analysed assess their own health as poor. Differences in the age-sex standardised probabilities of poor self-assessed health between the highest and lowest education groups are substantial and significant in all countries. On average, 44% of those with a low level of education consider their health condition as poor compared to only 23% among those with tertiary education. This gap is particularly high in the United States, Luxembourg and Portugal where it reaches around 30 percentage points or more. It is comparatively low in Romania, Malta and Italy (less than 16 percentage points).
- Similar shares of the populations report limitations in daily activities (28%) and suffering from multiple chronic conditions (31%). However, the gaps between education groups are less pronounced for these variables. They stand at 16 percentage points for activity limitations and 11 percentage points for multi-morbidities.
- For the three variables which capture health status, population-level summary measures of inequalities show a gradient detrimental to the poor in all countries.

Considering jointly the information on inequalities across different health status variables suggests inequalities are consistently higher (or lower) in some countries. Additional analyses combining the inequalities for self-assessed health, activity limitations and multiple chronic conditions were undertaken to distinguish three groups of countries with low, intermediate and high levels of inequalities (see Box 2.6 in Chapter 2). Results are presented in Figure 1.3, which ranks countries by increasing life expectancy at birth and where the colour of the bar indicates the level of inequality based on this grouping (darker shades correspond to more widespread inequalities to the detriment of the least educated). This clustering shows, for example, that the highest education-related inequalities in health outcomes are found in Lithuania, Hungary and the Slovak Republic, while they are low in some Nordic countries (Denmark and Sweden) but also in Germany, the Netherlands as well as Romania and Poland.

The figure highlights that the correlation between the overall health status in a country (as measured by life expectancy at birth) and the level of education-related health inequalities is weak. Social inequalities in health outcomes can be high (Luxembourg), intermediate (Spain) and low (Italy) in countries with the highest life expectancy. The same is true for the countries at the bottom of the scale, where inequalities are high in Lithuania, intermediate in Bulgaria and Latvia and low in Romania.

**Figure 1.3. Life expectancy at birth and summary level of education-related health inequalities across European and OECD countries**




Note: The figure ranks countries by increasing life expectancy at birth while the colour of the bar indicates the level of inequality (darker shades correspond to more widespread inequalities to the detriment of the least educated). The levels of inequality are calculated based on a principle component analysis (see Chapter 2).
*The data for multiple chronic conditions was not available for Chile, however various analyses based on comparisons of data for self-assessed health and activity limitations demonstrate that the country belongs to the low inequality group.
Source: OECD estimates based on national health survey data.

The clustering of countries into the three different inequality groups is relatively consistent if *relative* inequality instead of *absolute* inequality measures are used. Using income instead of education as a marker of socio-economic differences, however, does lead to some changes in the inequality clustering. In particular, Sweden, Estonia, Denmark, Slovenia, the United Kingdom and the United States belong to the high inequalities group when socio-economic status is captured through income; and Ireland, Lithuania and Greece when health inequalities by education are measured. Yet, this should not be a surprise. Each country is characterised by a distribution of the population across education levels which can be more or less unequal; the wealth gap between people in the first and last income quintile is also likely to vary across countries; and the marginal impacts of income and education on health are unlikely to be identical.

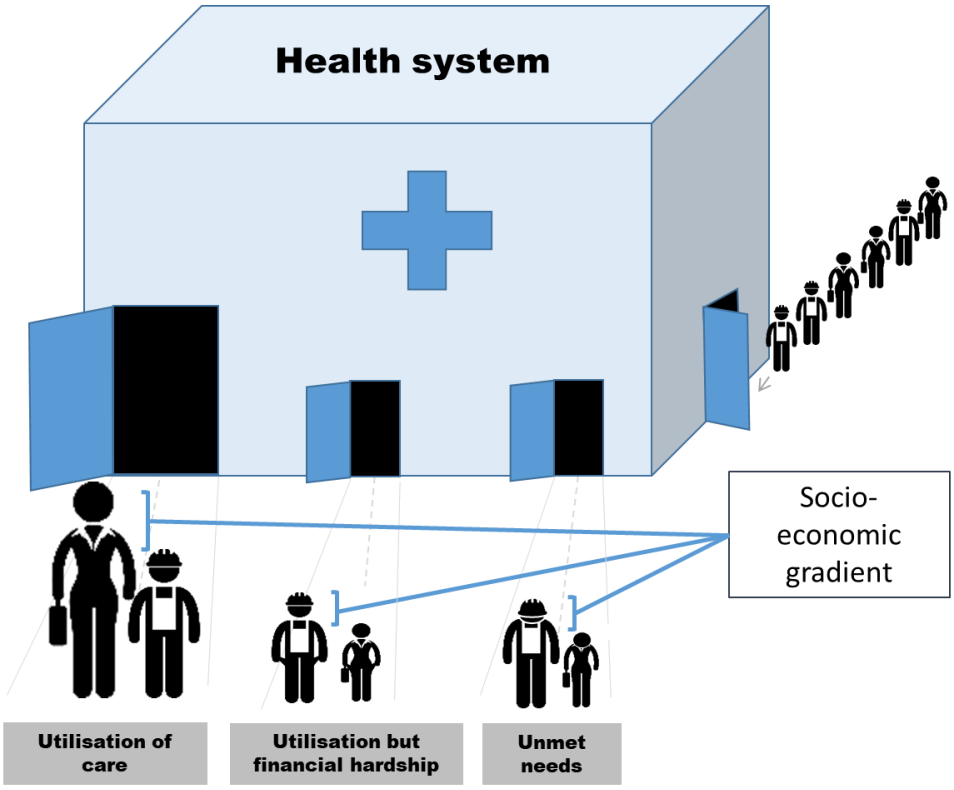
## 1.3. Key findings on inequalities in health systems

As outlined in the initial framework, if health systems provide care to all segments of the population based on need while protecting people from financial hardship, they contribute to moderating health and economic inequalities. This section examines the extent of inequalities in access to care.

- A first question is whether people obtain the services they should, given their needs. One strategy to answer this question consists in examining whether, for a given health status – a proxy of need – people have a comparable level of utilisation of the health care system.
- A second approach focuses more explicitly on determining whether people's needs are indeed met by asking them the question directly and enquiring about the type of barrier which precluded them from obtaining care.
- A frequently cited reason for forgoing care is cost but different people can make different choices when faced with having to pay for care. Indeed, some patients use the health system but face financial hardship as a result. Measuring affordability is therefore a third angle.

Figure 1.4 reframes the above approaches as three possible scenarios which can unfold when people turn to the health system. The first, and hopefully most frequent scenario (depicted by the first door), is that people will access quality care. However, some of them may suffer financial hardship in the process (second door). Finally, they may find their needs will not be (fully) met (third door), either due to barriers of access or low quality of services. The likelihood that these scenarios will unfold depends on patients' socio-economic circumstances. Better-off people may be in a more favourable position to navigate the system and obtain better quality care, to overcome barriers to care and ensure their needs are met. They are also less likely to face financial hardship. In sum, even if most health systems aim to treat people equally, the extent to which they do is the object of this section.

**Figure 1.4. Access to affordable quality care: Possible hurdles and related inequalities scenarios.**




Note: Figures simplistically portray people of higher (woman) or lower (man) socio-economic circumstances and their size represents the relative likelihood they have of facing a result rather than another when accessing the health care system (scale is not proportional).

### *1.3.1. More often than not, the use of curative and preventive services is concentrated among the better-off*

People access the health system when they have the need for care and, hopefully, their utilisation of the system is commensurate to their needs. A natural starting point in evaluating whether inequalities in accessing the health system exist is hence to explore whether, for the same level of needs, people with different income have a comparable level of utilisation of the health system.

*The better-off are more likely to see a doctor than the poor but once access is established the number of visits varies less systematically with income*

Income–related inequalities exist in the utilisation of some – but not all – curative health care services across EU and OECD countries:

- When controlling for differences in health care needs, a person with low-income is five percentage points less likely than a person with high income to see a GP (67% vs. 72%). The gap in the needs-adjusted probability is more than ten percentage points in seven countries (Bulgaria, Croatia, Finland, Greece, Latvia, Poland and Romania). The summary measure of inequality shows that the probability of seeing a GP in a year is more concentrated among higher income groups in slightly more than half of the countries (18 out of 32). The reverse is however true in Denmark and Spain. There is no social gradient in the probability of seeing a GP in 12 countries.
- Inequalities are much more pronounced for the probability of seeing a specialist. When controlling for differences in health care needs, a person with low income is 12 percentage points less likely than a person with high income to see a specialist (39% vs 51%). The summary measure of inequality show that the probability of a specialist visit is disproportionally concentrated among the better-off in all but three countries.
- Once access to a GP is secured, low-income patients have at least as many and sometimes more visits to the GP than the rich in all but one country. Similarly, the number of visits to the specialists is equally distributed in the majority of countries (18 out of 31). An intuitive interpretation of these findings is that lower-income people struggle more to reach the system but that once they have, they are in general likely to receive the same level of care as their higher-income counterparts.
- In the majority of countries (24 out of 33), the probability of hospital admission is not associated with income levels (after adjusting for differences in needs).

### *For preventive services, the probability of utilisation raises with income in most countries*

Despite fairly low inequalities in access to a GP, lower-income people consistently have a lower utilisation of preventive services in virtually all countries suggesting problems in the provision of comprehensive primary care for the entire population.

- In general, access to preventive services varies greatly across countries. For instance, among the three categories of cancer screening reviewed, cervical cancer screening has the highest coverage on average (71%) - yet it ranges from 27% in Romania to 87% in the Czech Republic over the last three years prior to the survey. Moreover, across OECD and EU countries, four in ten persons above 65 are immunised against the flu but this ratio is as low as 1% in Estonia and as high as 90% in Finland.
- For cervical, breast and colorectal cancers, the probabilities that low-income people in the target population will have undergone screening in the recommended period are 17, 13 and 6 percentage points lower than that of high-income people. Inequalities in favour of the rich prevail in the majority of countries but are slightly less systematic or marked for colorectal cancer (which has the lowest coverage rate).
- People in the lowest income quintile are nearly 20 percentage points less likely to have seen a dentist in a year. Summary measures point to very high inequalities detrimental to the poor in all but one country (Ireland). On the other hand, flu immunisation among the elderly is the least unequally distributed service among all preventive activities analysed, but given the small size of the samples for that population in various countries, these results are less robust.

### *Some countries are better at ensuring a more equal distribution of various types of care than others*

Considering jointly the degree of income-related inequalities in the utilisation of the different health care services described above, some general patterns emerge. Based on the average rank of each country's inequality index across seven services (GP visit, specialist visit, dentist visit, hospitalisation, as well as

cervical, breast and colorectal cancer screenings), countries are clustered into groups reflecting the overall level of inequalities in the utilisation of these preventive and curative services:

- the lowest levels of inequalities are found in Denmark, Estonia, Germany, Ireland, Lithuania, Luxembourg, the Netherlands, the Slovak Republic, Sweden, and the United Kingdom.
- the highest levels of inequalities are observed in Bulgaria, Croatia, Cyprus, Finland, Greece, Italy, Latvia, Poland, Romania, Slovenia, Spain, and the United States.
- The intermediate group comprises Austria, Belgium, Canada, the Czech Republic, France, Hungary, Iceland, Malta, Norway, and Portugal.

### *1.3.2. The less well-off are more likely to report unmet needs*

Asking people whether they faced barriers when trying to access care and the type of barrier they faced provides useful insights when assessing how accessible a health system is, a key dimension of health system performance. Unfortunately, the levels of unmet needs reported in national surveys depend to a large extent on the way the questions are asked, limiting the comparability across countries. For European countries, the results presented here (based on EHIS) differ substantially from those based on the survey of income and living conditions (EU-SILC) due to differences in the survey methodology. To improve international comparability of this important access indicator, additional efforts are needed to harmonise questionnaires.

#### *All types of unmet needs are more concentrated among the least well-off*

Delaying and forgoing care due to problems with availability or affordability is common in EU and OECD countries. In the year preceding the survey, more than a quarter of adults who felt they had a need for health care had faced some barriers in accessing services. Based on the EHIS survey of 2014, this proportion ranged from 10% in Norway to more than 40% in Estonia, Iceland, Latvia, Portugal, and Ireland.

In nearly all EU and OECD countries, there is a clear social gradient in unmet needs. Lower-income people experience more barriers to accessing care than the better off, with variations across countries and across reasons for unmet needs.

Turning to the different types of unmet needs the results of the analysis show:

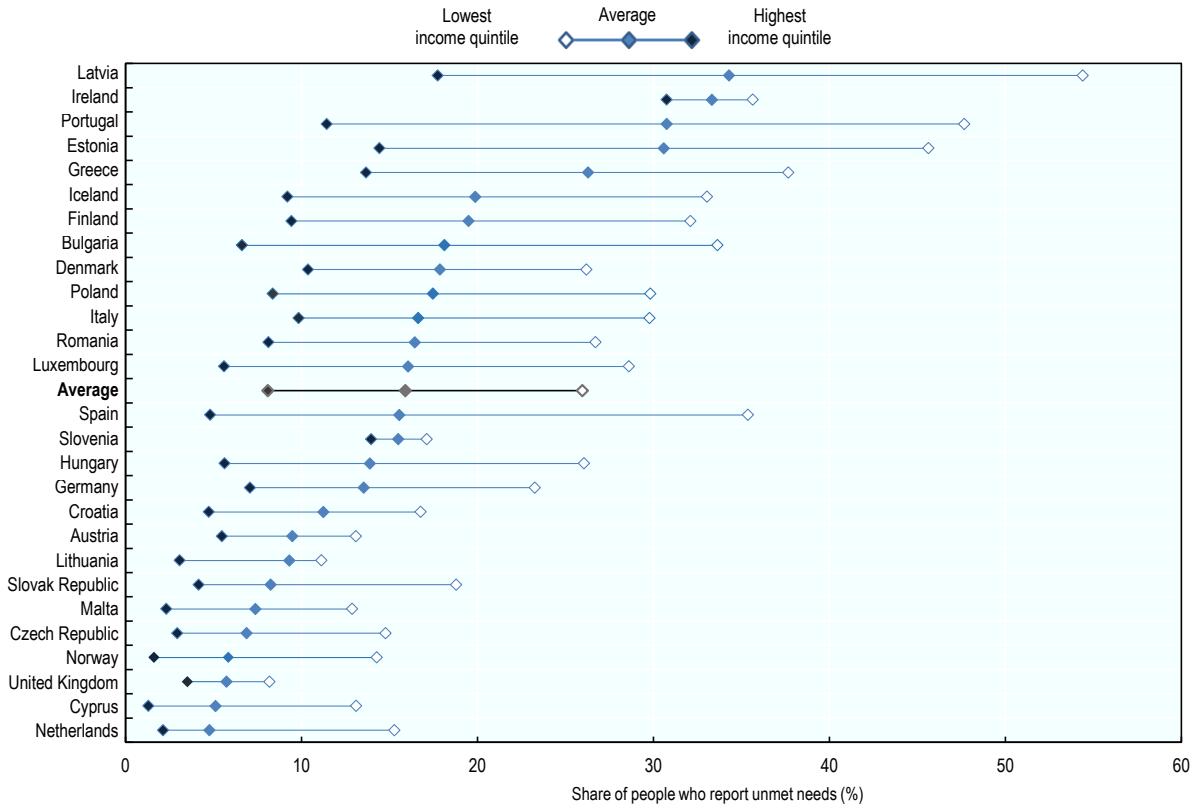
- Unmet needs due to long waiting times rise when households' income decreases in more than half of the countries. On average in EU and OECD countries, people in the lowest income quintile have a 20% chance of having postponed care due to waiting times versus 16% in the highest income quintile. This gap is 10 percentage points or above in Portugal, Italy and Finland, and inequalities significantly disadvantage the poor in 16 countries.
- Unmet needs due to long distance or transport problems also increase as income decreases in virtually all countries. On average in EU and OECD countries, 6% of people with low income have not received care soon enough or not at all for these reasons, compared to 2% in people with high income. The gradient of inequality to the disadvantage of the poor is significant in 26 countries. This type of unmet need is most common and very unequally distributed in Latvia, Croatia and Italy.
- Unmet care needs due to costs are more concentrated among lower income groups in all countries. 26% of people in the lowest income segment decided not to receive the care they needed due to financial reasons (either medical care, dental care, a prescribed medicine, or mental health care) compared to 8% of people with the highest level of income (Figure 1.5). Portugal, Latvia, Spain, and Estonia display the largest concentration of unmet needs for financial reasons among lower income groups, whereas inequalities are smallest in Austria, Ireland, Slovenia and the United Kingdom. Yet, among the latter, Ireland displays very high levels of unmet needs due to costs.

*Some countries concentrate inequalities in unmet needs*

All in all, patterns emerge for some countries when considering jointly the degree of inequality in the various types of unmet needs described above. This analysis shows that:

- The highest income-related inequalities for unmet needs to the detriment of the poor are found in Portugal, Italy, Finland, Bulgaria, Croatia, Latvia, Iceland, Greece and Germany. In seven of these countries, the proportion of people with at least one unmet need is above or at the average of all countries considered (28%). Bulgaria stands out as having a relatively low level of unmet needs but very large inequalities to the detriment of the poor.
- In the Netherlands, Denmark, Poland, Romania, Ireland, the Slovak Republic, Slovenia, Cyprus, Norway, the United Kingdom and Austria, inequalities in unmet needs are the most evenly distributed across income groups. Unmet needs in seven of these countries are below average. Ireland, Denmark and Poland stand out in this group because their very high levels of unmet needs (above 35%) seems to affect all income groups in a similar fashion.
- Hungary, Spain, France, Luxembourg, Lithuania, Sweden, Estonia, Czech Republic and Malta have more intermediate levels of inequalities in unmet needs.

## Figure 1.5. Proportion of the population forgoing care because of the cost, by income quintile




Note: Data from 27 European countries. France, Sweden and the United States are not included in this chart because the data was not strictly comparable due to different wording in the questions (see more details in Chapter 4).
Source: OECD estimates based on national health survey data.

These results suggest that countries with lower (higher) levels of unmet needs generally also have lower (higher) degrees of absolute inequalities, but the correlation is not very strong.

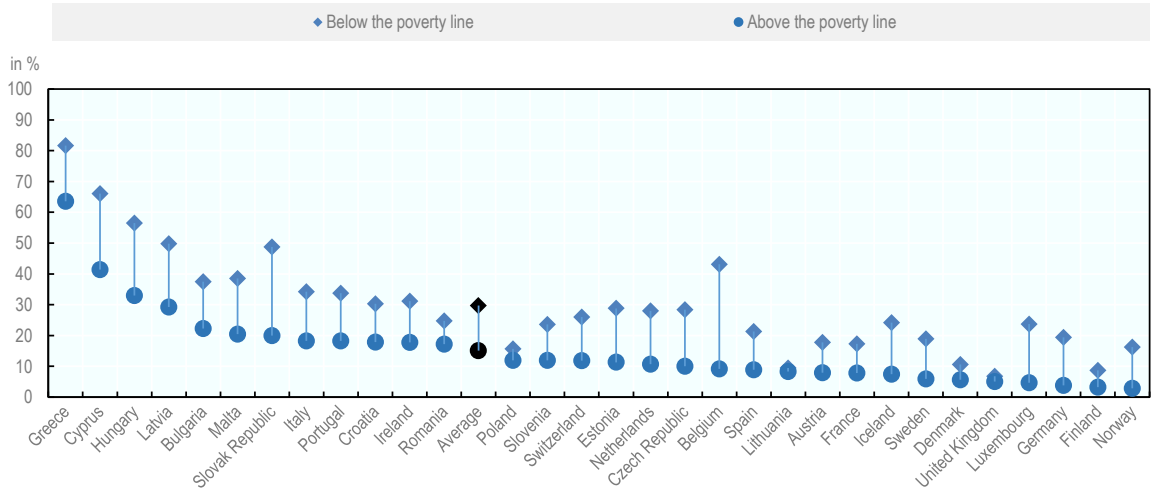
### *1.3.3. Even if access to care is assured, it can lead to financial hardship – especially for the poor*

If people turn to the health system and obtain care, it can put a financial strain on some households, especially those with low income. This is due to the fact that health service utilisation frequently requires direct payments by patients. In all OECD and EU countries, access to key health services is partly financed through third-party payment mechanisms for the majority of the population, such as tax-financed government schemes or social health insurance. Yet, when they seek care, people may nevertheless end up spending out of their own pocket if the costs of services are not fully covered or services not included in the collectively financed benefit baskets. Faced with the need to pay, some patients may simply forgo needed care. Others may pay but suffer financial hardship as a result. The results show:

- Based on the results of the 2016 survey on income and living conditions (SILC) undertaken in Europe, people with low income are more likely to declare finding care unaffordable. Nearly 17% of the population declared they could only afford care with difficulty or great difficulty but the proportion was 30% for those below the poverty line[7] (representing around 15% of the population). These difficulties are most pronounced in Greece where more than 60% of the people above the poverty line report difficulties in affording health care services (reaching more than 80% for those below the poverty line) (Figure 1.6).
- In that survey, the United Kingdom, Finland, Denmark and to a lesser extent Lithuania, stand out as countries where problems with affordability are below average and the poor do not seem to face considerably higher affordability issues than the rest of the population. On the other hand, differences in the affordability across income groups are very high in Belgium and the Slovak Republic.

## Figure 1.6. Share of households with difficulties to afford health care services, 2016

Share of households that responded being able to afford health care services only with difficulties or with great difficulties




Note: Below the poverty line refers to households with 60% or less of median equalised income.
Source: EU-SILC ad-hoc module 2016.

*Low-income households are more likely to face catastrophic health expenditure*

Financial hardship due to health service utilisation is more likely to occur in lower income households. This outcome can be measured with data from household budget surveys applying the concept of "catastrophic health spending". This indicator identifies households that spend a high proportion of their resources on health care via out-of-pocket payments. Using the methodology recently developed by the WHO Regional Office for Europe, the proportion of households facing catastrophic health spending ranges from around in 1% in Slovenia, the Czech Republic, Ireland and the United Kingdom to 15% in Lithuania , with an average of 5.5% for the 19 countries included in this report (WHO Regional Office for Europe, 2019[16]). Everywhere, households in the bottom income quintile are considerably more likely to incur catastrophic health spending.

The design of the package of the collectively financed health care goods and services as well as population coverage can both play a role in explaining the wide variation between countries in the population shares facing catastrophic health expenditure. Hospital care and medical outpatient care are covered relatively well in most EU and OECD countries. This is not necessarily the case for pharmaceuticals and dental care. High out-of-pocket costs for pharmaceuticals is the main reason why poor people face catastrophically high health care costs. Faced with high costs of dental treatment, people with low income may forgo care altogether because they cannot afford it in countries with low coverage for this type of care.

Most OECD and EU countries have achieved or are on the way to achieve universal health care coverage but in a number of countries including the Bulgaria, Romania, Estonia, Poland, the United States and Mexico, a substantial part of the population is not covered against the cost of care. Obviously, households without any type of financial protection are more likely to encounter catastrophically high health care costs than those with coverage.

## 1.4. Conclusions

### *1.4.1. In all health domains analysed, inequalities to the detriment of the most disadvantaged prevail*

Throughout the publication and as described in this chapter, the latest evidence shows the existence of health-related inequalities to the detriment of disadvantaged groups in all OECD and EU countries:

Nearly everywhere, less educated people are more likely to be overweight and smoke and even if the social gradient for hazardous alcohol consumption is less clear, overall, behavioural risk factors are more likely to take a toll on the health of those with lower education.

Poor health – as assessed by people themselves, or when they report limitations in activities and chronic diseases – is systematically more concentrated among those with lower education.

In most countries, for a given level of need, the better-off are more likely to see a doctor than the poor. These inequalities exist for visits to GPs and specialists alike, but are much more pronounced for specialists. However, once access to a doctor is established the number of visits does not vary with income in the majority of countries. The use of preventive services is almost systematically concentrated among higher income groups.

Unmet care needs due to costs are more concentrated among those with lower income in all countries. Unmet needs for care due to distance and waiting times is less common but also to the detriment of the poor in the vast majority of countries.

In all countries for which data is available, the share of households reporting difficulties to afford health care is higher for those with an income below the poverty line. Low-income households are also more likely to face catastrophic health expenditure.

However, there are substantial differences in the extent to which these inequalities exist across countries.

### *1.4.2. Some pattern emerge when jointly analysing inequalities across different domains*

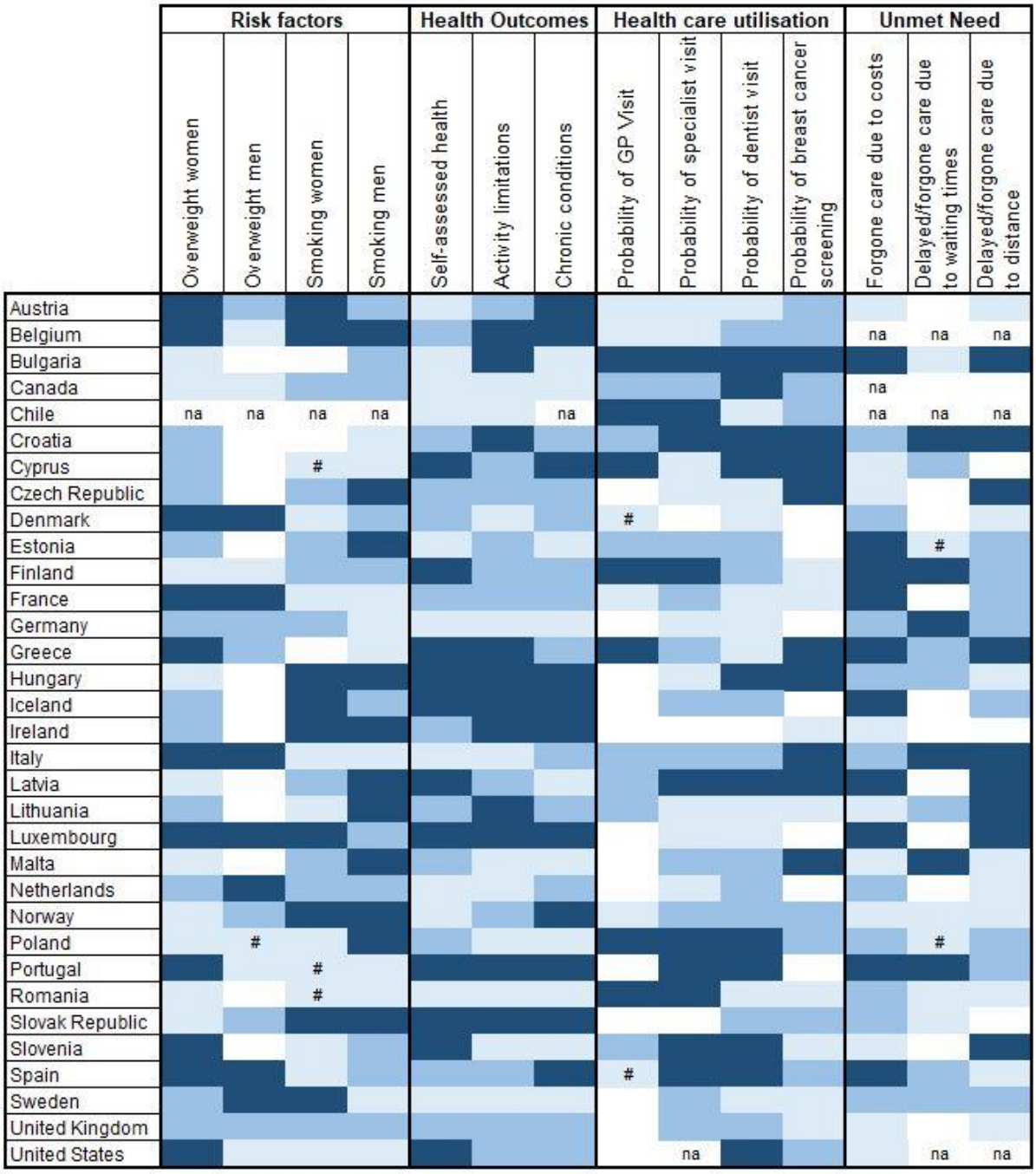
One question this conclusion attempts to explore is whether some storylines emerge from pulling together the various results presented in the different chapters of this report. In each thematic chapter, inequalities in risk factors, health, service utilisation and unmet needs were measured along a range of indicators. This information was used to group countries depending on whether they generally displayed lower, intermediate or higher levels of inequalities in each domain. It is important to underline that these classifications, which summarise the wealth of results obtained for each inequality domain, are both relative by nature8 and in part arbitrary as driven by the decision to systematically divide countries in three groups. They also reflect the position taken in this report to presents results on absolute (versus relative) inequalities, when both measures can be legitimately used to assess inequalities and would not systematically result in the same ranking9.

As a final summary, Figure 1.7 presents an inequality overview for 14 key indicators covered in the different domains discussed in this publications, i.e. risk factors (Section 3 in Chapter 2), health outcomes (Section 4 in Chapter 2), service utilisation (Chapter 3) and unmet needs (Chapter 4)[10]. While some countries appear to fare better than others when jointly comparing the ranking across the 14 indicators, no clear systematic pattern can be discerned at first sight. Yet, such a comparison suggests:

- No country displays exclusively low or high inequalities across all indicators of the four domains and all countries bar one have high and low inequalities for at least one indicator. The only exemption is the United Kingdom, which does not rank in the high inequality category for any of the 14 indicators presented here.
- For the selected indicators of the risk factors and health status domains, Canada and Romania combine relatively low education-related inequalities. This finding, however, needs to be seen in the context with overall indicator *levels*. In both countries, the share of the population being overweight is above the OECD and EU average. The same is true for smoking rates for men in Romania. For Canada, the low inequalities in the indicators of health outcomes presented here mirror the very low education-related inequality in life expectancy. This is, however, not the case in Romania.
- On the other hand, Luxembourg, Belgium and the Slovak Republic combine relatively high inequalities in the domains of risk factors and health status. But again, levels matter. In Luxembourg and Belgium, smoking rates and the share of the population being overweight are below average. Health outcome indicators in Belgium are also consistently better than on average across all countries analysed. That said, in addition to displaying high inequalities in the health outcomes indicators presented here, the Slovak Republic also has the largest difference in life expectancy across education groups.
- When it comes to the health system indicators, inequalities in service utilisation and unmet needs are generally lower in Denmark, Ireland, the Netherlands and the United Kingdom. Looking at the probabilities of having a visit to the doctor, dentist or cancer screening, Denmark, Germany, Ireland and Luxembourg are successful in keeping differences across income groups at bay. For unmet needs, Austria, Norway, Ireland and the United Kingdom are among the countries that manage to have low inequalities. However, Ireland is among the countries with the highest rates of unmet needs overall. This suggested that, regardless of socio-economic characteristics, all population groups have similar problems to get access to the system. Austria, on the other hand, combines small differences across population groups with low levels of unmet needs overall.
- Income-related inequalities in utilisation and unmet needs go hand in hand and seem generally higher in Bulgaria, Latvia, Croatia, Greece and Finland. This may suggest a certain regularity in health systems: when countries struggle to deliver equal utilisation of health services across different population groups they also face problems to prevent inequalities in unmet needs. This may partly reflect limitations in the level of coverage and financial protection in those countries. With the exception of Finland and Croatia, these countries generally have above average shares of out-of-pocket payments for health care – they are as high as 45% in Latvia and 48% in Bulgaria.

## Figure 1.7. Dashboard on inequalities in risk factors, health outcomes, access and unmet needs

(Light/medium/dark blue indicate low/intermediate/high levels of inequality)




Note: Key indicators were chosen for each of the four domains as discussed in the respective chapters. Categorisation of countries for each indicator are based on inequality indices presented in the annexes of Chapter 2 to 4. For each indicator, countries were clustered into three groups of equivalent size. Light/medium/dark blue indicate low/intermediate/high levels of inequality to the detriment of the poor/less educated for a given indicator. A white cell indicates no significant inequality. Countries with inequalities to the detriment of the rich/higher educated were ranked in the category of lower levels on inequality (cells are marked with #). Not all countries had data available to measure inequalities for all indicators (na).

Source: Analysis presented in the report based on national health surveys.

### *1.4.3. Policies to redress inequalities in health*

This report shows that inequalities in health and health systems are widespread, and most OECD and EU countries could make societies more inclusive by tackling them. A wide range of policy options exists to make this happen.

While health systems and policies are often built and therefore presumed to treat people with similar needs equally, more tailored solutions still seem to be required to reduce inequalities. Public health interventions, for instance, should be more explicitly evaluated for their ability to reduce harmful practices among the less advantaged. Some policies could focus in particular on those population groups that are most prone to adopting unhealthy lifestyles. Improving health literacy should also help close the inequality gap on risk factors and access to care. Health literacy is generally lower among the poor and less educated, creating a barrier in understanding and applying health information as well as problems navigating the health system effectively. While many of the policies to enhance health literacy aim to develop individual knowledge and empowerment to act on health information, they can also focus on creating an enabling environment, for example, by improving professionals' communication skills (Moreira, 2018[17]).

Beyond public health interventions and health literacy, the health care system can also contribute to redress health-related inequalities. The large differences in cancer screening rates between the rich and the poor in some countries indicate that current screening programmes and primary health care models are not succeeding in delivering recommended preventive care to the entire population. A reconfiguration of primary health care delivery towards more patient-centred models may be needed to better reach out to population groups of lower socio-economic status who frequently live in disadvantaged areas (OECD, forthcoming[18]). New strategies to recruit and retain doctors in underserved areas or the implementation of new service delivery models may help to decrease inequalities in access to care. These models can include, for example, mobile health clinics, which already provide a variety of primary care services to populations living in rural or disadvantaged urban areas in a number of OECD countries. Beyond primary care, better infrastructure and capacity planning as well as the introduction of waiting times guarantees may help alleviate the problem of long-waiting times for treatment – which is also more common among poorer population groups.

When it comes to financial protection, countries that automatically cover the entire resident population and where coverage is not occupation-based are more effective in avoiding that disadvantaged groups "fall through" the safety net as they may not have access to the type of jobs that would guarantee coverage at all time. When designing benefits packages, countries should strive to implement policies explicitly limiting the financial burden of those on low incomes.

Addressing health inequalities experienced by particular disadvantaged population groups in some countries, such as indigenous peoples, ethnic and linguistic minorities, which may face additional barriers to health care, can require more tailored approaches than those set out above. A key focus should lie on improving access to health services that are responsive to particular health care needs and culturally appropriate. Developing adequate resources to support health literacy for these population groups is also crucial since -compared to other population groups- they may also face potential language and cultural barriers.

While a large part of the response to redressing health inequalities certainly lies within the health system, additional policies beyond the health sector are also key. These include a range of labour market, education, environmental, housing and social policies, which not only benefit the poor but also contribute to reducing inequalities in health (James, Devaux and Sassi, 2017[19]; OECD, 2017[1]). Policies that boost the incomes of families with low incomes, including changes in taxation, benefits and minimum wages, can contribute to improved health outcomes for many people on low income. Employment policies adapted for the disadvantaged can have the dual benefit of increasing employment and improving the health among such groups. Policies that improve educational attainment will have a direct impact on health by improving

health literacy. To this aim, a number of countries have implemented dedicated health education classes in schools (Moreira, 2018[17]). Reducing air pollution in cities could disproportionally improve health outcomes of the poor, since often it is those living in communities with low socio-economic status that are more exposed to air pollutants than better-off areas. Poor housing conditions and certain neighbourhood characteristics such as the risk of crime can also negatively influence health –with low-income households generally more affected. To address these issues, policies targeting better housing infrastructure and rental assistance programmes have shown some positive health impact.

### *1.4.4. Inequality is only one dimension when assessing the performance of a health system*

The intention of this report is to provide an overview of inequalities in health and health systems. At the same time, it needs to be stressed that inequalities are only one aspect to consider when measuring the overall performance of a health system. Indeed, good performance on inequalities does not necessarily imply good performance on health outcomes or other important system domains. For instance, among the countries that generally display lower inequalities in health status, life expectancy in Sweden is seven years higher than in Romania. Conversely, while inequalities in risk factors and health outcomes are frequently high in both Belgium and Hungary, life expectancy in the former is more than five years higher, and, on average, Belgians report better health outcomes. And while Ireland appears to be faring relatively well in limiting overall health system-related inequalities, the level of unmet needs remains very high – which means that all population groups are equally affected by access limitations. In summary, the diagnostic presented here on inequalities should be used to nuance the assessment of a country's performance and not as the sole criterion in evaluating a health system. The country-specific summary tables presented in the annex to this chapter can serve as a starting point for these discussions (Annex Table 1.A.1-7).

### *1.4.5. A better harmonisation of national health surveys is desirable to make international comparisons more robust*

Most results presented in this publication stem from national health surveys. Health surveys are a vital tool in evaluating population health and additional issues of relevance of a health system in a national context. In particular, they often are the only data source that allows the comparison of results across the socio-economic scale, whether it is measured through education or income. At the same time, comparing results of health surveys internationally is always a challenge. The wording of questions across surveys may differ and even if the questions are identical the possible answers may vary. Beyond survey design, there are other methodological issues that may hamper comparability. This refers, for example, to sample sizes used, and the questions whether the surveys are representative for the entire population or certain population groups excluded.

A key lesson from this report is that international efforts should be strengthened in harmonising health surveys across OECD countries. While within Europe much has been achieved with the repeated waves of the European Health Interview Survey (EHIS) there is little co-operation beyond this. Comparing results of more closely aligned surveys should be beneficial to policy makers in all OECD countries.

A final point on data limitation concerns quality of care. To assess whether there are quality differences in the health care services received between socio-economic groups, regular health surveys are of limited use. The reason for this is that the vast majority of respondents are not in a position to assess whether the care they received is of adequate quality. Typically, they will not know whether the health professionals they consulted follow evidence-based guidelines for treatment or whether all safety-standards were applied. Yet, one component of quality that patients are able to evaluate is their experience when seeking care. Expanding on this, OECD is currently working on the development of a patient-reported indicators survey (PaRIS) to shed some light on outcomes that matter to patients. In the future, this survey instrument may also be used to assess differences in the quality of services received between socio-economic groups.

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# Annex 1.A. Summary tables

## Annex Table 1.A.1. Key results, country-by-country

| | Austria | | Belgium | | Bulgaria | | Canada | |
|---|---|---|---|---|---|---|---|---|
| | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality |
| **Risk factors** | | | | | | | | |
| Smoking, M [a] | 33% | 0.24* | 27% | 0.35* | 45% | 0.24* | 22% | 0.21* |
| Smoking F [a] | 28% | 0.23* | 20% | 0.25* | 28% | -0.02 | 18% | 0.21* |
| Overweight and Obesity, M [a] | 56% | 0.12* | 54% | 0.09* | 62% | -0.02 | 65% | 0.04* |
| Overweight and Obesity, F [a] | 40% | 0.28* | 42% | 0.33* | 47% | 0.17* | 52% | 0.14* |
| Heavy drinking, M [a] | 2% | 0.01 | 7% | 0.09* | 2% | 0.05* | 4% | 0.02* |
| Heavy drinking, F [a] | 1% | -0.01* | 7% | -0.08* | 1% | 0.00 | 2% | 0.01* |
| **Health** | | | | | | | | |
| Poor self-assessed health [a] | 22% | 0.21* | 23% | 0.27* | 34% | 0.24* | 43% | 0.25* |
| Limitations in daily activity [a] | 32% | 0.17* | 23% | 0.22* | 25% | 0.21* | 19% | 0.13* |
| 2+ chronic diseases [a] | 34% | 0.16* | 28% | 0.16* | 26% | 0.09* | 15% | 0.09* |
| **Access** | | | | | | | | |
| Prob. of a doctor visit [b] | 86% | 0.014* | 84% | 0.011* | 77% | 0.059* | 76% | 0.022* |
| Prob. of a GP visit [b] | 76% | 0.011* | 79% | 0.012* | 74% | 0.061* | 71% | 0.026* |
| Nb. of GP visits [b] | 0.65 | 0.000 | - | - | 0.75 | -0.022 | 2.48 | 0.000 |
| Prob. of a specialist visit [b] | 63% | 0.032* | 48% | 0.019* | 32% | 0.137* | 32% | 0.056* |
| Nb. of specialist visits [b] | 0.53 | 0.024* | - | - | 0.56 | -0.094* | 1.06 | 0.024 |
| Prob. of hospitalisation [b] | 15% | 0.016 | 10% | -0.027 | 10% | 0.001 | 8% | -0.068* |
| Prob. of cervical screening [c] | 87% | 0.018* | 76% | 0.025* | 52% | 0.088* | 76% | 0.018* |
| Prob. breast screening [c] | 73% | 0.025* | 75% | 0.030* | 32% | 0.052* | 74% | 0.023* |
| Prob. colorectal screening [c] | 71% | 0.015* | 35% | 0.010 | 7% | 0.009* | 49% | 0.018* |
| Prob. of Flu vaccination [c] | 20% | 0.018* | 59% | -0.010 | - | 0.000 | 58% | 0.017* |
| Prob. of dentist visit [c] | 72% | 0.026* | 60% | 0.044* | 45% | 0.069* | 66% | 0.069* |
| **Unmet needs** | | | | | | | | |
| Forgone care due to cost [c] | 9% | -0.013* | - | - | 18% | -0.047* | - | - |
| Waiting time [c] | 11% | -0.002 | - | - | 4% | -0.008* | 19% | 0.001 |
| Distance [c] | 2% | -0.003* | - | - | 4% | -0.016* | 2% | 0.000 |

Note: Summary measures of inequality: a Slope index of inequality by education, b Concentration Index by income c Generalised Concentration Index by income. * the summary measure is significant. Explanations about data and methods can be found in the relevant chapters.
Source: Results in the report.

## Annex Table 1.A.2. Key results, country-by-country

| | Chile | | Croatia | | Cyprus | | Czech Republic | | Denmark | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality |
| **Risk factors** | | | | | | | | | | |
| Smoking, M [a] | | - | 33% | 0.19* | 44% | 0.18* | 36% | 0.27* | 23% | 0.23* |
| Smoking F [a] | | - | 26% | 0.02 | 19% | -0.09* | 23% | 0.21* | 20% | 0.16* |
| Overweight and Obesity, M [a] | | - | 67% | 0.00 | 59% | -0.05 | 64% | 0.06 | 54% | 0.21* |
| Overweight and Obesity, F [a] | | - | 48% | 0.23* | 38% | 0.20* | 49% | 0.20* | 40% | 0.24* |
| Heavy drinking, M [a] | | - | 3% | 0.04 | 1% | 0.03 | 4% | 0.02 | 6% | 0.01 |
| Heavy drinking, F [a] | | - | 0% | 0.00 | 1% | 0.03 | 2% | 0.00 | 6% | -0.05* |
| **Health** | | | | | | | | | | |
| Poor self-assessed health [a] | 42% | 0.21* | 41% | 0.26* | 20% | 0.29* | 32% | 0.27* | 24% | 0.27* |
| Limitations in daily activity [a] | 8% | 0.08* | 34% | 0.24* | 22% | 0.21* | 36% | 0.16* | 37% | 0.11* |
| 2+ chronic diseases [a] | - | - | 37% | 0.16* | 20% | 0.20* | 30% | 0.12* | 28% | 0.14* |
| **Access** | | | | | | | | | | |
| Prob. of a doctor visit [b] | 22% | 0.089* | 77% | 0.026* | 66% | 0.039* | 86% | 0.008* | 83% | -0.013* |
| Prob. of a GP visit [b] | 16% | 0.043* | 72% | 0.025* | 14% | 0.050* | 75% | 0.000 | 80% | -0.017* |
| Nb. of GP visits [b] | 0.69 | -0.012 | 0.83 | 0.018 | 0.41 | -0.006 | 0.57 | -0.030* | 0.75 | -0.051* |
| Prob. of a specialist visit [b] | 10% | 0.176* | 48% | 0.076* | 61% | 0.041* | 62% | 0.036* | 35% | 0.005 |
| Nb. of specialist visits [b] | 0.31 | 0.113* | 0.59 | -0.041 | 0.55 | 0.014 | 0.6 | 0.002 | 0.72 | -0.006 |
| Prob. of hospitalisation [b] | 5% | -0.008 | 10% | 0.027 | 8% | 0.025 | 12% | 0.023 | 8% | -0.046 |
| Prob. of cervical screening [c] | 72% | 0.007* | 77% | 0.043* | 65% | 0.046* | 87% | 0.029* | 64% | 0.047* |
| Prob. breast screening [c] | 61% | 0.022* | 67% | 0.046* | 66% | 0.054* | 77% | 0.039* | 82% | -0.007 |
| Prob. colorectal screening [c] | - | - | 31% | 0.026* | 18% | 0.018* | 57% | 0.008 | 48% | 0.003 |
| Prob. of Flu vaccination [c] | - | - | 25% | 0.001 | 33% | 0.012 | 16% | 0.006 | 48% | -0.014 |
| Prob. of dentist visit [c] | 6% | 0.010* | 54% | 0.046* | 48% | 0.053* | 76% | 0.029* | 81% | 0.020* |
| **Unmet needs** | | | | | | | | | | |
| Forgone care due to cost [c] | - | - | 11% | -0.022* | 5% | -0.020* | 7% | -0.018* | 18% | -0.038* |
| Waiting time [c] | - | - | 22% | -0.013* | 8% | -0.010* | 11% | -0.004 | 23% | -0.002 |
| Distance [c] | - | - | 6% | -0.012* | 0% | 0.000 | 6% | -0.010* | 3% | -0.006* |

Note: Summary measures of inequality: a Slope index of inequality by education, b Concentration Index by income c Generalised Concentration Index by income. * the summary measure is significant. Explanations about data and methods can be found in the relevant chapters.
Source: Results in the report.

## Annex Table 1.A.3. Key results, country-by-country

| | Estonia | | Finland | | France | | Germany | | Greece | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality |
| **Risk factors** | | | | | | | | | | |
| Smoking, M [a] | 39% | 0.33* | 23% | 0.23* | 33% | 0.18* | 25% | 0.18* | 41% | 0.14* |
| Smoking F [a] | 20% | 0.19* | 17% | 0.21* | 25% | 0.14* | 19% | 0.20* | 28% | -0.02 |
| Overweight and Obesity, M [a] | 56% | -0.04 | 61% | 0.07* | 53% | 0.13* | 59% | 0.13* | 66% | 0.13* |
| Overweight and Obesity, F [a] | 51% | 0.19* | 47% | 0.16* | 41% | 0.35* | 44% | 0.21* | 48% | 0.26* |
| Heavy drinking, M [a] | 2% | 0.07* | 6% | 0.00 | - | - | 4% | 0.02 | 3% | 0.01 |
| Heavy drinking, F [a] | 0% | 0.00 | 4% | 0.01 | - | - | 3% | -0.03* | 1% | -0.01 |
| **Health** | | | | | | | | | | |
| Poor self-assessed health [a] | 42% | 0.23* | 37% | 0.30* | 32% | 0.27* | 29% | 0.22* | 26% | 0.31* |
| Limitations in daily activity [a] | 38% | 0.18* | 38% | 0.18* | 26% | 0.19* | 23% | 0.16* | 30% | 0.25* |
| 2+ chronic diseases [a] | 26% | 0.06* | 49% | 0.12* | 36% | 0.12* | 50% | 0.10* | 26% | 0.16* |
| **Access** | | | | | | | | | | |
| Prob. of a doctor visit [b] | 76% | 0.028* | 75% | 0.045* | 90% | 0.011* | 87% | 0.008* | 77% | 0.028* |
| Prob. of a GP visit [b] | 66% | 0.025* | 68% | 0.049* | 88% | 0.011* | 79% | 0.000 | 59% | 0.032* |
| Nb. of GP visits [b] | 0.47 | 0.001 | 0.52 | -0.017 | 0.78 | -0.025* | 0.9 | -0.043* | 0.67 | 0.007 |
| Prob. of a specialist visit [b] | 51% | 0.041* | 42% | 0.083* | 49% | 0.058* | 65% | 0.029* | 47% | 0.044* |
| Nb. of specialist visits [b] | 0.71 | -0.044 | 0.53 | 0.046* | 0.7 | -0.011 | 0.91 | -0.013 | 0.61 | 0.006 |
| Prob. of hospitalisation [b] | 10% | -0.066* | 9% | -0.003 | 12% | -0.008 | 15% | -0.034* | 9% | 0.028 |
| Prob. of cervical screening [c] | 58% | 0.042* | 79% | 0.035* | 82% | 0.034* | 81% | 0.024* | 76% | 0.024* |
| Prob. breast screening [c] | 39% | 0.005 | 86% | 0.019* | 87% | 0.020* | 74% | 0.006 | 60% | 0.042* |
| Prob. colorectal screening [c] | 16% | -0.006 | 30% | 0.001 | 64% | 0.025* | 74% | 0.012* | 23% | 0.013* |
| Prob. of Flu vaccination [c] | 1% | 0.000 | 91% | -0.003 | 55% | -0.004 | 48% | -0.005 | 52% | 0.016* |
| Prob. of dentist visit [c] | 50% | 0.035* | 57% | 0.038* | 55% | 0.026* | 82% | 0.010* | 48% | 0.029* |
| **Unmet needs** | | | | | | | | | | |
| Forgone care due to cost [c] | 31% | -0.054* | 19% | -0.043* | 19% | -0.051* | 14% | -0.028* | 26% | -0.042* |
| Waiting time [c] | 18% | 0.013* | 20% | -0.024* | 14% | -0.003 | 25% | -0.011* | 16% | -0.008* |
| Distance [c] | 4% | -0.008* | 4% | -0.009* | 3% | -0.009* | 4% | -0.009* | 8% | -0.010* |

Note: Summary measures of inequality: a Slope index of inequality by education, b Concentration Index by income c Generalised Concentration Index by income. * the summary measure is significant. Explanations about data and methods can be found in the relevant chapters.
Source: Results in the report.

## Annex Table 1.A.4. Key results, country-by-country

| | Hungary | | Iceland | | Ireland | | Italy | | Latvia | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality |
| **Risk factors** | | | | | | | | | | |
| Smoking, M [a] | 34% | 0.41* | 21% | 0.24* | 24% | 0.27* | 29% | 0.17* | 44% | 0.36* |
| Smoking F [a] | 22% | 0.29* | 18% | 0.24* | 20% | 0.27* | 18% | 0.04* | 20% | 0.20* |
| Overweight and Obesity, M [a] | 61% | -0.01 | 65% | 0.02 | 62% | 0.01 | 53% | 0.13* | 58% | -0.06 |
| Overweight and Obesity, F [a] | 49% | 0.19* | 48% | 0.20* | 48% | 0.22* | 36% | 0.25* | 54% | 0.10* |
| Heavy drinking, M [a] | 4% | 0.08* | 1% | 0.02 | 9% | 0.03 | - | - | 8% | 0.06* |
| Heavy drinking, F [a] | 1% | 0.01 | 1% | 0.00 | 8% | -0.02 | - | - | 2% | -0.01 |
| **Health** | | | | | | | | | | |
| Poor self-assessed health [a] | 39% | 0.38* | 26% | 0.34* | 17% | 0.28* | 31% | 0.22* | 51% | 0.31* |
| Limitations in daily activity [a] | 30% | 0.26* | 26% | 0.21* | 28% | 0.23* | 27% | 0.14* | 43% | 0.19* |
| 2+ chronic diseases [a] | 37% | 0.17* | 37% | 0.22* | 24% | 0.17* | 32% | 0.13* | 41% | 0.08* |
| **Access** | | | | | | | | | | |
| Prob. of a doctor visit [b] | 84% | 0.013* | 76% | 0.011* | 78% | 0.003 | 81% | 0.019* | 77% | 0.035* |
| Prob. of a GP visit [b] | 76% | 0.003 | 68% | 0.010 | 74% | 0.004 | 75% | 0.015 | 71% | 0.027* |
| Nb. of GP visits [b] | 0.71 | -0.016 | 0.45 | -0.007 | 0.78 | -0.015 | 1.23 | -0.036* | 0.47 | -0.024 |
| Prob. of a specialist visit [b] | 62% | 0.030* | 37% | 0.051* | 35% | 0.008 | 55% | 0.060* | 55% | 0.066* |
| Nb. of specialist visits [b] | 0.76 | -0.005 | 0.5 | -0.037 | 0.59 | 0.039* | 0.84 | -0.001 | 0.39 | 0.016 |
| Prob. of hospitalisation [b] | 13% | 0.007 | 8% | -0.025 | 16% | 0.000 | 8% | 0.024* | 11% | -0.056* |
| Prob. of cervical screening [c] | 71% | 0.033* | 80% | 0.012 | 69% | 0.000 | 68% | 0.038* | 78% | 0.033* |
| Prob. breast screening [c] | 65% | 0.042* | 66% | 0.021 | 68% | 0.012* | 67% | 0.042* | 47% | 0.039* |
| Prob. colorectal screening [c] | 23% | -0.002 | 42% | 0.021* | 38% | -0.001 | 43% | 0.039* | 30% | 0.015* |
| Prob. of Flu vaccination [c] | 28% | 0.017* | 53% | 0.008 | 54% | -0.001 | 41% | -0.001 | 4% | 0.006* |
| Prob. of dentist visit [c] | 46% | 0.055* | 70% | 0.041* | 93% | 0.003 | 46% | 0.044* | 49% | 0.046* |
| **Unmet needs** | | | | | | | | | | |
| Forgone care due to cost [c] | 14% | -0.040* | 20% | -0.050* | 33% | -0.013* | 17% | -0.038* | 34% | -0.063* |
| Waiting time [c] | 13% | -0.011* | 29% | -0.010 | 24% | -0.005 | 30% | -0.022* | 24% | 0.002 |
| Distance [c] | 3% | -0.006* | 4% | -0.008* | 8% | -0.007 | 9% | -0.016* | 7% | -0.023* |

Note: Summary measures of inequality: a Slope index of inequality by education, b Concentration Index by income c Generalised Concentration Index by income. * the summary measure is significant. Explanations about data and methods can be found in the relevant chapters.
Source: Results in the report.

## Annex Table 1.A.5. Key results, country-by-country

| | Lithuania | | Luxembourg | | Malta | | Netherlands | | Norway | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality |
| **Risk factors** | | | | | | | | | | |
| Smoking, M [a] | 43% | 0.43* | 24% | 0.25* | 28% | 0.26* | 30% | 0.22* | 22% | 0.26* |
| Smoking F [a] | 13% | 0.13* | 18% | 0.23* | 22% | 0.19* | 22% | 0.21* | 20% | 0.26* |
| Overweight and Obesity, M [a] | 58% | 0.05 | 55% | 0.25* | 66% | 0.06 | 53% | 0.13* | 57% | 0.12* |
| Overweight and Obesity, F [a] | 53% | 0.19* | 39% | 0.39* | 55% | 0.13* | 45% | 0.21* | 40% | 0.15* |
| Heavy drinking, M [a] | 7% | 0.17* | 6% | 0.06* | 7% | -0.02 | - | - | 2% | 0.01 |
| Heavy drinking, F [a] | 1% | 0.06* | 4% | -0.11* | 2% | 0.00 | - | - | 2% | -0.03* |
| **Health** | | | | | | | | | | |
| Poor self-assessed health [a] | 52% | 0.28* | 30% | 0.41* | 17% | 0.26* | 23% | 0.20* | 21% | 0.23* |
| Limitations in daily activity [a] | 36% | 0.28* | 36% | 0.28* | 17% | 0.13* | 29% | 0.14* | 17% | 0.19* |
| 2+ chronic diseases [a] | 31% | 0.13* | 39% | 0.24* | 23% | 0.09* | 28% | 0.15* | 24% | 0.18* |
| **Access** | | | | | | | | | | |
| Prob. of a doctor visit [b] | 76% | 0.016* | 88% | 0.008 | 79% | 0.002 | 76% | 0.005 | 77% | 0.011* |
| Prob. of a GP visit [b] | 74% | 0.016* | 82% | 0.005 | 76% | -0.001 | 70% | 0.000 | 74% | 0.011* |
| Nb. of GP visits [b] | 0.66 | -0.018 | 0.7 | -0.023 | 0.64 | 0.003 | 0.59 | -0.010 | 0.47 | 0.017 |
| Prob. of a specialist visit [b] | 38% | 0.031* | 54% | 0.025* | 34% | 0.048* | 42% | 0.023* | 33% | 0.047* |
| Nb. of specialist visits [b] | 0.5 | -0.029 | 0.81 | 0.070* | 0.5 | -0.020 | 0.64 | 0.038* | 0.3 | 0.021 |
| Prob. of hospitalisation [b] | 13% | -0.036 | 11% | -0.065* | 8% | 0.024 | 8% | -0.005 | 9% | 0.006 |
| Prob. of cervical screening [c] | 62% | 0.029* | 84% | 0.027* | 64% | 0.034* | 49% | 0.013* | 66% | 0.056* |
| Prob. breast screening [c] | 46% | 0.020* | 81% | -0.007 | 58% | 0.044* | 80% | 0.013 | 76% | 0.026* |
| Prob. colorectal screening [c] | 28% | -0.002 | 57% | 0.018* | 27% | 0.005 | 23% | -0.003 | 31% | -0.008 |
| Prob. of Flu vaccination [c] | 5% | 0.001 | 47% | 0.006 | 53% | -0.015 | 73% | -0.019* | 24% | 0.006 |
| Prob. of dentist visit [c] | 47% | 0.023* | 79% | 0.017* | 56% | 0.041* | 79% | 0.037* | 78% | 0.030* |
| **Unmet needs** | | | | | | | | | | |
| Forgone care due to cost [c] | 9% | -0.021* | 16% | -0.043* | 7% | -0.019* | 5% | -0.022* | 6% | -0.020* |
| Waiting time [c] | 14% | -0.009* | 32% | -0.001 | 27% | -0.015* | 11% | -0.004 | 4% | -0.004* |
| Distance [c] | 4% | -0.009* | 3% | -0.012* | 2% | -0.004* | 2% | -0.005* | 1% | -0.002* |

Note: Summary measures of inequality: a Slope index of inequality by education, b Concentration Index by income c Generalised Concentration Index by income. * the summary measure is significant. Explanations about data and methods can be found in the relevant chapters.
Source: Results in the report.

## Annex Table 1.A.6. Key results, country-by-country

| | Poland | | Portugal | | Romania | | Slovak Republic | | Slovenia | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality |
| **Risk factors** | | | | | | | | | | |
| Smoking, M [a] | 34% | 0.29* | 28% | 0.20* | 41% | 0.07* | 39% | 0.32* | 29% | 0.23* |
| Smoking F [a] | 21% | 0.16* | 14% | -0.04* | 13% | -0.07* | 22% | 0.23* | 22% | 0.16* |
| Overweight and Obesity, M [a] | 64% | -0.07* | 57% | 0.07* | 63% | -0.03 | 62% | 0.09* | 65% | 0.02 |
| Overweight and Obesity, F [a] | 47% | 0.16* | 50% | 0.35* | 49% | 0.16* | 46% | 0.16* | 48% | 0.36* |
| Heavy drinking, M [a] | 5% | 0.02 | 11% | 0.22* | 12% | 0.12* | 2% | 0.08* | 4% | 0.07* |
| Heavy drinking, F [a] | 2% | -0.01 | 2% | 0.00 | 2% | 0.05* | 1% | 0.00 | 1% | 0.01 |
| **Health** | | | | | | | | | | |
| Poor self-assessed health [a] | 38% | 0.25* | 50% | 0.48* | 28% | 0.12* | 35% | 0.37* | 35% | 0.29* |
| Limitations in daily activity [a] | 23% | 0.15* | 32% | 0.23* | 16% | 0.07* | 40% | 0.25* | 38% | 0.15* |
| 2+ chronic diseases [a] | 35% | 0.05* | 43% | 0.23* | 18% | 0.00 | 30% | 0.21* | 41% | 0.10* |
| **Access** | | | | | | | | | | |
| Prob. of a doctor visit [b] | 82% | 0.032* | 84% | 0.023* | 46% | 0.068* | 75% | -0.003 | 72% | 0.019* |
| Prob. of a GP visit [b] | 77% | 0.032* | 75% | 0.002 | 45% | 0.068* | 69% | -0.008 | 66% | 0.019* |
| Nb. of GP visits [b] | 0.65 | -0.008 | 0.4 | -0.019* | 0.53 | 0.017* | 0.54 | 0.002 | 0.86 | -0.082* |
| Prob. of a specialist visit [b] | 56% | 0.075* | 48% | 0.105* | 17% | 0.109* | 44% | 0.012 | 43% | 0.064* |
| Nb. of specialist visits [b] | 0.64 | 0.028* | 0.45 | 0.048* | 0.31 | 0.048* | 0.63 | 0.035* | 0.77 | -0.027 |
| Prob. of a hospital visit [b] | 13% | 0.018 | 9% | -0.020 | 4% | 0.065* | 12% | 0.027 | 11% | -0.022 |
| Prob. of cervical screening [c] | 72% | 0.046* | 71% | 0.026* | 27% | 0.050* | 69% | 0.023* | 78% | 0.027* |
| Prob. breast screening [c] | 59% | 0.034* | 84% | 0.006 | 7% | 0.018* | 54% | 0.028* | 61% | 0.022* |
| Prob. colorectal screening [c] | 20% | 0.013* | 57% | 0.021* | 6% | 0.009* | 35% | 0.000 | 69% | 0.037* |
| Prob. of Flu vaccination [c] | 10% | 0.019* | 48% | -0.004 | 6% | 0.010* | 14% | 0.009 | 12% | 0.009 |
| Prob. of dentist visit [c] | 53% | 0.050* | 49% | 0.063* | 15% | 0.029* | 75% | 0.033* | 59% | 0.045* |
| **Unmet needs** | | | | | | | | | | |
| Forgone care due to cost [c] | 17% | -0.039* | 31% | -0.070* | 16% | -0.036* | 8% | -0.025* | 15% | -0.011* |
| Waiting time [c] | 26% | 0.012* | 26% | -0.019* | 3% | -0.003* | 6% | -0.005* | 21% | 0.007 |
| Distance [c] | 5% | -0.007* | 3% | -0.009* | 2% | -0.005* | 1% | -0.002 | 3% | -0.010* |

Note: Summary measures of inequality: a Slope index of inequality by education, b Concentration Index by income c Generalised Concentration Index by income. * the summary measure is significant. Explanations about data and methods can be found in the relevant chapters.
Source: Results in the report.

## Annex Table 1.A.7. Key results, country-by-country

| | Spain | | Sweden | | United Kingdom | | United States | |
|---|---|---|---|---|---|---|---|---|
| | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality | Level | Summary measure of inequality |
| **Risk factors** | | | | | | | | |
| Smoking, M [a] | 31% | 0.21* | 18% | 0.17* | 19% | 0.23* | 17% | 0.18* |
| Smoking F [a] | 21% | 0.06* | 16% | 0.22* | 16% | 0.21* | 12% | 0.14* |
| Overweight and Obesity, M [a] | 61% | 0.16* | 55% | 0.21* | 59% | 0.10* | 71% | 0.06* |
| Overweight and Obesity, F [a] | 45% | 0.38* | 44% | 0.21* | 51% | 0.19* | 60% | 0.24* |
| Heavy drinking, M [a] | 5% | 0.04* | 2% | 0.01 | 18% | 0.02 | | - |
| Heavy drinking, F [a] | 2% | -0.01 | 3% | -0.03 | 17% | -0.09* | | - |
| **Health** | | | | | | | | |
| Poor self-assessed health [a] | 29% | 0.27* | 25% | 0.16* | 24% | 0.26* | 43% | 0.35* |
| Limitations in daily activity [a] | 25% | 0.16* | 30% | 0.12* | 30% | 0.17* | 24% | 0.16* |
| 2+ chronic diseases [a] | 30% | 0.19* | 31% | 0.07* | 25% | 0.12* | 18% | 0.13* |
| **Access** | | | | | | | | |
| Prob. of a doctor visit [b] | 85% | 0.012* | 66% | 0.003 | 77% | 0.004 | 65% | 0.053* |
| Prob. of a GP visit [b] | 77% | -0.008* | 60% | -0.012 | 74% | 0.002 | - | - |
| Nb. of GP visits [b] | 0.5 | -0.032* | 1.68 | -0.020 | 0.59 | -0.044* | - | - |
| Prob. of a specialist visit [b] | 55% | 0.071* | 34% | 0.064* | 34% | 0.047* | - | - |
| Nb. of specialist visits [b] | 0.37 | 0.015 | 1.79 | -0.049* | 0.46 | 0.042* | - | - |
| Prob. of a hospital visit [b] | 8% | 0.025 | 9% | 0.012 | 9% | -0.011 | 7% | -0.064* |
| Prob. of cervical screening [c] | 69% | 0.050* | 81% | 0.053* | 63% | 0.023* | 80% | 0.016* |
| Prob. breast screening [c] | 80% | 0.032* | 91% | 0.015* | 59% | 0.021* | 80% | 0.035* |
| Prob. colorectal screening [c] | 26% | 0.028* | 25% | -0.025* | 49% | -0.012* | 63% | 0.042* |
| Prob. of Flu vaccination [c] | - | - | 38% | 0.008 | 79% | -0.004 | 72% | 0.018* |
| Prob. of dentist visit [c] | 47% | 0.046* | 71% | 0.013* | 74% | 0.032* | 41% | 0.069* |
| **Unmet needs** | | | | | | | | |
| Forgone care due to cost [c] | 16% | -0.061* | 15% | -0.021* | 6% | -0.010* | 5% | -0.013* |
| Waiting time [c] | 17% | -0.011* | 18% | -0.011* | 15% | -0.003 | - | - |
| Distance [c] | 2% | -0.002* | 2% | -0.007* | 2% | -0.004* | - | - |

Note: Summary measures of inequality: a Slope index of inequality by education, b Concentration Index by income c Generalised Concentration Index by income. * the summary measure is significant. Explanations about data and methods can be found in the relevant chapters.
Source: Results in the report.

## Notes

[1] Data extracted available on 18 October 2018 from http://www.oecdbetterlifeindex.org/responses/.

[2] These barriers can relate to language and cultural traits but also the experience of discrimination, racism and trauma (Matlin et al., 2018[22]). For example, in France, migrants are in poorer self-assessed health than the non-migrant population (Berchet and Jusot, 2012[25]). In Sweden refugees are significantly more likely to be in poor mental health than the non-refugees population (Hollander, 2013[23]). In Australia, the indigenous population has a shorter life-expectancy than the non-indigenous population, and they are at least twice as likely to rate their health as fair or poor (AIHW, 2018[26]).

[3] For synthetic reviews of the different approaches to measuring inequalities please see: Wagstaff, Paci et van Doorslaer (1991[20]), Regidor (2004[21]), and Kjellsson, Gerdtham and Petrie (Kjellsson, Gerdtham and Petrie, 2015[9])

[4] To ensure standardisation on the partial effect of the standardising variable only, the standardisation process controls for additional variables it may be correlated with (O'Donnell et al., 2008[5])

[5] Absolute measures of inequalities also possess the mirror property (Erreygers and Van Ourti, 2011[24]) by which the ranking of countries is the same if the variable under consideration is expressed as an achievement (percentage of non-smokers) or a shortfall (smoking prevalence), which is particularly important for bounded (binary) variables which are frequently used to present the information in this survey.

[6] The general principles underlying the groupings and sensitivity analyses are the following. For a given set of methodological assumptions, countries are ranked by increasing level of summary measure of inequalities for each indicator. Tests are carried out to assess how inequalities across indicators relates (for instance do countries with high inequalities in self-assessed health also have high inequalities in the number of chronic diseases), and the groupings based on these. As similar work is done using other summary measures, new groupings are elaborated and major discrepancies between groupings analysed for the countries concerned. The groupings are finalised in a way which ensures most consistency across different methods and assumptions.

[7] 60% of national median equivalised disposable income is considered as the poverty line threshold here.

[8] They position countries in relation to one another on each dimension separately rather than on an absolute scale.

[9] See for instance Kjellsson, Gerdtham and Petrie for a more detailed definition (2015[9])

[10] The nature of the data used in Chapter 5 "affordability and financial protection" did not lend itself to the elaboration of a summary measure of inequalities comparable for the range of countries covered.

# 2 Inequalities in health and its determinants

This chapter examines education-related inequalities in health status and its determinants across OECD and European countries. The chapter starts with the brief discussion on the links between health and employment to show that being in good health is instrumental in achieving good labour market outcomes. The chapter then analyses the extent to which exposure to behavioural risk factors (overweight, smoking and heavy drinking) differs across European and OECD countries and, within countries, across the social spectrum. Lastly, education-related health inequalities are investigated considering three health variables (self-assessed health status, limitations in daily activities and multiple chronic conditions), and patterns of health inequalities across European and OECD countries are analysed.

Note by Turkey:
The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

Note by all the European Union Member States of the OECD and the European Union:
The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

## 2.1. Introduction

Health is one of the main ingredients of a good life. Not only does a good health status improve economic standing through its impact on labour market outcomes, but it also affect individuals' well-being. However, not everyone has the same opportunity to lead a healthy life. Large differences in health exist between and within countries. Indeed, there is a large social gradient in health outcomes for which the odds are consistently stacked in favour of those better off (Marmot and Brunner, 2005[1]; Marmot et al., 1991[2]; Marmot and Wilkinson, 2006[3]). The least well-off and the least educated are, for example, less likely to be in good health and have a higher risk of dying prematurely than those who face more favourable socio-economic circumstances. A greater prevalence of risky health behaviour among people with a lower level of education contribute to poorer health outcomes and higher mortality rates. Less educated people are, for example, more likely to smoke and be overweight than their counterparts with higher levels of education (Cutler and Lleras-Muney, 2006[4]; OECD, 2016[5]).

This chapter examines education-related inequalities in health status and its determinants across OECD and European countries. It starts with a discussion of the links between health and employment, assessing the extent of the detrimental labour market impacts of ill health (2.2). Based on data from national health surveys, it then turns to an analysis of inequalities in behavioural risk factors including overweight, smoking and heavy drinking (2.3), and investigates education-related health inequalities considering three health variables (self-assessed health status, limitations in daily activities and multiple chronic conditions) (0). The chapter concludes by assessing whether some countries systematically display larger inequalities in health and its determinants (2.5).

## 2.2. Poor health outcomes are detrimental to labour market participation

Being in good health is instrumental in achieving good labour market outcomes. By reducing the individual's capacity to work long hours, a deteriorated health status decreases the chance of getting into employment and of being productive at work. As shown by a large body of evidence, illness and disability also increase the risk of job loss and early retirement and reduce the earning capacity (Orchard, 2015[6]; James, Devaux and Sassi, 2017[7]). Across Europe, for example, people who have at least two chronic diseases have a 30% reduced probability of being in employment than those without any chronic conditions (OECD, 2016[5]).

The lower labour force participation for people in poor health and their reduced productivity reinforce health inequalities within and between countries. Indeed, and as demonstrated by previous studies on social determinants of health (Marmot and Brunner, 2005[1]), the least well-off and the least educated are less likely to be in good health, and are more likely to be exposed to risk factors detrimental to their health (see Sections 2.3 and 0 respectively). This subsequently lowers their employment prospects, while at the same time unemployment worsens mental and physical health. This two-way causal relationship is well documented (see Box 2.1). Assessing the extent of the detrimental labour market impacts of ill health can encourage policy makers to take more decisive action seeking to break the vicious circle between ill health, risk factors and poor labour market outcomes.

## Box 2.1. The two-way causal relationship between health and employment

The relationship between health and employment runs not only from work to health, but also from health to work.

On one hand, the literature provides evidence that work impacts health. Employment (e.g. employment status, working hours) and working conditions (e.g. job decision latitude, job demand, and job strains) influence people's physical and mental health (James, Devaux and Sassi, 2017[7]).

On the other hand, several recent studies, based on longitudinal data, provide evidence of the impact of the health status on employment prospects (OECD, 2017[8]; Devaux and Sassi, 2013[9]; OECD, 2016[5]). Chronic diseases (such as cardiovascular diseases, respiratory problems, diabetes, and serious mental health conditions) as well as risk factors (smoking, obesity) have important labour market impacts in terms of reduced employment, earlier retirement, higher number of sick leave and lower income (as summarised in the table below).

Using longitudinal data, (OECD, 2016[5]) shows for example that the employment rate of people aged 50-59 who have one or more chronic diseases is lower than that of people who do not suffer from any disease. The same is true for people who are obese or smokers. In addition, people aged 50-59 suffering from severe depression are more than twice as likely to leave the labour market (OECD, 2016[5]). The table below provides a brief summary of some of the health effects on labour market outcomes.

### Summary of the impact of health on labour market outcomes

| | | Employment probability | Wages | Sick leave | Early retirement |
|---|---|---|---|---|---|
| Risk factors | Obesity | Negative effect | Negative effect | Positive effect | Mixed findings |
| | Smoking | Negative effect | Negative effect | Positive effect | Positive effect |
| | Harmful alcohol use | Mixed findings | Mixed findings | Mixed findings | Mixed findings |
| Chronic diseases | Cardiovascular diseases | Negative effect | Negative effect | Mixed findings | Mixed findings |
| | Diabetes | Negative effect | Negative effect | Positive effect | Mixed findings |

Source: Adapted from Devaux and Sassi (2015[10]).
More recently, the Preventing Ageing Unequally (OECD, 2017[8]) report, using longudinal data from European and other OECD countries, showed that inequalities in education, health, employment and earnings reinforce each other and evolve over the life course. Findings confirm that, at all ages, men and women in bad health work less and earn less when they work. Over the whole career, bad health reduces lifetime earnings by 33% and 17% for men with low and high levels of education, respectively (with smaller effects for women).

This section analyses the relationship between health and labour market outcomes and compares the magnitude of the association across European and OECD countries. It uses micro-level data from European and national surveys (Box 2.2 provides the main characteristics of the surveys used in the report). These surveys ask respondents to report their employment status and absenteeism linked to health problems, which provides a unique opportunity to explore the links between health and labour market outcomes across countries. This section explores the association between poor health and the probability of being in employment or absent using logistic estimations (Box 2.3). Table 2.1 describes the variables used in this chapter, in particular one which summarises the information on a person's health status by counting the number of deteriorated health indicators.

### Box 2.2. Surveys used in the report

**The European Health Interview Survey (EHIS-2)**

The European Health Interview Survey is coordinated by Statistical Office of the European Union (Eurostat). The second wave was conducted between 2013 and 2015 in all 28 EU Member States, Iceland and Norway. It is a general population survey that provides information on health status, health determinants, and health care activities in the European Union.

**The Canadian Community Health Survey (CCHS)**

The Canadian Community Health Survey is coordinated by Statistics Canada. This cross-sectional survey was conducted in 2015-16. It collects information related to health status, health care utilisation and health determinants for the Canadian population. The CCHS covers the population living in the ten provinces and the three territories.

**The Chilean National Socio-Economic Characterisation Survey (CASEN)**

The Chilean National Socioeconomic Characterisation Survey is managed by the Ministry of Social Development. The survey was conducted in 2017 to collect a range of information on education, employment, income and health status. The sample of CASEN is representative for the national population.

**The Medical Expenditure Panel Survey 2016 (MEPS)**

The Medical Expenditure Panel Survey is managed by the Agency for Healthcare Research and Quality. It is a set of large-scale surveys of families and individuals, their medical providers, and employers across the United States. MEPS is the most complete source of data on the cost and use of health care and health insurance coverage in the United States.

### *2.2.1. Everywhere, ill health is associated with low employment rates*

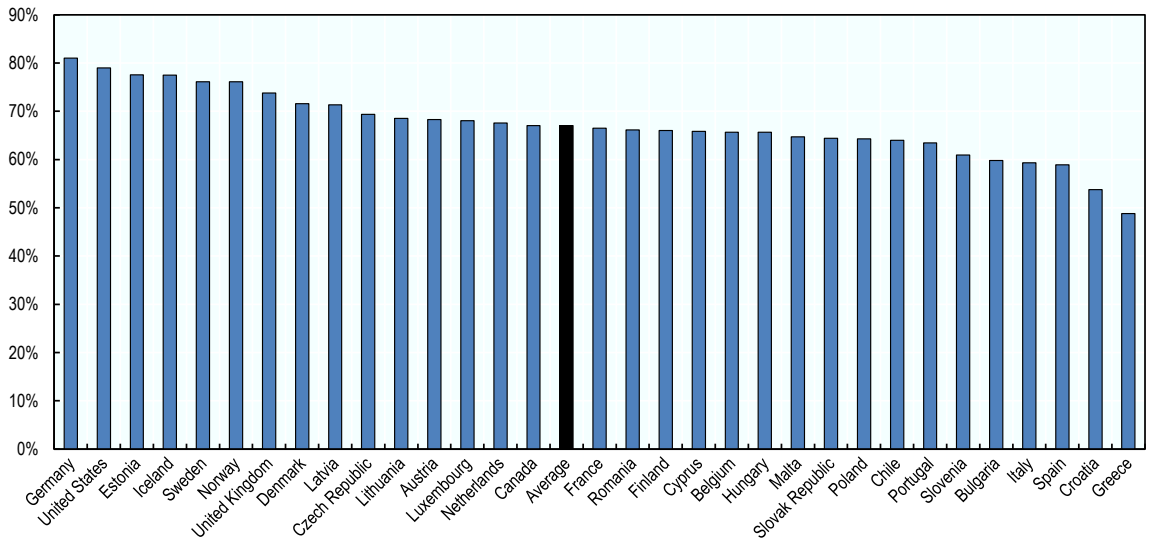
Employment rates measure the extent to which available labour resources (people available to work) are being used. Employment rates are sensitive to the economic cycle in a country, and are also affected by governments' higher education and income support policies. Cross-country differences in employment rates thus reflect structural differences in national labour markets. By way of context, Figure 2.1 presents the employment rates estimated in the different surveys used in the report. Greece and Croatia display the lowest employment rates (49% and 54% respectively), followed by some Southern and Central European Countries (Spain, Italy, Bulgaria, Slovenia, Portugal, Poland and the Slovak Republic) and Chile with employment rates between 59% and 64% of the working age population. Germany, the United Sates, Estonia, and some Nordic countries (Iceland, Norway and Sweden) are at the other end of the scale with rates above 75%. On average across European and OECD countries, 67% of the working age population is in employment.

## Table 2.1. Description of variables used in this section and coverage of the population

| | |
|---|---|
| Dependant variables | Self-declared labour status: dummy variable identifying individuals in employment. |
| | Self-declared absence from work due to health problems: dummy variable identifying, among the employed, those who have had at least one absence from work due to illness in the past 12 months. |
| Explanatory variables | Number of deteriorated health indicators: an ordinal variable based on four dummy variables identifying<br>(a) people reporting a poor self-assessed health status (very poor, poor and fair health),<br>(b) those reporting being "severely limited" and "limited" in daily activities,<br>(c) those who declare they have suffered from depression in the past 12 months<br>(d) people declaring two or more chronic conditions.<br>For EHIS, (c) and (d) are based on a list of 14 chronic variables people can declare they suffer from (see Eurostat (2013[11]).<br>The number of the deteriorated health indicators variable counts the number of dimensions according to which a person is deemed in poor health per these four dummy variables. If a person is deemed in poor health on any of the four dimensions the value will be 1, 2 if they are in poor health according to any combination of 2 poor health dummies. The maximum value is 4 and zero reflects the best possible health. The higher the number is, the worse the person's health is expected to be. In this section, unless otherwise indicated, people deemed "in poor health" have one or more deteriorated health indicators. |
| Control variables | Age, sex, household income, education, marital status, degree of urbanisation, and citizenship. |
| Country coverage and exclusions | United States, Canada, Chile, 28 EHIS countries covered. Ireland is excluded in both the employment and absenteeism models because of the poor quality of the employment status variable. Romania is excluded from the absenteeism model due to the poor quality of data on absence from work. |
| Population covered | The age was restricted to the working age population (people who are 18 and older and younger than 65). |

Source: Authors. The description of variables in this table refers to EHIS used for 28 of the 31 countries studied. Relevant descriptive statistics and additional explanations about variables used for other countries surveys are available in the annex of this chapter (Annex Table 2.A.1). In particular, for Chile the number of deteriorated health indicators is slightly underestimated due to the absence of questions on chronic diseases.

## Figure 2.1. Employment rates across European and OECD countries, 2014




Note: The working age population in European and National Survey refers to people aged 18-64. EHIS-based estimates of labour force participation of the working age population are very aligned with those of the European Labour Force Survey (ELFS).
Source: National health survey data.

### Box 2.3. Method – Logistic estimation

The predicted probability to be in employment (or to be absent from work among employed people) is estimated using a logit model.

The binary variable $y_i$, representing the probability to be employed over the past twelve months of the survey (or to be absent from work), is explained by the unobserved latent variable $y_i^*$ with :

$$\begin{cases} y_i = 1 \; if \; y_i^* > 0 \\ y_i = 0 \; if \; y_i^* \leq 0 \end{cases}$$

Where $y_i^* = \alpha_i + \beta_i Health + \mu_i X + \varepsilon_i$ [1]

The latent variable $y_i^*$ is made dependent on the respondent's health status ($Health$) and all other individuals' characteristics ($X$) which refer to control variables such as age, sex, household income, education, marital status, degree of urbanisation, and citizenship. $\alpha$, $\beta$ and $\mu$ are parameter vectors, and $\varepsilon$ an error term.

The multivariate analyses help isolate the impact of health, once other structural differences among population groups have been adjusted for. For poor and good health status, Equation [1] is used to generate predicted values of $y_i^*$. Estimations are produced for each country, while estimations for the average is a simple average of country specific estimations.

*People in poor health have a lower probability of being employed*

Across countries on average, and everything else being equal, the labour market participation rates of people who have no deteriorated health indicators and those with at least one differ by 8 percentage points (Figure 2.2). In this section, unless otherwise mentioned, the term "in poor health" will be used to describe those with at least one deteriorated health indicator. Box 2.4 highlights relevant results from analyses carried out using other specifications of the health variable.

In all countries, and as in previous studies (Orchard, 2015[6]; Knebelmann and Prinz, 2016[12]; OECD, 2016[5]), ill health translates into lower employment, but the scale of the problem varies considerably across countries (Figure 2.2). Romania, Norway and Bulgaria stand out as countries where the difference in labour market participation between those is good and poor health is much larger than on average (19, 16, and 14 percentage points, respectively). However, in these countries, the proportion of the population in poor health is relatively small (20%, 33% and 29%, respectively).

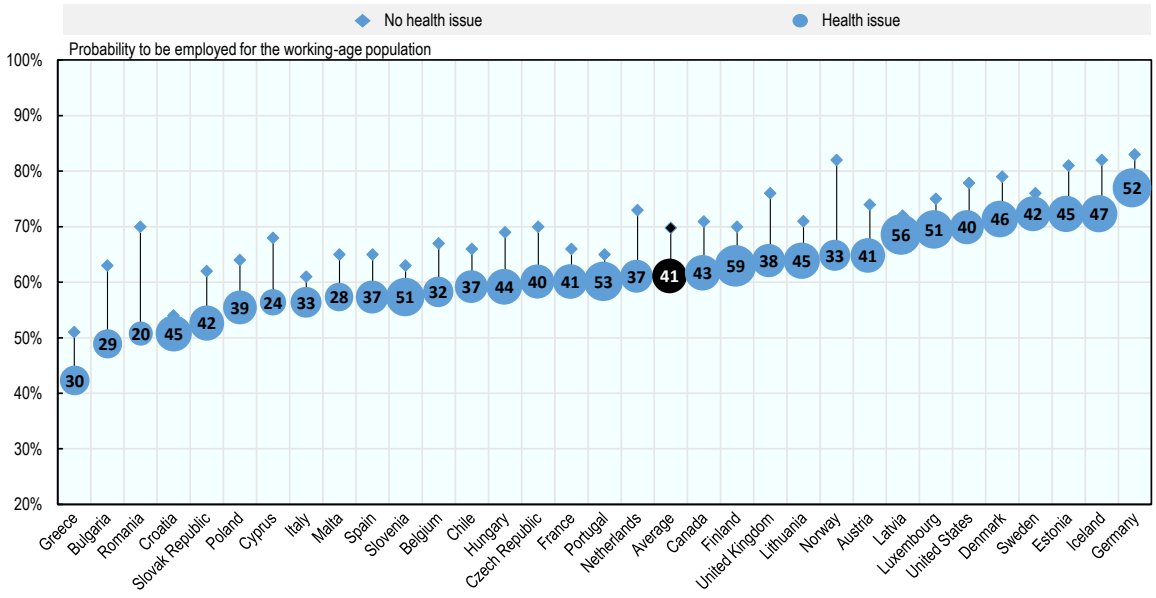
Portugal, Finland and Latvia present an opposite pattern, where the share of the population in poor health is comparatively high (53%, 59% and 56%, respectively) but the gap in employment rates between those in good and poor health relatively small (4, 6 and 2 percentage points).

Sweden and Germany stand out as well-performing countries where despite fairly high proportions of the population in poor health (42% in Sweden, and 52% in Germany), the gap in employment rates between those in poor and good health is small and the overall employment rate of the population is high.

Differences in labour market participation rates between people in good and bad health relate to country-specific labour market and health policies. General and specific activation labour market policies can for example facilitate access to paid work for people in poor health. In Sweden, active labour policies and employment protection are found to increase the opportunities for people with chronic illness to remain in work (Burström et al., 2005[13]). Policies encouraging employers to remove physical barriers to work, providing equal training opportunities for people in poor health, providing flexible work arrangements, or reinforcing employment protection regulations might also reduce differences in labour market participation rates between people in good and poor health. At the same time, public health policies designed to better

prevent and manage chronic conditions at work can also make the workforce healthier and more productive, reducing differences in labour market participation. In Belgium, for example, prevention advisers give guidance to workplaces on psychological well-being and support the preparation of risk assessment plans to reduce stress and improve working conditions (OECD/EU, 2018[14]). Such actions support workers experiencing mental ill health to stay in work and maximise opportunities and fulfilment for employees.

## Figure 2.2. Probability of being in employment among the working-age population, by health status, European and OECD countries




Note: Data from 29 European countries, Canada, Chile and the United States. Results correspond to predicted probabilities estimated with logit models (all else being equal) (see Box 2.3). The dots refer to the probability of being in employment by health status. The size of the lower dot reflects the proportion of people in poor health in the working-age population (slightly underestimated for Chile). The difference in the probability of being employed between people in good and poor health is significant at the 95% confidence level in all countries except Croatia, Latvia, Luxembourg and Sweden.
Source: OECD estimates based on national health survey data.

### *In the absence of ill health, labour market participation could increase by 3 percentage points*

Across European and OECD countries, the labour market participation rates could increase by 3 percentage points in the absence of ill health. This estimate, which does not factor in labour market dynamics, is simply computed as the difference between the estimated employment rate if everyone was in good health and the actual employment rate. Figure 2.3 shows that the impact of poor health on labour market participation is smallest in Sweden, Latvia, Italy and Croatia (with an impact of around 1 percentage point) and greatest in Chile and Norway. In these countries, labour market participation rates could increase by around 5 percentage points if everyone was in good health.

### Box 2.4. Using and combining different health variables

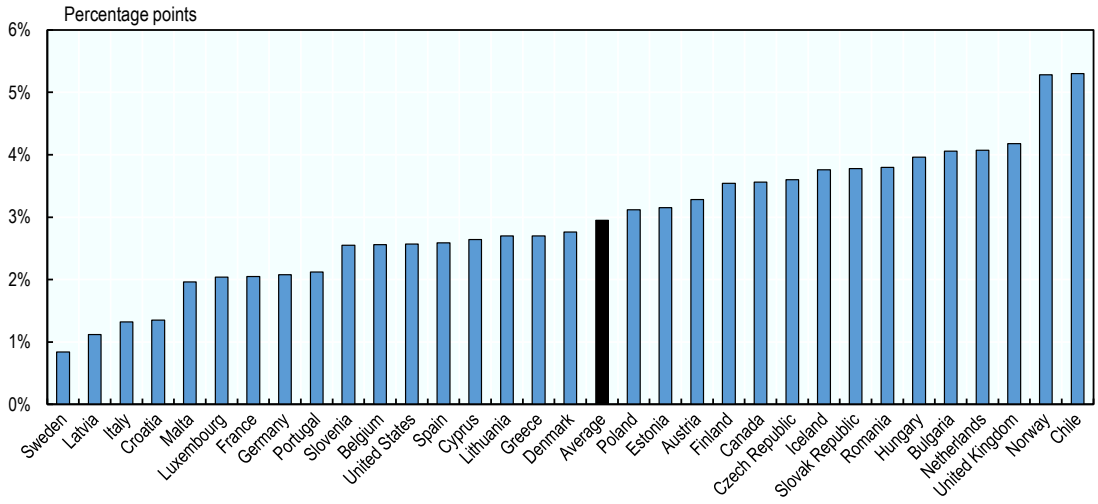
European and national health surveys used in the report contain several self-reported health status indicators (self-assessed health status, limitations in daily activities, multi-morbidity, and depression).

All the analyses were conducted separately on each health indicator, leading to similar results:

- The labour market participation rates of people in good and bad self-assessed-health differ by 12 percentage points. While people aged between 18-64 in good health have a 70% chance of being employed, the predicted probability for those in poor health is only 58%.
- People suffering from depression also have a considerable lower chance of being employed: the labour market participation rate of people with depression is 15 percentage points lower than for those who do not suffer from this condition.

The four health variables reflect different dimensions of health which may be cumulated by individuals or not. To reduce the impact of cultural bias of self-reported data (notably for the self-assessed health status) and to capture the diversity of health issues individuals might face, a variable reflecting the number of deteriorated health indicators was created (Table 2.1). A person's probability of being employed decreases as the number of deteriorated health indicators they face increases. Across countries, 70% of those who face no health problem are predicted to be employed, versus 68% of people with one deteriorated indicator of health. People with two deteriorated indicators of health are 8 percentage points less likely to work than people who face no health problem. Only 54% of the people with three deteriorated indicators of health are employed versus 43% of the people with the worse health (having four deteriorated health indicators).

### Figure 2.3. Impact of poor health on labour market participation, European and OECD countries




Note: Data from 29 European countries, Canada, Chile and the United States. The impact of poor health on labour market participation is the difference between the estimated employment rate if everyone was in good health (people have none of the four health issues) and the actual weighted employment rate.
Source: OECD estimates based on national health survey data.

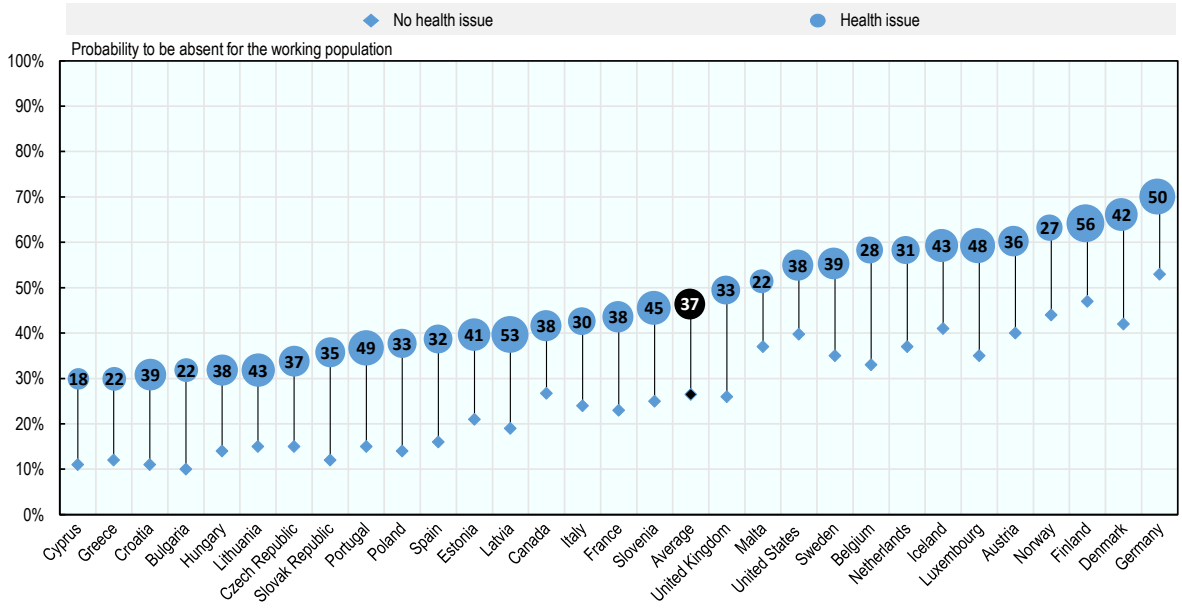
### *2.2.2. Absenteeism is significantly higher among those with higher numbers of deteriorated health indicators*

When they have a job, people in poor health are less productive at work. A simple and intuitive way to assess the loss of productivity related to illness is to contrast the rates of absenteeism among people in good and bad health everything else being equal using logistic regressions[1].

Across countries, 34% of workers declare having missed work in the past year due to illness. The proportion of the working population declaring at least one absence from work due to illness varies across countries: from nearly one in two in Nordic countries (Finland, Denmark, Norway and Iceland) and Germany to less than one in five in Cyprus, Bulgaria, Greece and Croatia.

The probability to be absent from work differs considerably with a person's health status. Nearly half of those in poor health are likely to be absent from work at least once in the year (47%) versus 26% of those who face no health problem (Figure 2.4). The gap in leave-taking behaviour between those in good and poor health also varies across countries. The gap is relatively small in Germany, the United States, Finland, Iceland and Norway (where taking time from work because of illness is very common) as well as Malta, Canada, Hungary, Lithuania and Estonia (where it is not). Countries where this gap is most marked include Spain, Poland, the Slovak Republic, the United Kingdom, Luxembourg, Denmark, and Belgium. Here, the differences in the probability of being absent from work between people with at least one health issue and those with no health issue is 23 percentage points or more.

**Figure 2.4. Probability to be absent from work among employed people by health status, European and OECD countries**



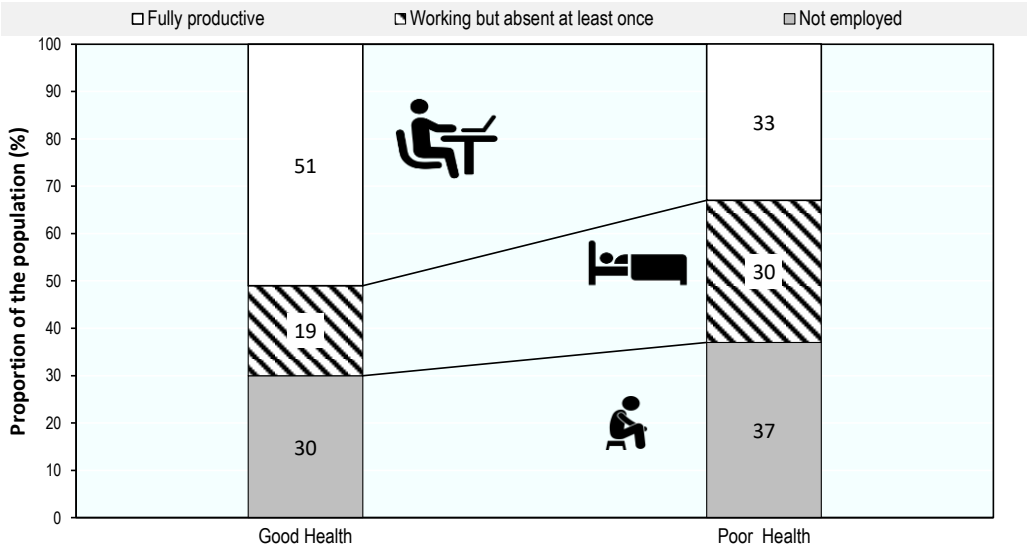

Note: Data from 28 European countries, Canada and the United States. Results correspond to predicted probabilities estimated with logit models (all else being equal) (see Box 2.3). The dots refer to the probability of being absent from work by health status, while the size of the upper dot refers to the proportion of the working population in poor health (slightly underestimated for Chile). Difference between those in good health and bad health is significant at the 95% confidence level for all countries.
Source: OECD estimates based on national health survey data.

### *2.2.3. The chance of being fully productive is higher among people in good health than among those in poor health*

A somewhat simplistic but intuitive postulate is to deem that people fulfil their productive potential if they are employed and, in that case, if they do not take time off work due to illness during the year. Based on the previous analysis, the probability of being fully productive among people in good health and in poor health can be estimated by combining the likelihood of being employed with that of being absent from work.

By this metric, results show that people in good health have a greater chance of being fully productive than people in poor health. On average, around half of the people in good health reach their full productive potential across European and OECD countries (51%). By contrast, only 33% of people with at least one deteriorated health indicator in poor health are fully productive (Figure 2.5).

**Figure 2.5. Labour market outcomes of the working-age population in good and poor health, European and OECD countries**



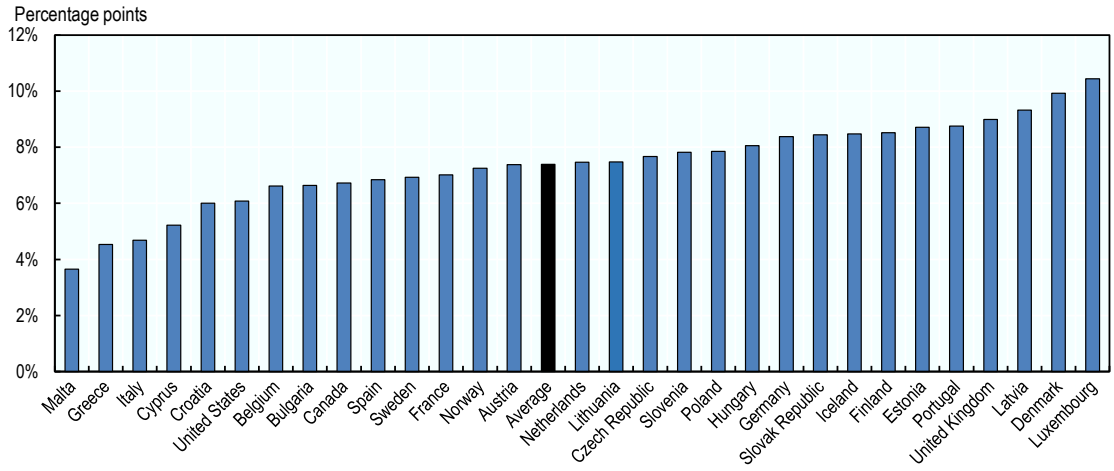

Note: Data from 28 European countries, Canada and the United States. Working but absent includes employed people who said they were absent from work at least once in the previous year for a health reason.
Source: OECD estimates based on national health survey data.

This information can also be used to assess and compare the magnitude of the impact of ill health on the labour market across countries. For each country, following the same line of argument, the burden of ill health corresponds to the gap between the proportion of the population which would be fully productive if everyone was in good health (or if people in poor health were as engaged in the labour market as those in good health) and the actual proportion of the population fully productive. Figure 2.6 compares the potential increase in fully productive population under this assumption across countries[2].

On average across European and OECD countries, an additional 7.4 percentage points of the working age population could be fully productive. Overall, countries with the lowest burden of ill health are Malta, Greece, Italy and Cyprus. In these countries, the fully productive active population could increase by 5 percentage points (or less) in the absence of ill health. At the other end of the scale, in Luxembourg, Denmark, Latvia and the United Kingdom the fully productive active population could potentially grow by 9 percentage points or more. In most of these countries, the share of the working age population in poor health is above average.

Country-specific labour market policies (such as activation labour market policies, or the scope of compensated sick leave and the generosity of the benefit schemes) and health policies (such as public health actions to support workers experiencing chronic ill health stay in work) contribute to explaining these cross-country differences. The present analysis could serve as a starting point to identify which sets of policies overall help sustaining a more healthy and productive active population.

### Figure 2.6. Increase in fully productive active population, European and OECD countries




Note: Data from 28 European countries, Canada and the United States. The ranking of countries is based on the increase (in percentage points) in the proportion of fully productive people if everyone was in good health. This estimate is simply computed as the difference between the estimated proportion of people working and not being absent from work if everyone was in good health and the actual proportion of people working and not being absent from work (from the survey).
Source: OECD estimates based on national health survey data.

Caution should, however, be exerted in the interpretation of these results as a high labour market participation of people in poor health is not an end objective per se. Presenteeism, which describes the situation when workers go to work while sick and unable to work effectively due to their illness, is also an important challenge across European and OECD countries. According to the European Working Condition Survey (EWCS), 42.5% of employees in the EU reported that they worked while being sick in 2015. Presenteeism is undesirable for employers and employees alike: it is associated with lower productivity, and has long-term effects on future health. Skagen and Collins (2016[16]) found that presenteeism increased the risk for future sickness absence and decreased self-rated health (Skagen and Collins, 2016[15]). Over the long term, presenteeism can result in increased welfare payments for disability and sick leave. According to the European Agency for Safety and Health at Work, presenteeism costs organisations more than sickness absence.

## 2.3. Behavioural risk factors are unequally distributed across socio-economic groups

Environmental factors (for example exposure to pollution, poor working and living conditions, violence), behavioural and lifestyle factors (exercise, diet, smoking, and alcohol consumption) and a broad range of socio-economic factors (income, education, social status and networks, gender, etc.) each can have a direct impact on a person's health status. For instance, smoking and lack of physical exercise directly affect the risk of illness or death, as do poor working and living conditions (Marmot and Wilkinson, 2006[3]).

Outdoor air pollution, for example, can cause respiratory diseases, lung cancer, and cardio-vascular diseases (OECD, 2017[16]).

Importantly, the degree of exposure of an individual to many of these determinants is strongly correlated with − and shaped by − social circumstances. Difficult material circumstances often results in poor living conditions and limits the ability to pay for healthy food and other health-enhancing goods and services. Less educated people are more likely to have a poor working environment, with high exposure to physical pain and mental health risk factors (Siegrist, Montano and Hoven, 2014[17]). They are also less informed about the health impacts of their behavioural factors or able to act upon this information. Related to this, they are more likely to smoke and be overweight than their counterparts with higher levels of education (Cutler and Lleras-Muney, 2006[4]; OECD, 2016[5]). In sum, many determinants are unequally distributed along the social spectrum, reinforce each other, and increase the disadvantages and vulnerability of the less well-off (CSDH, 2008[18]).

Among health determinants, lifestyle plays an important role in explaining population health. For example, while at population-level around half of the decline in mortality by cardiovascular diseases in the United Kingdom between 2000 and 2007 can be attributed to improvement in treatment, the reduction in risk factors accounts for an additional third of the mortality decline and it is much more important in explaining improvements among the lower income groups (Bajekal et al., 2012[19]).

## Table 2.2. Data used to analyse behavioural risk factors

| | Description of variables and coverage on the basis of EHIS-2 |
|---|---|
| Dependent variables | Smoking status: dummy variable identifying daily and occasional smokers versus non-smoker. |
| | Obese and overweight: dummy variable identifying respondents with BMI>= 25 versus those with BMI < 25. BMI is calculated based on self-declared height and weight. |
| | Alcohol consumption: dummy variable identifying people with heavy drinking behaviour versus those having light and moderate drinking behaviour. Women are heavy drinkers if they consume on one day more than 20 grams of alcohol. Men are heavy drinkers if they drink on one day more 40 grams. |
| Explanatory variables | Education is a categorical variable reflecting three different levels of education: 1. less than primary, primary and lower secondary level (ISCED 0-2); 2. upper secondary and post-secondary non-tertiary level (ISCED 3-4); 3. tertiary level (ISCED 5-8). |
| Standardisation for | Age |
| Country coverage and exclusions | United States, Canada and 30 EHIS countries.<br>For France, the Netherlands, Italy and the United States data on alcohol consumption is not available.<br>No data on risk factors in the Chile survey. |
| Covered population | The population aged 18 years and above. |

*Note*: The description of variables in this table refers to EHIS used for 30 of the 32 countries studied. Relevant descriptive statistics and additional explanations about variables used for other countries surveys are available in the annex of this chapter (Annex Table 2.A.3).

Using an approach generally privileged by public health specialists, this section presents new evidence on the distribution of behavioural risk factors along the socio-economic spectrum. To summarise the methodological approach:

- Table 2.2 presents the variables used in this section.
- Education level is used to identify social groups with increased risk of smoking, overweight, and heavy drinking, and it will also be the marker used for health inequalities (Section 0). Education has the advantage of being stable beyond early adulthood and it is less likely to be influenced by disease or other shocks than income. In addition, the level of education is a good predictor of the behavioural risk factors under consideration as well as health outcomes. Finally it is well correlated with other social determinants of behavioural risk factor and health including better jobs and working conditions – and income (Shavers, 2007[20]; Devaux and Sassi, 2013[9]).

- As the prevalence, distribution and relationship with socio-economic status of various behavioural risk factors differ considerably across gender, analyses are thus undertaken separately for men and women.
- Inequalities are described by contrasting the indirectly age-standardised probabilities of the high and low education groups (for an explanation see Box 1.2 in the first chapter of the report)[3]. The summary measures used to capture and compare inequalities at population level are the slope index of inequalities (SII) and relative index of inequalities RII (Box 2.5). Given the general emphasis of this report on absolute inequalities, SIIs are presented and discussed in the body of the chapter and RIIs can be found in the Annex tables at the end of the chapter.

### Box 2.5. The Slope Index of Inequality and the Relative Index of Inequality

To assess the magnitude of health-related inequalities in countries, slope index of inequalities (SII) and relative indexes of inequality (RII) are calculated. SIIs and RIIs are summary measures of inequalities often favoured by public health specialists and epidemiologists for a number of reasons.

- First, compared with simple ratios or differences between the advantaged and disadvantaged socio-economic groups in the variable of interest (e.g. smoking, being in poor health), RIIs and SIIs take into account both the relative size of the groups obtaining a given level of education in a country and the association between the variable of interest and education for each education group. SIIs and RIIs are based on logistic regression estimates of the variable of interest for every education group adjusted for age and sex. In essence, SIIs measure the difference between the estimated values of the variable of interest of the person with the lowest and highest education level in the population (for a more detailed description see WHO (2017[21]). The relative index of inequalities is then the ratio between the rate for the least educated person and the rate for the most educated person.
- Second, the interpretation of RIIs and SIIs is quite straightforward and somewhat easier than for other measures of socio-economic inequalities (including for example the concentration index). If there is no inequality, SII takes the value zero. Greater absolute values indicate higher levels of inequality (positive values indicate a higher concentration of the indicator among the disadvantaged and negative values indicate a higher concentration of the indicator among the advantaged). The interpretation of RIIs is similar to the relative risk. A large score on the RII implies large health differences between the highest and lowest education groups. For example, an RII of 1.5 implies that the least educated people are 50% more likely to assess their health as poor than the most educated people.

Source and more details: Schneider (2005[22]) and WHO (2017[21]).

### *2.3.1. Poor health behaviour is more prevalent among the disadvantaged*

This section reviews in turn inequalities in overweight and obesity, in smoking and heavy alcohol consumption.

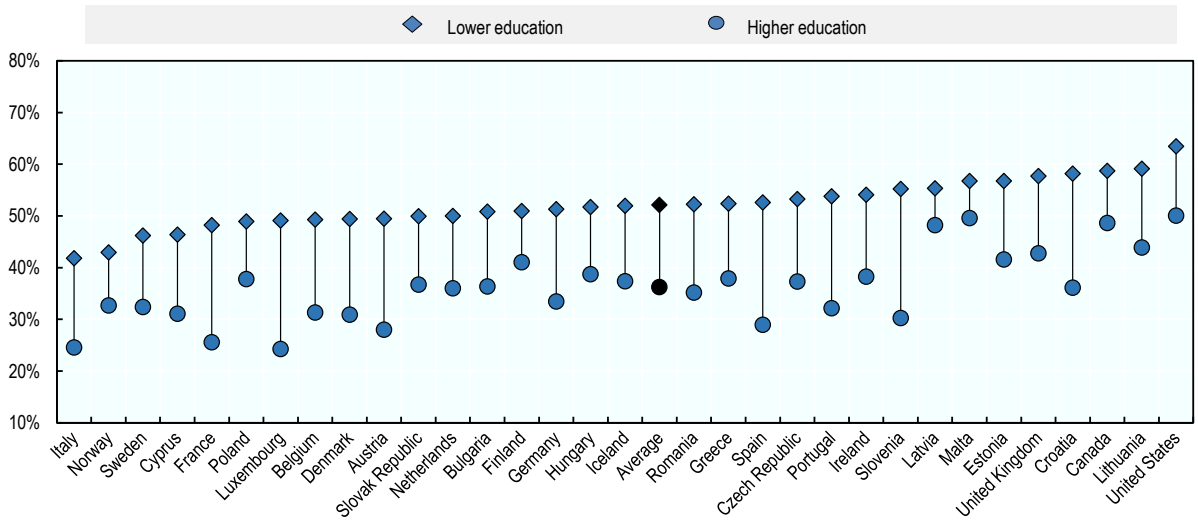
*Everywhere, the least educated women are more likely to be overweight*

Overweight and obesity, which are known risk factors for numerous health problems (including for example hypertension, diabetes, cardiovascular diseases and some forms of cancer) has increased in many European and OECD countries over the past decades (OECD, 2017[23]; OECD/EU, 2018[14]). The prevalence of overweight and obesity is generally higher among men than women. On average across countries, 60% of men were overweight compared to 47% of women. Among men, the prevalence varies from 53% in France, Italy and the Netherlands to more than 67% in Croatia and the United States (see Annex Table 2.A.3). Among women, the prevalence ranges between less than 40% in Italy, Cyprus, and Luxembourg and 55% or more in the United States and Malta.

In all countries, the most educated women are less likely to be overweight than the least educated (Figure 2.7). On average across all countries, 52% of women with less than a high school degree are overweight or obese compared to 36% of those with tertiary education. Slovenia, Luxembourg, Spain, France, Croatia, Portugal, and Austria display the largest gap, with differences of more than 20 percentage points. In Latvia, Malta, Finland, Canada and Norway these gaps are relatively small (10 percentage points or less).

Taking into account the entire distribution of education levels of the female population, the overall gradient of inequality is significant in all countries. Absolute education-related inequalities to the detriment of the least educated women are highest in Luxembourg, Spain and Slovenia. The lowest inequalities can be observed in Latvia, Malta and Canada (Table 2.3).

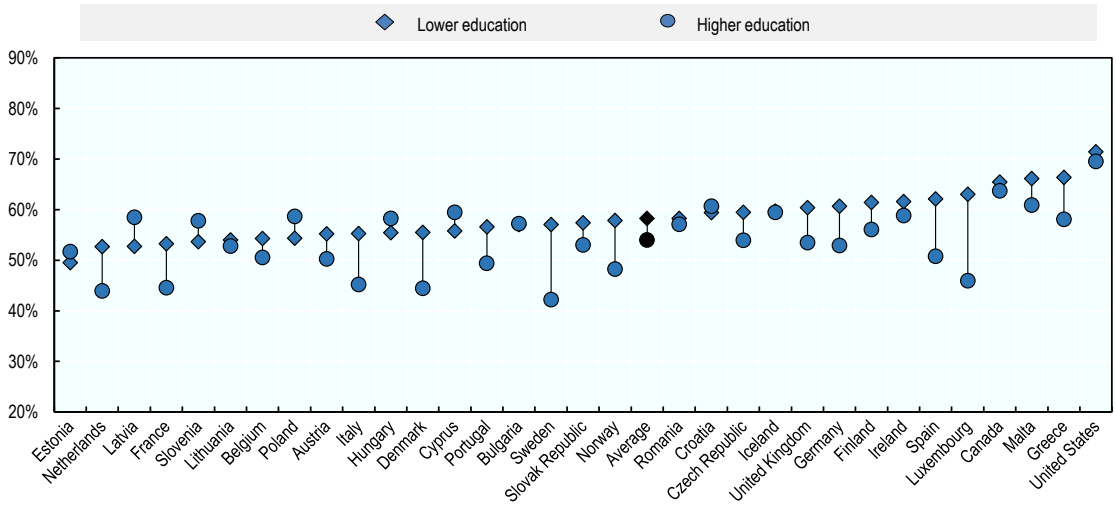
**Figure 2.7. Age-standardised probability to be overweight by education level, women**




Note: Data from 30 European countries, Canada and the United States. Results correspond to the age-standardised probabilities estimated with logit models. Difference between education groups is significant at the 95% confidence level for all countries, except Malta.
Source: OECD estimates based on national health survey data.

The differences in the probability of being overweight between education groups are smaller for men than for women (Figure 2.8). On average across European and OECD countries, the probabilities of being overweight display inequalities to the detriment of the least educated men: 58% of men with the lowest level of education are overweight or obese compared to 54% of those with the highest level. The largest gaps between education levels are found in Luxembourg, Sweden, Spain and Denmark with differences of more than 10 percentage points. In the United States, Canada, Lithuania, Romania, Iceland and Bulgaria, this gap is smaller (less than 2 percentage points). In Latvia, Poland, Slovenia, Cyprus, Hungary, Estonia and Croatia men with the highest level of education have a higher risk of being overweight than those with the lowest level of education.

## Figure 2.8. Age-standardised probability to be overweight by education level, men




Note: Data from 30 European countries, Canada and the United States. Results correspond to the age-standardised probabilities estimated with logit models. Difference between education groups is significant at the 95% confidence level for Denmark, France, Germany, Greece, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, the United Kingdom and Canada.
Source: OECD estimates based on national health survey data.

Computed over the whole population, inequalities to the disadvantage of the least educated men are smaller than those for women, but not significant in 13 out of 32 countries. Absolute education related-inequalities are highest in Luxembourg, Denmark and Sweden (Table 2.3). Canada and the United States, display the smallest absolute education-related inequalities, followed by Portugal and Finland. In Poland, the gradient is reverse: the likelihood of being overweight and obese rises with educational attainment.

Interestingly, Luxembourg, France, Spain, Italy and Denmark are high inequality countries to the detriment of the least educated people among both men and women.

### Table 2.3. Absolute education-related inequality in overweight, women and men

| | …decreases when education decreases | …does not differ across education groups | …increases when education decreases |
|---|---|---|---|
| Women – The probability of being overweight… | - | - | LVA, MLT, CAN, NOR, FIN, POL, SVK, ROU, BGR, HUN, LTU, GBR, EST, CZE, CYP, ISL, NLD, SWE, DEU, IRL, HRV, USA, DNK, ITA, GRC, AUT, BEL, PRT, FRA, SVN, ESP, LUX |
| Men – The probability of being overweight… | POL | BGR, CYP, CZE, EST, HRV, HUN, IRL, ISL, LTU, LVA, MLT, ROU, SVN | CAN, USA, PRT, FIN, BEL, SVK, GBR, NOR, AUT, GRC, DEU, FRA, ITA, NLD, ESP, SWE, DNK, LUX |

Note: Within each cell, countries are ranked from lowest to highest degree of inequality using the SII.
Source: OECD estimates based on national health survey data.

Overall, the results found here are generally aligned with (Devaux and Sassi, 2013[9]), which, across 11 OECD countries, found larger education-related inequalities in overweight in women than in men. Within Europe, their study showed that the largest inequalities existed in France, Sweden and Austria among men and in Spain, Italy and France among women. These countries are ranked similarly in Table 2.3.

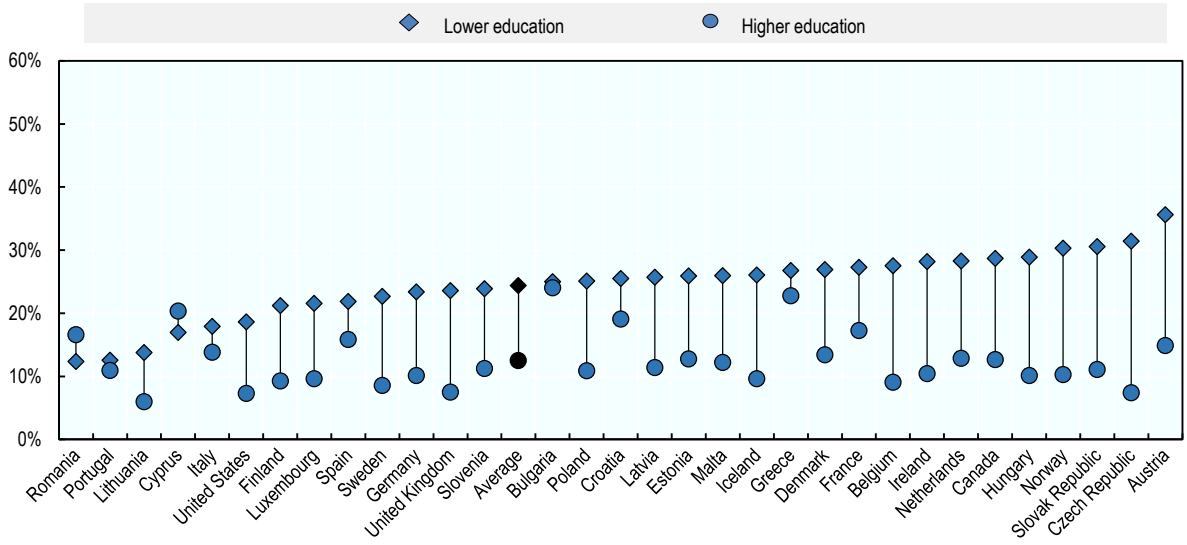
Gender differences in education-related inequalities in overweight might relate to the fact that highly educated women are more concerned about weight control than men with the same level of education, notably because obesity has more adverse impact on labour market outcomes among women than men. Other possible explanations relate to the pattern of physical activity, where low-paid job for women are less physically demanding than those taken up by men (Devaux and Sassi, 2013[9]).

*In most EU and OECD countries, the people with the lowest level of education are more likely to smoke*

Tobacco consumption, which is the largest avoidable health risk in OECD countries, has been decreasing over the past decade from 23% in 2006 to 18% in 2017 (OECD Health Statistics 2019). Sill, tobacco consumption is a major public health issue worldwide. In European and OECD countries, men smoke more than women. In total, nearly one in three men were daily or occasional smokers compared to one in five women (see Annex Table 2.A.4). Among men, smoking rates vary from more than 40% in Romania, Greece, Lithuania, Latvia, Cyprus, and Bulgaria to 23% (or less) in Northern European countries (Sweden, Iceland, Norway, Finland, Denmark, and the United Kingdom) as well as Canada and the United States. Among women, the prevalence is highest in Croatia, Austria, Greece, and Bulgaria (above 25%). Smoking rates are comparably low in the United States, Portugal, Lithuania, and Romania (below 15%).

Practically everywhere across European and OECD countries, men and women of low education are more likely to smoke than the ones with higher education (Figure 2.9 and Figure 2.10). On average, 24% of the least educated women smoke compared to 12% of the most educated women (Figure 2.9). The gaps in smoking rates are the largest in the Czech Republic, Austria, Norway, the Slovak Republic, Hungary, Belgium and Ireland with differences of more than 17 percentage points. By contrast, these gaps are smaller than 5 percentage points in Bulgaria, Portugal, Greece, and Italy. Only Romania and Cyprus display a reverse pattern: Here, the most educated women are more likely to smoke than the least educated.

## Figure 2.9. Age-standardised probability of smoking by education level, women



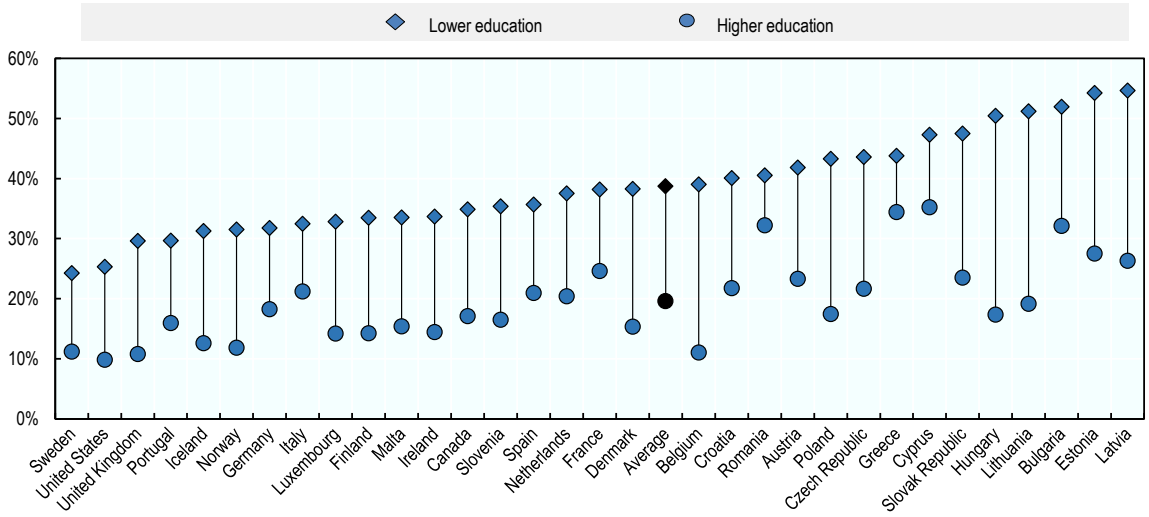

Note: Data from 30 European countries, Canada and the United States. Results correspond to age-standardised probabilities estimated with logit models. Difference between education groups is significant at the 95% confidence level for all countries except Bulgaria, Cyprus, Greece and Portugal.
Source: OECD estimates based on national health survey data.

When the entire population is taken into account, inequalities in smoking among women are to the detriment of the least educated in a majority of countries. The overall gradient of education-related inequality in smoking, measured with the slope index of inequality that takes into account the full distribution across education groups, is significant, to the detriment of the least educated women, in 26 out of 32 countries. Inequalities are comparably large in Hungary and Ireland (Table 2.4). They are relatively small in Italy, Spain, Lithuania, France and the United States. In three countries (Romania, Portugal, and Cyprus), the gradient is reverse and significant. In other words, as education increases overall, so does the likelihood to smoke.

Social disparities in smoking are larger among men and more clearly play in favour of the most educated (Figure 2.10). On average across all countries, 39% of the least educated men smoke compared to 20% of the most educated men. The largest gaps are found in Hungary, Lithuania, Latvia, Belgium, Estonia, Poland and the Slovak Republic, with differences of more than 23 percentage points between the least and the most educated men. The smallest gaps can be observed in Romania, Greece and Italy with differences of less than 12 percentage points.

The overall gradient of absolute education-related inequality in smoking is significant in all countries. It shows a higher degree of inequalities in Lithuania, Hungary and Latvia, whereas inequalities are smaller in Romania, Greece, Italy, Sweden, France, Germany, and the United States (Table 2.4).

## Figure 2.10. Age-standardised probability of smoking by education level, men




Note: Data from 30 European countries, Canada and the United States. Results correspond to the age-standardised probabilities estimated with logit models. Difference between education groups is significant at the 95% confidence level for all countries and the average.
Source: OECD estimates based on national health survey data.

## Table 2.4. Absolute education-related inequality in smoking

| | …decreases when education decreases | …does not differ across education groups | …increases when education decreases |
|---|---|---|---|
| Women – The probability of smoking… | PRT, ROU, CYP | BGR, GRC, HRV | ITA, ESP, LTU, FRA, USA, SVN, DNK, POL, MLT, EST, LVA, DEU, CZE, FIN, GBR, NLD, CAN, SWE, AUT, LUX, SVK, ISL, BEL, NOR, IRL, HUN |
| Men – The probability of smoking… | - | - | ROU, GRC, ITA, SWE, FRA, DEU, USA, CYP, HRV, PRT, ESP, CAN, NLD, SVN, FIN, GBR, DNK, ISL, BGR, AUT, LUX, MLT, NOR, CZE, IRL, POL, SVK, EST, BEL, LVA, HUN, LTU |

Note: Within each cell, countries are ranked from lowest to highest degree of inequality using the SII.
Source: OECD estimates based on national health survey data.

Cross-country variation in the risk of smoking by education level has been explored in previous research. Huijts et al., 2017[25] show among a pool sample of men and women that the risk of being a daily smoker is higher when respondents' level of education is lower in each country. Large education-related inequalities in smoking in favour of the most educated people have been found in Northern European countries, while a reverse gradient could be observed for Southern European countries (Huisman, Kunst and Mackenbach, 2005[24]). Less recently, Schaap (2010[25]) showed that socio-economic inequalities in smoking were larger in Northern and Eastern European countries (Schaap, 2010[25]).

The results described in this chapter are generally in line with these studies showing that some Northern European countries (Ireland, and Norway) and Central and Eastern European countries (Hungary, the Slovak Republic, and Estonia) are high inequality countries in smoking to the detriment of the least educated people. Results also support a reverse gradient among women in some Southern European countries (including Portugal, and Cyprus).

While tobacco consumption is an addictive behaviour, differences in health literacy may also partly explain why people of lower education smoke more often than others. The least educated are less informed about the risks of smoking and are less able to act upon this information. People with low education have significantly higher initiation rates and are less likely to stop smoking than people with higher levels of education (OECD, 2017[16]). In addition, education may provide the necessary resources (both cultural and psychosocial) to cope with adverse personal events in a more healthy way than through smoking (Huisman, Kunst and Mackenbach, 2005[24]).

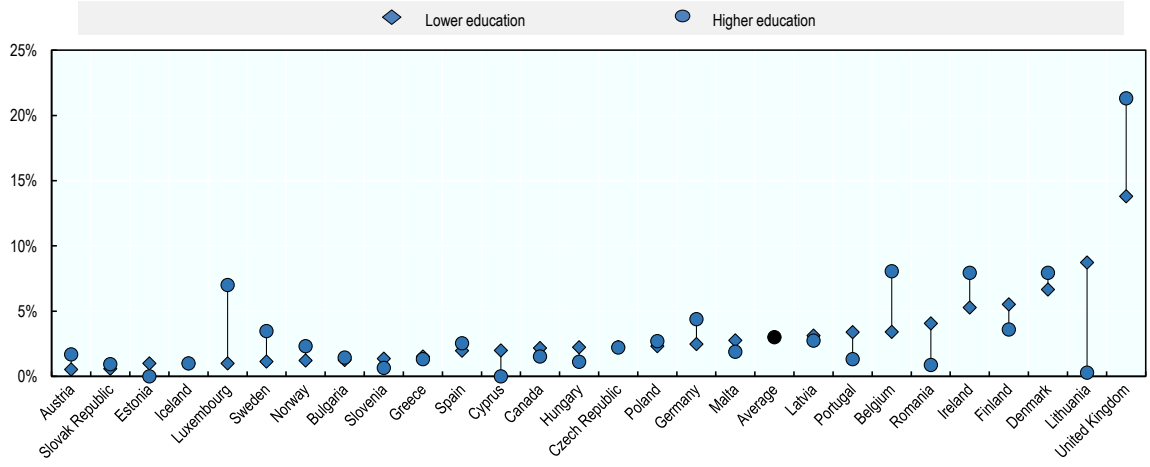
### *There is no clear social gradient in heavy drinking in the majority of countries*

Heavy alcohol consumption (i.e. having a daily amount of pure alcohol of 20 grams or more for women, and 40 grams or more for men) increases the risk of harmful consequences in terms of both morbidity and mortality[4] (Sassi, 2015[26]). Rates of heavy drinking display a large degree of variation across countries, and are generally more common among men than women. On average across European and OECD countries, 5% of men report heavy drinking compared to 3% among women (Annex Table 2.A.5). Among men, the United Kingdom, Romania, and Portugal have the highest proportion of heavy drinkers (above 10%), while these shares stand only at 1% in Cyprus and Iceland. For women, the share of heavy alcohol consumers is highest in the United Kingdom (17%), Ireland and Belgium (7-8%). By comparison, in Croatia and Estonia no heavy female drinkers were included in the EHIS-2 sample.

Contrary to the risk of smoking and of being overweight, the social gradient in heavy alcohol consumption is not clear (Figure 2.11). For women, the differences in heavy drinking between the least and most educated population groups are only significant in nine countries: in Lithuania, Portugal, Romania and Canada the least educated women drink more; in Austria, Belgium, Germany, Luxembourg and the United Kingdom the most educated women have a higher risk of heavy drinking (Annex Table 2.A.5).

At population level, heavy drinking is a greater problem as education decreases for women in three countries (Lithuania, Romania and Canada). In seven countries, better education is significantly associated with increased heavy drinking overall (Austria, Germany, Norway, Denmark, Belgium, the United Kingdom and Luxembourg) (Table 2.5). In the remaining 17 countries, there is no social gradient in heavy drinking.

## Figure 2.11. Age-standardised probability to be a heavy drinker by education level, women

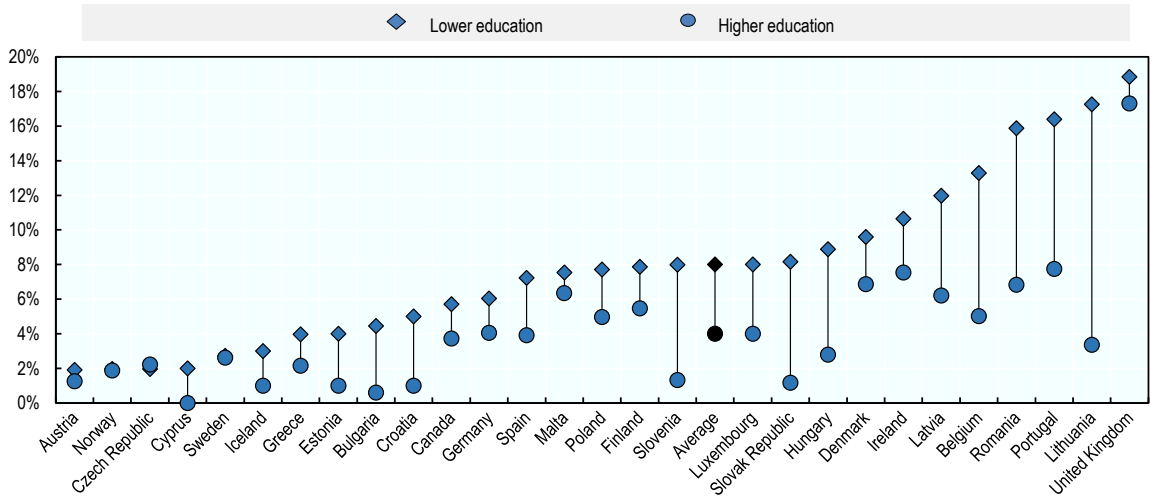



Note: Data from 27 European countries and Canada. Results correspond to the age-standardised probabilities estimated with logit models. Difference between education groups is significant at the 95% confidence level for Austria, Belgium, Germany, Lithuania, Luxembourg, Portugal, Romania, the United Kingdom and Canada.
Source: OECD calculations based on national health surveys.

For men, the gradient is more consistent across countries and in the expected direction. In 25 countries, the highest educated men are less at risk of heavy drinking compared to those with the lowest level of education (although the relationship between education and heavy drinking is significant in only eight countries – see Annex Table 2.A.5). Lithuania, Romania, Portugal, the Slovak Republic, Belgium and Slovenia present the largest gap in heavy drinking between education levels – more than 6 percentage points (Figure 2.12).

For men, at population level, heavy drinking becomes less frequent as education rises in 13 countries. Inequalities are higher in Portugal, Lithuania, and Romania and smaller in Canada and Spain (Table 2.5). The social gradient is not significant in 15 countries.

## Figure 2.12. Age-standardised probability to be heavy drinker by education level, men




Note: Data from 27 European countries and Canada. Results correspond to the age-standardised probabilities estimated with logit models. Difference between education groups is significant at the 95% confidence level for Belgium, Bulgaria, Estonia, Hungary, Lithuania, Luxembourg, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain and Canada.
Source: OECD calculations based on national health surveys.

## Table 2.5. Absolute education-related inequality in heavy drinking

| | …decreases when education decreases | …does not differ across education groups | …increases when education decreases |
|---|---|---|---|
| Women – The probability of heavy drinking… | AUT, DEU, NOR, DNK, BEL, GBR, LUX | CYP, SVN, HUN, FIN, EST, BGR, PRT, CZE, ISL, MLT, SVK, GRC, POL, ESP, LVA, IRL, SWE | CAN, ROU, LTU |
| Men – The probability of heavy drinking… | - | IRL, CZE, GBR, ISL, GRC, AUT, NOR, DNK, SWE, FIN, MLT, HRV, CYP, POL, DEU | CAN, ESP, BGR, LUX, LVA, EST, SVN, HUN, SVK, BEL, ROU, LTU, PRT |

Note: Within each cell, countries are ranked from lowest to highest degree of inequality using the SII.
Source: OECD estimates based on national health survey data.

The difference of patterns in the social gradient in drinking behaviour between genders has already been demonstrated elsewhere. OECD (2015) showed that higher educated women are more likely to be heavy drinkers than their counterparts in lower education groups, while the reverse pattern is found for men in seven countries (least educated men are more at risk of heavy drinking) (Sassi, 2015[26]). The reverse social gradient among women is also confirmed by a meta-analysis covering 33 countries (Grittner et al.,

2013[27]). Most plausibly, for women with higher education, drinking behaviour is associated with a wider range of social activities. They might have more opportunities of socialising and going out with colleagues compared to women with a lower level of education. It might also be possible that women with higher education drink more heavily because they take better paid jobs which involves higher degrees of responsibility and level of stress (Sassi, 2015[26]).

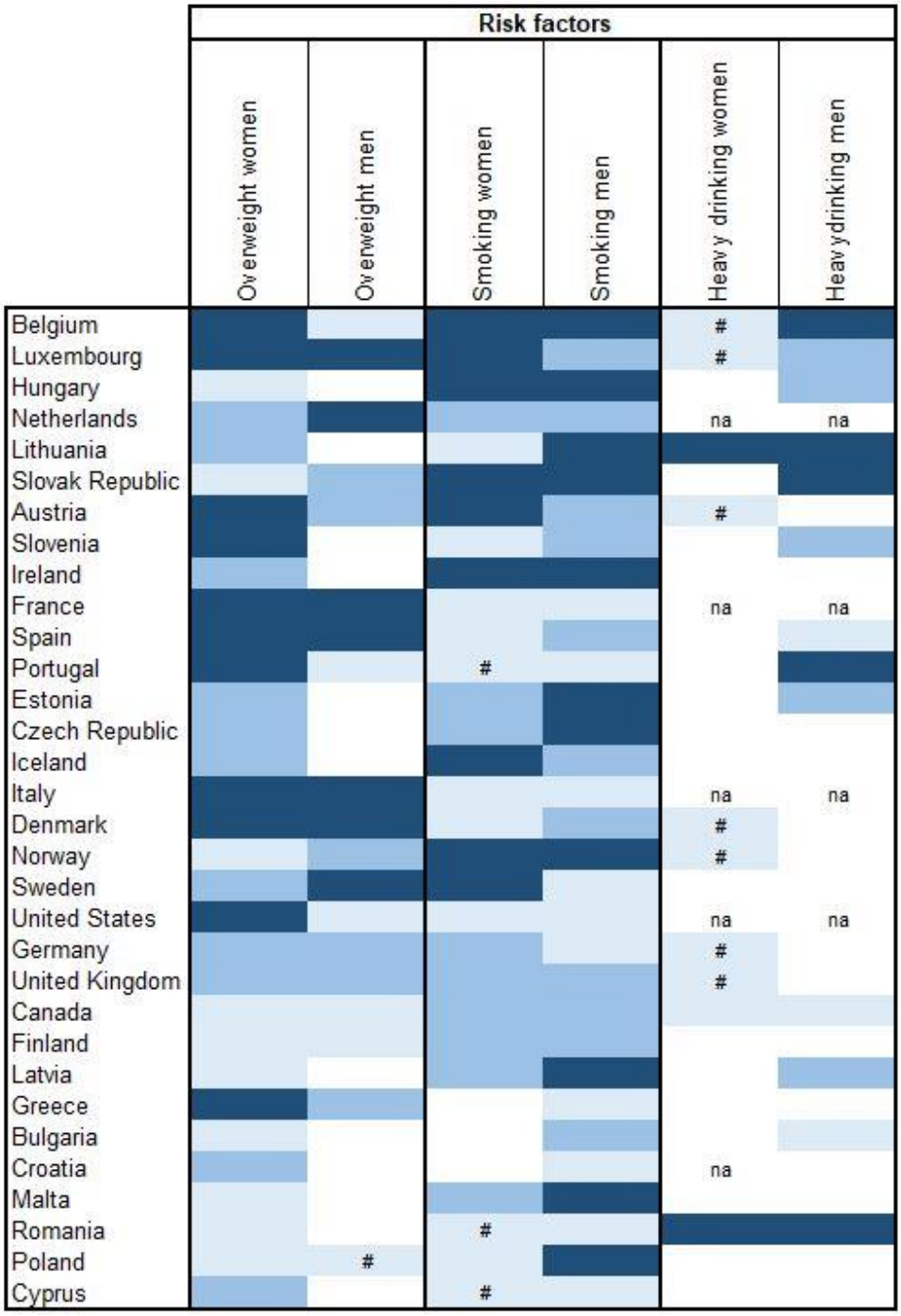
### *2.3.2. Some countries concentrate inequalities in behavioural risk factors*

The final question is whether patterns emerge for some countries when considering jointly the degrees of inequalities in the various behavioural risk factors described above. The grouping presented in Figure 2.13 results from ranking each country's level of inequality for each risk factors for men and women separately based on the rank of the SII. For each risk factor, it allows for an identification of countries with higher, lower and intermediate levels of inequality.

- Across European and OECD countries, the highest inequalities in risk factors to the detriment of the least educated people can be observed in Belgium, Luxembourg, Hungary, the Netherlands, Lithuania, the Slovak Republic, Austria, and Slovenia. By contrast, inequalities are comparably low in Cyprus, Poland, Romania, Malta, Croatia, Bulgaria and Greece.
- Figure 2.13 also permits to distinguish three groups of countries:
  - In the first group (e.g., Norway, Iceland, the Czech Republic, Hungary and Ireland) considerable inequalities in smoking to the detriment of the least educated exist but inequalities in overweight and heavy drinking are less strong.
  - The second group of countries (e.g., Denmark, Spain, Italy, France, and Greece) shows the opposite pattern: inequalities in overweight strongly disadvantage the least educated people but inequalities in smoking and heavy drinking are less strong.
  - The last group of countries (Romania and Lithuania) combines high inequalities in heavy drinking to the detriment of the least educated people (women and men) and less strong inequalities in smoking and overweight.

## Figure 2.13. Summary of inequalities in risk factors

Light/medium/dark blue indicate low/intermediate/high levels of inequality




Note: The countries have been ranked from most unequal to least unequal. The grouping results from ranking each countries' level of inequality for each risk factors for men and women separately based on the rank of the SII. The sum of the six ranks is used to identify countries with higher, lower and intermediate levels of inequality in behavioural risk factor. For each indicator, countries were clustered into three groups of roughly equivalent size. Light/medium/dark blue indicate low/intermediate/high levels of inequality to the detriment of the poor/less educated for a given indicator. A white cell indicates no significant inequality. Countries with inequalities to the detriment of the rich/higher educated were ranked in the category of lower levels of inequality (cells are marked with #).
Source: OECD estimates based on national health survey data.

## 2.4. Socio-economic inequalities in health outcomes

Health is one of the main ingredients of a good life. In their meta-analysis of 29 studies, Ngamaba et al (2017), for example, show that better health is consistently associated with greater well-being and life satisfaction (Ngamaba, Panagioti and Armitage, 2017[28]). A good health status also improves economic standing through its impact on the labour market outcomes (see Section 2.2).

However, not everyone has the same opportunity to lead a healthy life. Large differences in health exist between and within countries. Indeed, there is a large social gradient in health outcomes for which the odds are consistently stacked in favour of those better off (Marmot and Brunner, 2005[1]; Marmot et al., 1991[2]; Marmot and Wilkinson, 2006[3]). The least well-off and the least educated are, for example, less likely to be in good health and have a higher risk of dying prematurely than those who face more favourable socio-economic circumstances. The socio-economic gradient in health status exist in practically all countries (Murtin et al., 2017[29]; Balaj et al., 2017[30]; Leão et al., 2018[31]).

Assessing the magnitude of health inequalities within and between OECD countries is of particular importance given that reducing health inequalities is often a stated objective of countries health policies. As highlighted in Chapter 1, reducing health inequalities is also germane to the overall agenda to make societies more inclusive. As an illustration, investing in people's health is a central recommendation in OECD's Framework for Policy Action on Inclusive Growth which aims to help governments to make economic growth more inclusive, in a way that creates opportunities for all groups of the population and distributes the dividends of increased prosperity fairly across society (OECD, 2017[8])

Using micro-level data from national health surveys, this section provides new evidence on education-related inequalities in health status across European and OECD countries.

### *2.4.1. Inequalities in longevity by socio-economic status are substantial*

By way of context, it is important to highlight that life expectancy has steadily increased over the past decade. On average across OECD countries, life expectancy at birth has increased by over ten years since 1970 (OECD Health Statistics, 2019). These trends mostly relate to a reduction of mortality rates from cardiovascular diseases and cancer.

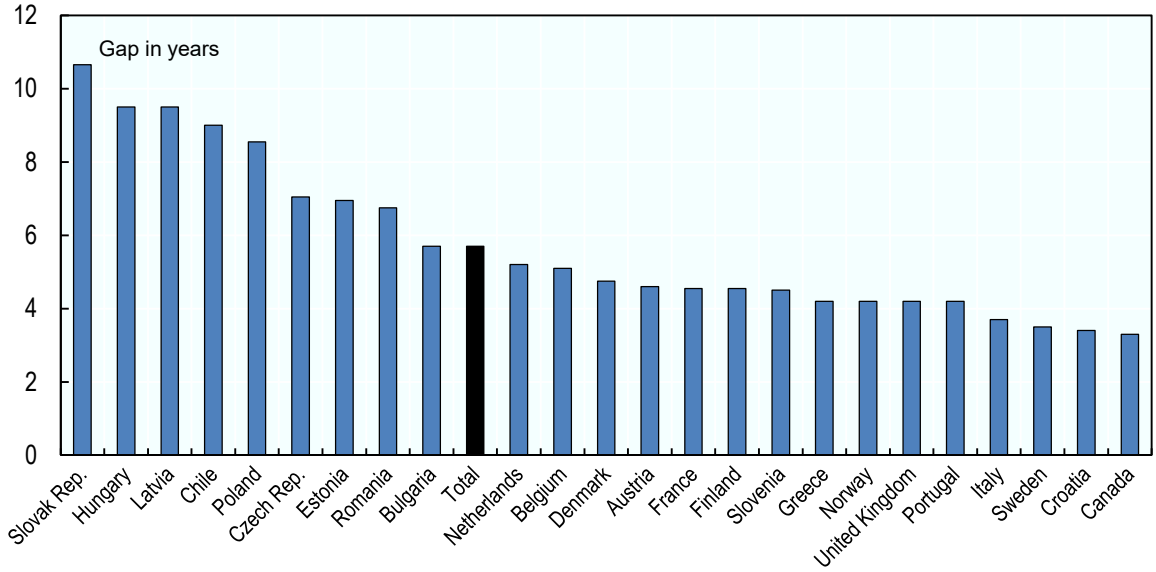
However, the gains in life expectancy have not been equally shared. Large inequalities in life expectancy exist by socio-economic status including education level, income or occupational group, as illustrated, for instance, by Figure 2.14. On average across countries for which data are available, people with no high-school diploma can expect to live about six years less than those with a tertiary education. Inequalities in life expectancy are particularly large in Central and Eastern Europe. In the Slovak Republic, Hungary, Latvia, Poland, alongside Chile, a person with a low level of education can expect to live more than eight years less than those with a high level of education. These gaps in life expectancy are smaller in Canada, Croatia, Sweden and Italy, where they stand between three and four years.

The education gap in life expectancy is due to higher mortality rates among the least educated at different ages. The least educated people have, for example, higher death rates from circulatory diseases and cancer (Mackenbach et al., 2016[32]; Mackenbach et al., 2017[33]). A greater prevalence of smoking and of excessive alcohol consumption, particularly among low-educated men, contribute to these higher mortality rates.

To complement these data showing evidence of social gradients in longevity by educational attainment, the next section provides inequality estimates for morbidity indicators including self-assessed health status, limitations in daily activities and multiple chronic conditions.

## Figure 2.14. Gap in life expectancy at birth, 2016 (or nearest year)

Difference between the lowest and highest level of education




Source: Eurostat Database and OECD Health Statistics 2019.

### *2.4.2. Socio-economic differences in morbidity are also marked*

This section investigates socio-economic differences in morbidity by looking at three variables: i) self-assessed health status, ii) limitations in daily activities and iii) multiple chronic conditions (see Table 2.6 for a list of variables and countries covered in this section). The method used is identical to the one presented in the beginning of Section 2.3, with the difference that the indirect standardisation factors gender in addition to age.

## Table 2.6. Data used and coverage of the analysis for health status

| | Description of variables and coverage on the basis of EHIS-2 |
|---|---|
| Dependant variables | Self-assessed health status: dummy variable identifying people reporting very poor, poor, fair health status versus good or very good health status. |
| | Limitations in daily activities: dummy variable identifying people reporting being severely limited and limited versus not limited. |
| | Multiple chronic conditions: dummy variable identifying people with two or more chronic conditions versus zero or one chronic condition. |
| Explanatory variables | Education is categorised into three different levels of education: 1. less than primary, primary and lower secondary level; 2. upper secondary and post-secondary non-tertiary level; 3. tertiary level |
| Variables standardised for | Age, sex |
| Country coverage and exclusions | 30 EHIS countries, Canada, Chile and United States. The number of chronic diseases is not available in Chile. |
| Covered population | The population aged 18 and above. |

Note: The description of variables in this table refers to EHIS used for 30 of the 33 countries studied. Additional explanations about variables used for other countries surveys are available in Annex Table 2.A.1.

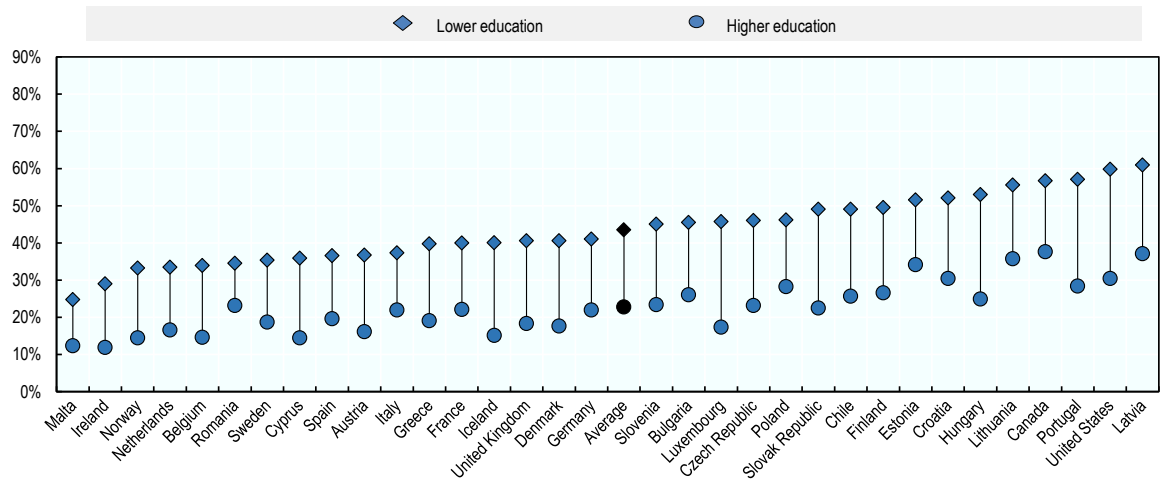
*In all countries, the least educated have a higher risk of assessing their own health as poor*

Self-assessed-health[5] and other reported measures of health are good summary measures which capture different dimensions of health including medical and physical functioning. They are recognised as good predictors of people's future health care use and mortality (Palladino et al., 2016[34]). However, as any other survey-based indicator, these measures of health are subject to reporting bias of self-reported data such as under-diagnosis and reporting errors. In addition, there are cross-country comparisons issues due to cultural differences.

Across OECD and European countries, Lithuania, Latvia and Portugal report the highest percentages of poor self-assessed health. Here, one in two persons consider their health status as not good. By comparison, these shares are below 20% in Ireland and Malta (Annex Table 2.A.6).

As expected, there is a large gap in self-assessed health across education groups (Figure 2.15): 44% of the least educated people assess their health as poor, compared to 23% of the people in the highest education group. Differences of 25 percentage points or more between education groups can be observed in the United States, Iceland, the Slovak Republic, Hungary, Luxembourg, and Portugal. In Romania, Malta and Italy these gaps are less than 16 percentage points.

## Figure 2.15. Age-sex standardised probability of reporting a poor-self assessed health status by education level




Note: Data from 30 European countries, Canada, Chile and the United States. Results correspond to age-sex standardised probabilities. Differences between education groups are significant at the 95% confidence level for all countries.
Source: OECD estimates based on national health survey data.

Although smaller than for self-assessed health, differences between the least and most educated population groups in the probabilities of reporting limitations in daily activities and multi-morbidities go in the same direction. People in lower education groups are 16 percentage points more likely to report limitations in daily activities, and 11 percentage points more likely to report multi-morbidity compared to their counterparts in higher education groups (Annex Table 2.A.6 and 7). For the risk of reporting multi-morbidities, the highest differences between education groups are found in the Slovak Republic, Luxembourg, Cyprus and Iceland, while the lowest differences are found in Romania, Poland, Latvia, Estonia, and Germany. For the risk of reporting limitation in daily activities, the highest differences between education groups are found in the Slovak Republic, Luxembourg, Hungary and Lithuania, and the lowest in Malta, Canada, Italy, Chile, and Romania.

*Absolute inequalities in self-assessed health are the highest in Portugal, Luxembourg Hungary, the Slovak Republic and the United States*

All 33 countries included in this analysis display inequalities in health to the detriment of the poor for all measures available. To measure and compare the magnitude of health inequalities across countries taking into account the distribution over the whole population, Slope index of inequalities were calculated for all three health variables (Box 2.5 presents the methodology). Table 2.7 shows that inequalities to the detriment of the poor exist for all variables in all countries, and ranks them in each case from the lowest to highest degree of inequality. For self-assessed health, Portugal and Luxembourg present by far the largest absolute inequalities to the detriment of the least educated people. Hungary, the Slovak Republic and the United States also present very large absolute inequalities in self-assessed health. By contrast, Romania, Chile, Sweden, the Netherlands, Austria, Italy, Denmark, Estonia, and Norway are low inequality countries.

There is some consistency in country rankings when also considering inequalities in limitations in daily activities and in multi-morbidity. Luxembourg, Portugal, Hungary and the Slovak Republic display high level of absolute inequalities for all three analysed health variables. To some extent, this is also true for Greece and Iceland. On other hand, Romania and Sweden are faring relatively well in having low education-related inequalities across the different health outcomes. Absolute inequalities also appear more limited in Chile, the Netherlands and Canada (see all numerical values in Annex Table 2.A.6-7).

### Table 2.7. Education-related inequalities in health

| | …does not differ across education groups | …increases when education decreases |
|---|---|---|
| The probability of reporting a poor self-assessed health… | - | ROU, SWE, NLD, CHL, AUT, ITA, DEU, EST, NOR, BGR, CAN, POL, MLT, GBR, HRV, BEL, FRA, ESP, CZE, DNK, IRL, LTU, CYP, SVN, FIN, GRC, LVA, ISL, USA, SVK, HUN, LUX, PRT |
| The probability of reporting limitation in daily activities … | - | ROU, CHL, DNK, SWE, CAN, MLT, NLD, ITA, SVN, POL, DEU, USA, ESP, CZE, AUT, GBR, EST, FIN, NOR, FRA, LVA, CYP, ISL, BGR, BEL ,IRL, PRT ,HRV, SVK, GRC, HUN, LUX, LTU |
| The probability of reporting multiple chronic conditions … | - | ROU, POL, EST, SWE, LVA, BGR, CAN, MLT, DEU, SVN, FIN, FRA, CZE, GBR, ITA, LTU, USA, DNK, NLD, GRC, HRV, BEL, AUT, HUN, IRL, NOR, ESP, CYP, SVK, ISL, PRT, LUX |

Note: Data from 30 European countries, Canada, Chile and the United States. The data for multiple chronic conditions was not available for Chile. Countries are ranked from lowest to highest degree of inequality using the SII (numerical values in Annex Table 2.A.6-7).
Source: OECD estimates based on national health survey data.

These results support recent findings exploring inequalities in poor self-reported health in 26 EU countries (Leão et al., 2018[31]). Using cross-sectional data from the EU-SILC survey, high level of inequalities were found in some Southern European countries (including Cyprus, Greece, and Portugal) and in some Central and Eastern European countries (including Hungary, Slovenia, and the Slovak Republic). The use of the European Social Survey also confirmed that Greece and Portugal have large inequalities in self-reported general health (Eikemo et al., 2008[35]). EHIS data used in this chapter, however, does not point to Spain and even less Italy as being among the highest inequality countries with regards to self-assessed health – or other health indicators for that matter. This result is, however, consistent with findings from Mackenbach et al (2008[36]) which showed that inequalities in mortality and in self-assessed health were smaller in those two countries.

Outside of Europe, a recent analysis showed that gaps between the self-assessed health of groups with high and low education in various states of the United States were in general greater than in most European countries (Präg and Subramanian, 2017[37]). The population-level summary measure used here generally

confirms this although some European countries (Portugal, Luxembourg, Hungary and the Slovak Republic) exhibit larger absolute educational inequalities.

Institutional determinants might partly explain these cross-country variations in socio-economic health inequalities. High level of income inequality, and fragmented social provision have indeed been associated with larger health inequalities (Eikemo et al., 2008[35]; Präg and Subramanian, 2017[37]; Ásgeirsdóttir and Ragnarsdóttir, 2013[38]; Leão et al., 2018[31]).

### *2.4.3. Summary of inequalities in health status*

*Some countries concentrate education-related inequalities in health status*

Considering jointly the information on inequalities across different health status variables suggests inequalities are consistently higher (or lower) in some countries. Additional analyses combining the SIIs for self-assessed health, activity limitations and multiple chronic conditions was used to distinguish three groups of countries with low, intermediate and high levels of inequalities (see Box 2.6)[6]. Based on this, Figure 2.16 ranks countries by increasing life expectancy at birth while the colour of the bar indicates the level of inequality based on this grouping (darker shades correspond to more widespread inequalities to the detriment of the least educated). This analysis shows:

- The highest education-related inequalities in health status to the detriment of the least educated are found in Lithuania, Hungary, the Slovak Republic, Croatia, Portugal, Luxembourg, Iceland, Greece, Ireland, Belgium and Cyprus. In seven of these countries, the life expectancy at birth is above the average of all countries considered (80.2 years). The Slovak Republic, Hungary, Lithuania, and Croatia combine a relatively low life expectancy at birth with very large health inequalities to the detriment of the least educated.
- Northern European countries (Denmark, Sweden, the Netherlands, Germany), Poland, Romania, Estonia, Malta, Italy and Canada, Chile present the lowest level of education-related inequalities in health status to the detriment of the least educated. In four of these countries (Romania, Estonia, Poland, and Chile), the life expectancy at birth is below the average of all countries considered (80.2 years). Italy, Malta and Sweden combine a high life expectancy at birth but very low health inequalities to the detriment of the least educated.
- Bulgaria, Latvia, the United States, the Czech Republic, the United Kingdom, Finland, Austria, Slovenia, Norway, France, and Spain have more intermediate levels of inequalities in health.

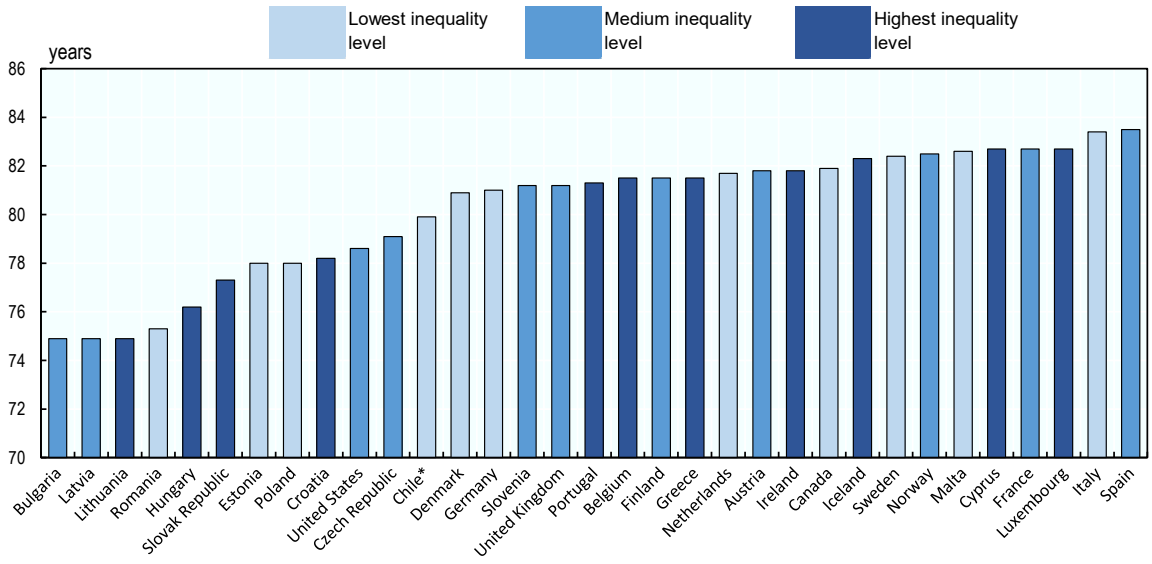
Overall, the correlation between the overall health status in a country (as measured by life expectancy at birth) and the level of education-related health inequalities is very weak.

### Box 2.6. The principal component analysis

The principal component analysis (PCA) is carried out on the SII for the three health outcome measures (self-assessed health status, limitations in daily activities and multiple chronic conditions). Using an orthogonal transformation, the PCA convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variables. It helps summarising the information contained on each country and identifying "regularities" between the values they take.

To summarise the results of the PCA, countries are divided in three groups of roughly equivalent sizes in which inequalities are relatively low, medium and large. These "convenient thirtiles" are based on the position of the countries on the first axis of the PCA with minor adjustment to ensure countries which are "very close" on that axis belong to the same groups.

### Figure 2.16. Life expectancy at birth and summary level of education-related health inequalities across European and OECD countries




Note: *The data for multiple chronic conditions was not available for Chile, however various analyses based on comparisons of data for self-assessed health and activity limitations unambiguously demonstrate that the country belongs to the low inequalities group.
Source: OECD estimates based on national health survey data.

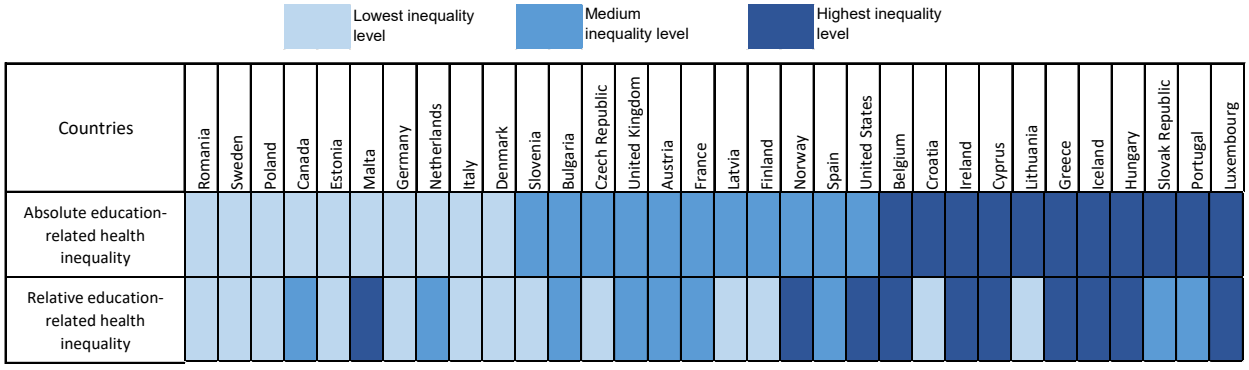
*The ranking of countries is broadly consistent when using an alternative measure of inequalities*

An alternative grouping using a similar methodology but comparing relative inequalities led to broadly consistent results with a few exception. Alongside SIIs, RIIs were computed which capture relative inequalities by education level (results are presented in Annex Table 2.A.6-7). The grouping obtained in the PCAs combining RIIs for self-assessed health, activity limitations and multiple chronic diseases is compared with the one obtained with SIIs in Figure 2.7. With some exceptions (Malta, Croatia and Lithuania), the pattern observed for *absolute* education-related inequalities in health status also generally applies to *relative* education-related inequalities in health status.

Malta would be clustered into the high inequality group if RIIs were used instead of SIIs to determine inequalities in health outcomes. This is due to the fact that the general prevalence in poor health outcomes

in Malta–and hence the absolute differences between the different education groups- is comparably low. Looking at relative differences instead would signal higher overall inequalities. The reverse is true for Croatia and Lithuania: They would be grouped into the category of low inequality countries if RIIs were used instead of SIIs.

## Figure 2.17. Absolute and relative education-related inequality in health, European and OECD countries




Note: The groupings by level of absolute and relative inequalities in health status are derived from PCA analysis of the SIIs and RIIs (available in Annex Table 2.A.6-7). Data for multiple chronic conditions was not available for Chile so the country is not included.
Source: OECD estimates based on national health survey data.

### *Using income as a proxy of socio-economic status provides a different grouping of countries*

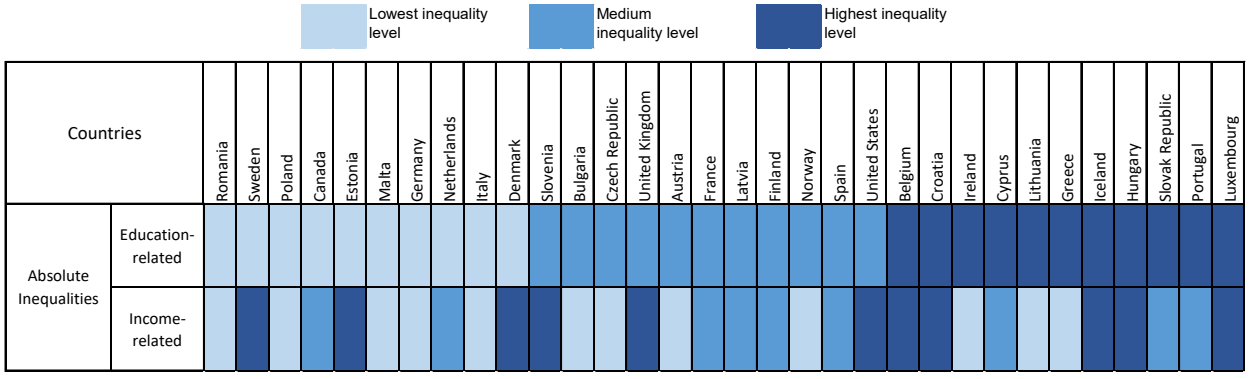
While the focus of this section is on differences in health by education level, income is an alternative proxy of socio-economic status to measure health inequalities. Absolute and relative income-related inequalities for all three health indictors were estimated on the basis of SIIs and RIIs (results in Annex Table 2.A.8) and groupings by level of inequality were elaborated as above. As with education, results first show the existence income-related inequalities to the detriment of the poor in all countries considered. Figure 2.18 compares the grouping of countries by level of (absolute) education-related inequalities with that based on income. Income and education tend to be differently associated to health status across countries. In particular, results show that:

- There is a relatively weak correlation between absolute education- and income-related inequalities (correlation coefficient of 0.23).
- 14 out of 32 countries belong to the same groups of inequality whether inequalities are captured through education or income level (Romania, Poland, Malta, Germany, Italy, France, Latvia, Finland, Spain, Belgium, Croatia, Iceland, Hungary, Luxembourg).
- Among the other countries, Sweden, Estonia and Denmark have low levels of education-related inequalities in health status but have high levels of income-related inequalities. The same is true for Slovenia, the United Kingdom and the United States, which have all high levels of income-related health inequalities and intermediate levels of education-related health inequalities. In these countries, social health inequalities are thus more pronounced when income is used as a measure of the differences in the social structure of the countries. In line with these results, the United States, the United Kingdom, Estonia and Slovenia have previously been found as high income-related health inequalities countries (van Doorslaer et al., 1997[39]; Ásgeirsdóttir and Ragnarsdóttir, 2013[38]). More recently, Hero, Zaslavsky and Blendon (2017) have shown that the United States, Chile and Portugal have among the largest income-related differences in self-rated health (Hero, Zaslavsky and Blendon, 2017[40]). In that regards, results presented in this chapter for Chile differ from previous findings: SII measured by education and income point to low levels of inequalities in

Chile compared to other OECD countries (results in Annex Table 2.A.8). Although health inequalities have been reduced recently in Chile (Cabieses et al., 2015[41]), further research would need to confirm this result.

- Greece, Lithuania, Ireland, Norway, Austria, Czech Republic, and Bulgaria show a reverse pattern. They have low levels of income-related health inequalities combined with high (Ireland, Lithuania and Greece) or medium (Bulgaria, the Czech Republic, Austria and Norway) levels of education-related health inequality.

## Figure 2.18. Absolute inequalities in health status comparing education and income




*Note*: The rank of absolute inequalities in health status are derived from PCAs analyses presented above (box 2.6). Numerical results are available upon request. The data for multiple chronic conditions was not available for Chile so the country is not included.
*Source*: OECD estimates based on national health survey data.

The fact that countries have different levels of inequalities depending on whether the summary marker of people's social position is income or education is not a surprise:

- Each country is characterised by a distribution of the population across education levels which can be more or less unequal;
- The wealth gap between people in the first and last income quintile is also likely to vary across countries;
- Finally, the marginal impacts of income and education on health are unlikely to be identical.

A similar set of arguments could be made to explain why patters between relative and absolute inequalities differ.

Systematically linking the differences in the above pattern with countries characteristics is clearly beyond the scope of this report. Their presentation, however, highlights a number of points:

Pretty much no matter how they are measured, inequalities in health status are a problem in all countries considered;

Some countries clearly have high levels of inequality, no matter how they are measured (e.g., Belgium, Croatia, Iceland, Hungary and Luxembourg). Others are doing better with low levels of inequalities (Romania, Poland, Malta, Germany, and Italy) but some of them need to figure out how to do better on average health outcomes while trying not to leave people behind (Romania and Poland);

At the end of the day though, deciding on priorities and policies to tackle health inequalities requires looking at various measures simultaneously –it is never enough to look at one type of measure of inequality for one indicator on one measure of welfare.

## 2.5. Synthesis and conclusion

### *2.5.1. Poor health undermine people's ability to work*

The first section of the chapter reminds the importance of tackling poor health, not only because it undermines people's welfare but also because it limits their ability to work. Poor health, measured by the number of deteriorated health indicators, translates into lower employment rates and higher absenteeism rates. On average across European and OECD countries, 70% of those who face no health problem are employed, versus 62% of people with at least one deteriorated health indicator. The labour market participation rates could increase by 3 percentage points in the absence of ill health on average across countries, ranging from less than 1 percentage point in Sweden to more than five in Chile.

- When they have a job, people in poor health are less productive at work. Nearly half of those who consider themselves in poor health are likely to be absent from work at least once a year compared to only around a quarter of the people in good health. In total, a third of all people in poor health are employed and do not take sick leave during any year, compared to half of those in good health. In the absence of ill health, an additional 7.4 percentage points of the working age population could be fully productive across European and OECD countries. The burden of ill health on the labour market is the highest in Luxembourg and Denmark (around 10 percentage points) and comparably low in Malta (less than 4 percentage points).
- Country-specific labour market policies (such as activation labour market policies, or the scope of compensated sick leave and the generosity of the benefit schemes) and health policies (such as public health actions to support workers experiencing chronic ill health to stay in work) contribute to explaining these cross-country differences. The present analysis could serve as a starting point to identify which sets of policies overall contribute to sustaining a more healthy and productive active population.

### *2.5.2. Exposure to behavioural risk factors becomes more prevalent as education decreases*

The second section of the chapter confirms that behavioural risk factors are unequally distributed along the social spectrum: less educated people tend to have higher exposure rates to overweight, smoking and heavy drinking (although considerable difference exist across genders). In particular, results show that:

- In all countries included in the analysis, the distribution of obesity and overweight is significantly unequal and to the detriment of the least educated for women. The same is true for men in 18 countries but the gradient is not significant in 13 countries. In Poland, inequalities in obesity are to the detriment of the most educated men. In Luxembourg, France, Spain, Italy and Denmark inequalities are relatively high, for both men and women.
- For both women and men, smoking rates are twice as high for people in the lowest education group compared to those in the highest one. The summary measures indicates significant inequalities to the detriment of women with lower education in 26 countries and to the detriment of higher educated women in Romania, Cyprus and Portugal. There was no significant gradient in the remaining three countries: Bulgaria, Greece and Croatia. For men, inequalities to the detriment of the least educated are significant everywhere and highest in Baltic countries, Belgium and Hungary.
- Heavy drinking among men becomes less frequent as education rises in 13 countries. Inequalities to the detriment of the least educated men are higher in Portugal, Lithuania, Romania, and comparably small in Canada, Spain and Bulgaria. The social gradient in heavy drinking is less clear or consistent among women. In seven countries, more education is associated with increased heavy alcohol consumption (Austria, Germany, Norway, Denmark, Belgium, the United Kingdom

and Luxembourg), while this harmful drinking habit becomes more prevalent as education decreases in Lithuania, Romania and Canada. There is no social gradient in 15 countries for men and 17 for women. Inequalities to the detriment of the least educated are largest for both men and women in Romania and Lithuania.

### *2.5.3. All countries display inequalities in health to the detriment of the least educated people*

The last section provides new evidence on education-related health inequalities across European and OECD countries. All countries display a significant gradient of inequality to the disadvantage of the least educated people. The results consistently show that lower-educated people have a higher likelihood to report a poor health status, with variations across countries and across health status variables. The findings show:

- People in the lowest education group are 21 percentage points more likely to assess their health as poor compared to their counterparts in the highest education group.
- People with less than a high school degree are 16 percentage points more likely to report limitations in daily activities compared to those with tertiary education.
- People in the group with the lowest level of education groups are 11 percentage points more likely to suffer from multi-morbidities compared to those in the group with the highest level of education.
- For these three variables which capture health status, population-level summary measures of inequalities show a gradient detrimental to the poor in all countries.

Considering jointly inequalities across the three health status variables suggests inequalities are consistently higher in some countries:

- The highest education-related inequalities in health status to the detriment of the least educated are found in Greece, Portugal, Cyprus, Croatia, Lithuania, the Slovak Republic, Hungary as well as Luxembourg, Belgium, Ireland and Iceland.
- Northern European countries (Denmark, Sweden, the Netherlands, Germany), Slovenia, Poland, Romania, Estonia, Malta, Italy, Canada and Chile present the lowest level of education-related inequalities in health status to the detriment of the least educated. Results suggest that there is a weak correlation between life expectancy at birth and levels of absolute inequalities.

### *2.5.4. Policy responses need to be comprehensive, and to better target those most affected*

A series of policy options exist to redress inequalities in health and its determinants. On one hand, given the variety of health determinants, improving health outcomes and reducing health inequalities require a comprehensive policy approach characterised by coordinated actions from national institutions and the private sector. Outside of the health sector, the regulation of the labour market, redistributive fiscal policy measures, opportunities for decent housing, or reducing access barrier to schooling are key policy areas of interest to reduce health inequalities (Forster, Kentikelenis and Bambra, 2018[42]).

On the other hand, more tailored solutions seem to be required to reduce inequalities in risky health behaviour. Public health policies not only should target men and women differently, but may also focus more on particular population groups that are vulnerable to risky health behaviour -notably those with lower levels of education. A number of OECD and European countries have introduced a package of regulation on tobacco, beverages, and food products to tackle risky health behaviour, including taxation instruments, labelling norms, and age restrictions (Forster, Kentikelenis and Bambra, 2018[42]; Sassi, 2015[26]), with significant impact on lower socio-economic groups (Sassi F, 2009[43]). Empirical evidence for example show that tobacco tax increases are an effective measure for reducing smoking among persons of low

socio-economic status (Bader, Boisclair and Ferrence, 2011[44]; Thomas et al., 2008[45]), and that they reduce socio-economic inequality in tobacco consumption over the long run (Tabuchi, Iso and Brunner, 2018[46]).

To raise awareness of unhealthy lifestyles and drive change, efforts to improve health literacy should be strengthened. This may be particularly beneficial to people with lower levels of education by enhancing their understanding of the long-term consequences of risky health behaviour. It can also have wider effects by developing individual's knowledge and empower them to act on health information, and by helping people in need for health care navigate the health system more effectively.

Finally, the health systems can contribute to improving health and overcoming inequalities by ensuring access to quality services irrespective of people's socio-economic circumstances and ethnic origin. Improving access to culturally safe and responsive services for minorities or indigenous populations is for example critical to tackle health inequalities related to ethnicity and immigration

To what extent the health systems provide care to all segments of the population based on need will be further explored in the following chapters.

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# Annex 2.A. Detailed results on Chapter 2

## Annex Table 2.A.1. Description of variables for surveys other than EHIS

| | |
|---|---|
| MEPS 2016 (USA) | **Poor self-assessed health:** dummy variable with people who reported a good, fair or poor health status, versus those who reported either a very good or an excellent one. |
| | **2+ chronic diseases:** dummy variable with people who reported having suffered from 2 or more chronic conditions versus 0 or 1 chronic disease in the past 12 months. The following chronic conditions are considered: diabetes, hypertension, emphysema or chronic bronchitis, asthma, heart disease, ever had a stroke and/or ever had a heart attack. |
| | **Depression:** dummy variable with people who reported a score strictly above 3 when asked to rate their feelings overall in the past 2 weeks on a scale from 1 to 6, versus those who reported a score inferior or equal to 3. A score above 3 reflects a person's tendency towards depression. |
| | **Smoking:** dummy variable with people who reported smoking currently, versus those who reported not smoking currently. |
| | **Education:** categorical variable reflecting three different levels of education: 1. No degree; 2. General education diploma and high school diploma; 3. Bachelor' degree, master's degree and doctor. |
| CCHS 2017 (Canada) | **Absence from work:** dummy variable with people who reported having missed work, versus those who report not having done so in the past 3 months because of any of the following conditions: a chronic condition, an injury, an acute infectious disease, any other acute physical condition or an acute mental health condition. |
| | **Poor self-assessed health:** dummy variable with people who reported a good, fair or poor health status, versus those who reported either a very good or an excellent one. |
| | **2+ chronic diseases:** dummy variable with people reporting having suffered from 2 or more chronic conditions versus 0 or 1 chronic disease in the past 12 months. The following chronic conditions are considered: diabetes, hypertension, COPD, asthma, heart disease and/or effects of a stroke. |
| | **Depression:** dummy variable with people reporting having a mood disorder (depression, bipolar, mania, dysthymia) versus those who do not report one. |
| | **Education:** categorical variable reflecting three different levels of education: 1.Less than secondary school graduation; 2.Secondary school graduation, no post-secondary graduation; 3.Post-secondary certificate diploma or university degree. |
| CASEN 2017 (Chile) | **Poor self-assessed health:** dummy variable with people who reported a score below or equal to 5 when asked to grade their health status on a scale from 1 (very bad) to 7 (very good), versus those who reported a score strictly superior to 5. |
| | **Chronic diseases**: not available in the survey. |
| | **Education** categorical variable reflecting three different levels of education: 1. Less than primary and primary (no education, kinder and pre-kinder garden, special education, primary and basic education), 2. Secondary education (medium, technical and professional education level), and 3. Post-graduate level or more. |
| | **Risk factors**: not available in the survey. |

Note: In Canada and the United States, the dummy variable of poor health has been re-scaled to be comparable to the one used in other national health survey data. In EHIS, the following chronic conditions are considered: asthma, chronic bronchitis (or chronic obstructive pulmonary disease, emphysema), myocardial infarction (heart attack, or chronic consequences of myocardial infarction), coronary heart disease or angina pectoris, high blood pressure (hypertension), stroke (cerebral haemorrhage, cerebral thrombosis) or chronic consequences of stroke, arthrosis, low back disorder, neck disorder, diabetes, allergy, cirrhosis of the liver, urinary incontinence, kidney problems and depressions.

## Detailed results on labour market variables

### Annex Table 2.A.2. Descriptive statistics and predicted probabilities: employment and absence from work due to illness

| | Working-age population | | | | | Working population | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | % employed | % in poor health# | PP to be employed if no health problem | PP to be employed if poor health | GS | % absent | % in poor health | PP to be absent if no health problem | PP to be absent if poor health | GS |
| EU27/26 | 66% | 41% | 69% | 61% | | 32% | 37% | 25% | 46% | |
| OECD | 68% | 43% | 71% | 64% | | 36% | 39% | 28% | 49% | |
| Total | 67% | 41% | 70% | 62% | | 34% | 37% | 26% | 47% | |
| Austria | 68% | 41% | 74% | 66% | * | 49% | 36% | 40% | 61% | * |
| Belgium | 66% | 32% | 67% | 59% | * | 39% | 28% | 33% | 59% | * |
| Bulgaria | 60% | 29% | 63% | 49% | * | 15% | 22% | 10% | 32% | * |
| Canada | 67% | 43% | 71% | 63% | * | 33% | 38% | 27% | 42% | * |
| Chile | 64% | 37% | 66% | 62% | * | - | 35% | - | - | |
| Croatia | 54% | 45% | 54% | 51% | | 19% | 39% | 11% | 31% | * |
| Cyprus | 66% | 24% | 68% | 57% | * | 14% | 18% | 11% | 30% | * |
| Czech Republic | 69% | 40% | 70% | 61% | * | 22% | 37% | 15% | 34% | * |
| Denmark | 72% | 46% | 79% | 73% | * | 52% | 42% | 42% | 67% | * |
| Estonia | 78% | 45% | 81% | 74% | * | 29% | 41% | 21% | 40% | * |
| Finland | 66% | 59% | 70% | 64% | * | 58% | 56% | 47% | 65% | * |
| France | 66% | 41% | 66% | 61% | * | 30% | 38% | 23% | 44% | * |
| Germany | 81% | 52% | 83% | 79% | * | 62% | 50% | 53% | 71% | * |
| Greece | 49% | 30% | 51% | 42% | * | 17% | 22% | 12% | 30% | * |
| Hungary | 66% | 44% | 69% | 60% | * | 21% | 38% | 14% | 32% | * |
| Iceland | 77% | 47% | 82% | 74% | * | 50% | 43% | 41% | 60% | * |
| Italy | 59% | 33% | 61% | 57% | * | 30% | 30% | 24% | 43% | * |
| Latvia | 71% | 56% | 72% | 70% | | 30% | 53% | 19% | 40% | * |
| Lithuania | 69% | 45% | 71% | 65% | * | 22% | 43% | 15% | 32% | * |
| Luxembourg | 68% | 51% | 75% | 71% | | 46% | 48% | 35% | 60% | * |
| Malta | 65% | 28% | 65% | 58% | * | 41% | 22% | 37% | 52% | * |
| Netherlands | 68% | 37% | 73% | 62% | * | 44% | 31% | 37% | 59% | * |
| Norway | 76% | 33% | 82% | 66% | * | 50% | 27% | 44% | 64% | * |
| Poland | 64% | 39% | 64% | 56% | * | 23% | 33% | 14% | 38% | * |
| Portugal | 63% | 53% | 65% | 61% | * | 26% | 49% | 15% | 37% | * |
| Romania | 66% | 20% | 70% | 51% | * | - | 33% | - | - | |
| Slovak Republic | 64% | 42% | 62% | 53% | * | 20% | 35% | 12% | 36% | * |
| Slovenia | 61% | 51% | 63% | 58% | * | 34% | 45% | 25% | 46% | * |
| Spain | 59% | 37% | 65% | 58% | * | 21% | 32% | 16% | 39% | * |
| Sweden | 76% | 42% | 76% | 74% | | 43% | 39% | 35% | 56% | * |
| United Kingdom | 74% | 38% | 76% | 65% | * | 34% | 33% | 26% | 50% | * |
| United States | 79% | 41% | 79% | 72% | * | 48% | 38% | 40% | 56% | * |

Note: PP stands for predicted probabilities estimated with logit models, GS for global significance, and * means significant at 5%. # "Poor health" means the person has at least one of four deteriorated health indicators (see Table 2.1 for definition of variable). In Chile, the variable is based on three health indicators only. The proportion of people reporting absence from work due to illness in Canada (in the past three months) is not directly comparable with other countries (in the past 12 months). When the definition of a variable is different from EHIS, the country is not included in the average for that variable.
Source: OECD calculations based on national health survey data.

## Detailed results on risk factors

### Annex Table 2.A.3. Descriptive statistics, standardised probabilities and inequality index: overweight among women and men

| | Women | | | | | | Men | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevalence | SP – Low education | SP – High education | GS | SII* | RII* | Prevalence | SP – Low education | SP – High education | GS | SII* | RII* |
| EU28 | 46% | 52% | 35% | | | | 59% | 57% | 53% | | | |
| OECD | 47% | 52% | 36% | | | | 59% | 58% | 53% | | | |
| Total | 47% | 52% | 36% | | | | 60% | 58% | 54% | | | |
| Austria | 40% | 49% | 28% | * | 0.28* | 2.1* | 56% | 55% | 50% | * | 0.12* | 1.2* |
| Belgium | 42% | 49% | 31% | * | 0.33* | 2.4* | 54% | 54% | 51% | * | 0.09* | 1.2* |
| Bulgaria | 47% | 51% | 36% | * | 0.17* | 1.4* | 62% | 57% | 57% | * | -0.02 | 1.0 |
| Canada | 52% | 59% | 49% | * | 0.14* | 1.3* | 65% | 65% | 64% | * | 0.04* | 1.1* |
| Croatia | 48% | 58% | 36% | * | 0.23* | 1.6* | 67% | 59% | 61% | | 0.00 | 1.0 |
| Cyprus | 38% | 46% | 31% | * | 0.20* | 1.6* | 59% | 56% | 59% | | -0.05 | 0.9 |
| Czech Republic | 49% | 53% | 37% | * | 0.20* | 1.4* | 64% | 60% | 54% | | 0.06 | 1.1 |
| Denmark | 40% | 49% | 31% | * | 0.24* | 1.8* | 54% | 55% | 44% | * | 0.21* | 1.5* |
| Estonia | 51% | 57% | 42% | * | 0.19* | 1.5* | 56% | 50% | 52% | | -0.04 | 0.9 |
| Finland | 47% | 51% | 41% | * | 0.16* | 1.4* | 61% | 61% | 56% | | 0.07* | 1.1* |
| France | 41% | 48% | 26% | * | 0.35* | 2.4* | 53% | 53% | 45% | * | 0.13* | 1.3* |
| Germany | 44% | 51% | 33% | * | 0.21* | 1.6* | 59% | 61% | 53% | * | 0.13* | 1.2* |
| Greece | 48% | 52% | 38% | * | 0.26* | 1.7* | 66% | 66% | 58% | * | 0.13* | 1.2* |
| Hungary | 49% | 52% | 39% | * | 0.19* | 1.5* | 61% | 55% | 58% | | -0.01 | 1.0 |
| Iceland | 48% | 52% | 37% | * | 0.20* | 1.5* | 65% | 60% | 59% | | 0.02 | 1.0 |
| Ireland | 48% | 54% | 38% | * | 0.22* | 1.6* | 62% | 62% | 59% | | 0.01 | 1.0 |
| Italy | 36% | 42% | 25% | * | 0.25* | 2.0* | 53% | 55% | 45% | * | 0.13* | 1.3* |
| Latvia | 54% | 55% | 48% | * | 0.10* | 1.2* | 58% | 53% | 58% | | -0.06 | 0.9 |
| Lithuania | 53% | 59% | 44% | * | 0.19* | 1.4* | 58% | 54% | 53% | | 0.05 | 1.1 |
| Luxembourg | 39% | 49% | 24% | * | 0.39* | 2.9* | 55% | 63% | 46% | * | 0.25* | 1.6* |
| Malta | 55% | 57% | 50% | | 0.13* | 1.3* | 66% | 66% | 61% | | 0.06 | 1.1 |
| Netherlands | 45% | 50% | 36% | * | 0.21* | 1.6* | 53% | 53% | 44% | * | 0.13* | 1.3* |
| Norway | 40% | 43% | 33% | * | 0.15* | 1.5* | 57% | 58% | 48% | * | 0.12* | 1.2* |
| Poland | 47% | 49% | 38% | * | 0.16* | 1.4* | 64% | 54% | 59% | * | -0.07* | 0.9* |
| Portugal | 50% | 54% | 32% | * | 0.35* | 2.0* | 57% | 57% | 49% | * | 0.07* | 1.1* |
| Romania | 49% | 52% | 35% | * | 0.16* | 1.4* | 63% | 58% | 57% | * | -0.03 | 1.0 |
| Slovak Republic | 46% | 50% | 37% | * | 0.16* | 1.4* | 62% | 57% | 53% | * | 0.09* | 1.2* |
| Slovenia | 48% | 55% | 30% | * | 0.36* | 2.2* | 65% | 54% | 58% | * | 0.02 | 1.0 |
| Spain | 45% | 53% | 29% | * | 0.38* | 2.3* | 61% | 62% | 51% | * | 0.16* | 1.3* |
| Sweden | 44% | 46% | 32% | * | 0.21* | 1.6* | 55% | 57% | 42% | * | 0.21* | 1.5* |
| United Kingdom | 51% | 58% | 43% | * | 0.19* | 1.4* | 59% | 60% | 53% | * | 0.10* | 1.2* |
| United States | 60% | 63% | 50% | * | 0.24* | 1.5* | 71% | 71% | 70% | * | 0.06* | 1.1* |

Note: SP stands for standardised probabilities (age-standardised) estimated with logit models, GS for global significance, SII for slope index of inequalities, RII for relative index of inequalities and * means significant at 5%. There is no available data for overweight in Chile.
Source: OECD calculations based on national health survey data.

## Annex Table 2.A.4. Descriptive statistics, standardised probabilities and inequality index: smoking among women and men

| | Women | | | | | | Men | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevalence | SP – Low education | SP– High education | GS | SII* | RII* | Prevalence | SP – Low education | SP – High education | GS | SII* | RII* |
| EU28 | 20% | 24% | 13% | | | | 32% | 40% | 20% | | | |
| OECD | 20% | 25% | 11% | | | | 29% | 38% | 18% | | | |
| Total | 20% | 24% | 12% | | | | 31% | 39% | 20% | | | |
| Austria | 28% | 36% | 15% | * | 0.23* | 2.4* | 33% | 42% | 23% | * | 0.24* | 2.3* |
| Belgium | 20% | 28% | 9% | * | 0.25* | 3.5* | 27% | 39% | 11% | * | 0.35* | 3.9* |
| Bulgaria | 28% | 25% | 24% | * | -0.02 | 0.9 | 45% | 52% | 32% | * | 0.24* | 1.7* |
| Canada | 18% | 29% | 13% | * | 0.21* | 3.4* | 22% | 35% | 17% | * | 0.21* | 2.7* |
| Croatia | 26% | 26% | 19% | * | 0.02 | 1.1 | 33% | 40% | 22% | * | 0.19* | 1.8* |
| Cyprus | 19% | 17% | 20% | | -0.09* | 0.6* | 44% | 47% | 35% | | 0.18* | 1.6* |
| Czech Republic | 23% | 31% | 7% | * | 0.21* | 2.7* | 36% | 44% | 22% | * | 0.27* | 2.3* |
| Denmark | 20% | 27% | 13% | * | 0.16* | 2.3* | 23% | 38% | 15% | * | 0.23* | 3.0* |
| Estonia | 20% | 26% | 13% | * | 0.19* | 2.7* | 39% | 54% | 28% | * | 0.33* | 2.5* |
| Finland | 17% | 21% | 9% | * | 0.21* | 3.7* | 23% | 33% | 14% | * | 0.23* | 2.9* |
| France | 25% | 27% | 17% | * | 0.14* | 1.8* | 33% | 38% | 25% | * | 0.18* | 1.8* |
| Germany | 19% | 23% | 10% | * | 0.20* | 2.6* | 25% | 32% | 18% | * | 0.18* | 2.1* |
| Greece | 28% | 27% | 23% | * | -0.02 | 0.9 | 41% | 44% | 34% | * | 0.14* | 1.4* |
| Hungary | 22% | 29% | 10% | * | 0.29* | 3.5* | 34% | 50% | 17% | * | 0.41* | 3.6* |
| Iceland | 18% | 26% | 10% | * | 0.24* | 3.9* | 21% | 31% | 13% | * | 0.24* | 3.4* |
| Ireland | 20% | 28% | 10% | * | 0.27* | 4.6* | 24% | 34% | 14% | * | 0.27* | 3.7* |
| Italy | 18% | 18% | 14% | * | 0.04* | 1.3* | 29% | 32% | 21% | * | 0.17* | 1.8* |
| Latvia | 20% | 26% | 11% | * | 0.20* | 3.0* | 44% | 55% | 26% | * | 0.36* | 2.4* |
| Lithuania | 13% | 14% | 6% | * | 0.13* | 2.8* | 43% | 51% | 19% | * | 0.43* | 3.0* |
| Luxembourg | 18% | 22% | 10% | * | 0.23* | 3.5* | 24% | 33% | 14% | * | 0.25* | 3.1* |
| Malta | 22% | 26% | 12% | * | 0.19* | 2.6* | 28% | 34% | 15% | * | 0.26* | 2.6* |
| Netherlands | 22% | 28% | 13% | * | 0.21* | 2.8* | 30% | 38% | 20% | * | 0.22* | 2.2* |
| Norway | 20% | 30% | 10% | * | 0.26* | 3.8* | 22% | 32% | 12% | * | 0.26* | 3.7* |
| Poland | 21% | 25% | 11% | * | 0.16* | 2.2* | 34% | 43% | 17% | * | 0.29* | 2.4* |
| Portugal | 14% | 13% | 11% | * | -0.04* | 0.8* | 28% | 30% | 16% | * | 0.20* | 2.0* |
| Romania | 13% | 12% | 17% | | -0.07* | 0.5* | 41% | 41% | 32% | | 0.07* | 1.2* |
| Slovak Republic | 22% | 31% | 11% | * | 0.23* | 3.0* | 39% | 47% | 24% | * | 0.32* | 2.4* |
| Slovenia | 22% | 24% | 11% | * | 0.16* | 2.0* | 29% | 35% | 16% | * | 0.23* | 2.4* |
| Spain | 21% | 22% | 16% | * | 0.06* | 1.3* | 31% | 36% | 21% | * | 0.21* | 2.0* |
| Sweden | 16% | 23% | 9% | * | 0.22* | 3.9* | 18% | 24% | 11% | * | 0.17* | 2.6* |
| United Kingdom | 16% | 24% | 8% | * | 0.21* | 4.0* | 19% | 30% | 11% | * | 0.23* | 4.3* |
| United States | 12% | 19% | 7% | * | 0.14* | 3.3* | 17% | 25% | 10% | * | 0.18* | 3.0* |

Note: SP stands for standardised probabilities (age-standardised) estimated with logit models, GS for global significance, SII for slope index of inequalities, RII for relative index of inequalities and * means significant at 5%. There is no available data for smoking in Chile.
Source: OECD calculations based on national health survey data.

## Annex Table 2.A.5. Descriptive statistics, standardised probabilities and inequality index: heavy drinking among women and men

| | Women | | | | | | Men | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevalence | SP – Low education | SP – High education | GS | SII* | RII* | Prevalence | SP – Low education | SP – High education | GS | SII* | RII* |
| EU19/20 | 3% | 3% | 4% | | | | 6% | 8% | 4% | | | |
| OECD | 3% | 3% | 4% | | | | 5% | 8% | 4% | | | |
| Total | 3% | 3% | 3% | | | | 5% | 8% | 4% | | | |
| Austria | 1% | 1% | 2% | | -0.01* | 0.2* | 2% | 2% | 1% | | 0.01 | 2.0 |
| Belgium | 7% | 3% | 8% | * | -0.08* | 0.4* | 7% | 13% | 5% | * | 0.09* | 3.4* |
| Bulgaria | 1% | 1% | 1% | | 0.00 | 1.3 | 2% | 4% | 1% | | 0.05* | 13.4* |
| Canada | 2% | 2% | 2% | * | 0.01* | 1.5* | 4% | 6% | 4% | * | 0.02* | 1.7* |
| Croatia | - | - | - | | | | 3% | 5% | 1% | | 0.04 | 1.1 |
| Cyprus | 1% | 2% | 0% | | 0.03 | 18.5 | 1% | 2% | 0% | | 0.03 | 4.8 |
| Czech Republic | 2% | 2% | 2% | | -0.00 | 0.9 | 4% | 2% | 2% | | 0.02 | 1.7 |
| Denmark | 6% | 7% | 8% | | -0.05* | 0.5* | 6% | 10% | 7% | | 0.01 | 1.1 |
| Estonia | 0% | 1% | 0% | | 0.00 | 3.4 | 2% | 4% | 1% | * | 0.07* | 17.6* |
| Finland | 4% | 6% | 4% | | 0.01 | 1.1 | 6% | 8% | 5% | | 0.00 | 1.0 |
| France | - | - | - | | | | - | - | - | | | |
| Germany | 3% | 2% | 4% | | -0.03* | 0.4* | 4% | 6% | 4% | | 0.02 | 1.5 |
| Greece | 1% | 2% | 1% | | -0.01 | 0.7 | 3% | 4% | 2% | | 0.01 | 1.6 |
| Hungary | 1% | 2% | 1% | | 0.01 | 2.0 | 4% | 9% | 3% | * | 0.08* | 7.1* |
| Iceland | 1% | 1% | 1% | | -0.00 | 0.8 | 1% | 3% | 1% | | 0.02 | 6.5 |
| Ireland | 8% | 5% | 8% | * | -0.02 | 0.8 | 9% | 11% | 8% | | 0.03 | 1.4 |
| Italy | - | - | - | | | | - | - | - | | | |
| Latvia | 2% | 3% | 3% | * | -0.01 | 0.4 | 8% | 12% | 6% | | 0.06* | 2.2* |
| Lithuania | 1% | 9% | 0% | * | 0.06* | 14.7* | 7% | 17% | 3% | * | 0.17* | 9.9* |
| Luxembourg | 4% | 1% | 7% | * | -0.11* | 0.1* | 6% | 8% | 4% | | 0.06* | 2.5 |
| Malta | 2% | 3% | 2% | | -0.00 | 0.9 | 7% | 8% | 6% | | -0.02 | 0.7 |
| Netherlands | - | - | - | | | | - | - | - | | | |
| Norway | 2% | 1% | 2% | | -0.03* | 0.3* | 2% | 2% | 2% | | 0.01 | 1.6 |
| Poland | 2% | 2% | 3% | | -0.01 | 0.4 | 5% | 8% | 5% | | 0.02 | 1.6 |
| Portugal | 2% | 3% | 1% | | 0.00 | 1.0 | 11% | 16% | 8% | * | 0.22* | 6.2* |
| Romania | 2% | 4% | 1% | * | 0.05* | 18.7* | 12% | 16% | 7% | | 0.12* | 2.7* |
| Slovak Republic | 1% | 1% | 1% | | -0.00 | 0.5 | 2% | 8% | 1% | * | 0.08* | 16.3* |
| Slovenia | 1% | 1% | 1% | | 0.01 | 2.5 | 4% | 8% | 1% | | 0.07* | 6.8* |
| Spain | 2% | 2% | 3% | | -0.01 | 0.6 | 5% | 7% | 4% | | 0.04* | 2.0* |
| Sweden | 3% | 1% | 3% | | -0.03 | 0.3 | 2% | 3% | 3% | | 0.01 | 1.3 |
| United Kingdom | 17% | 14% | 21% | | -0.09* | 0.6* | 18% | 19% | 17% | * | 0.02 | 1.1 |

Note: SP stands for standardised probabilities (age-standardised) estimated with logit models, GS for global significance, SII for slope index of inequalities, RII for relative index of inequalities and * means significant at 5%. There is no available data for heavy drinking in Chile, the United States, France, the Netherlands, and Italy. In Croatia, Cyprus, Estonia, Iceland, Luxembourg, it was not possible to control for covariates in the indirect standardisation.
Source: OECD calculations based on national health survey data.

## Detailed results on health status

### Annex Table 2.A.6. Descriptive statistics, standardised probabilities and inequality index: poor self-assessed health and limitations in daily activities

| | Poor self-assessed health | | | | | | Limitations in daily activities | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Prevalence | SP – Low education | SP – High education | GS | SII* | RII* | Prevalence | SP – Low education | SP – High education | GS | SII* | RII* |
| | 32% | 43% | 22% | | | | 30% | 39% | 24% | | | |
| EU28 | 34% | 46% | 24% | | | | 29% | 40% | 24% | | | |
| OECD | 33% | 44% | 23% | | | | 29% | 39% | 23% | | | |
| Total | 32% | 44% | 23% | | | | 28% | 39% | 23% | | | |
| Austria | 22% | 37% | 16% | * | 0.21* | 3.1* | 32% | 41% | 26% | * | 0.17* | 1.7* |
| Belgium | 23% | 34% | 15% | * | 0.27* | 3.5* | 23% | 32% | 16% | * | 0.22* | 2.8* |
| Bulgaria | 34% | 46% | 26% | * | 0.24* | 1.9* | 25% | 38% | 21% | * | 0.21* | 2.2* |
| Canada | 43% | 57% | 38% | * | 0.25* | 1.8* | 19% | 29% | 19% | * | 0.13* | 2.0* |
| Chile | 42% | 49% | 26% | * | 0.21* | 1.7* | 8% | 16% | 6% | * | 0.08* | 3.2* |
| Croatia | 41% | 52% | 30% | * | 0.26* | 1.8* | 34% | 44% | 25% | * | 0.24* | 1.9* |
| Cyprus | 20% | 36% | 14% | * | 0.29* | 4.0* | 22% | 33% | 17% | * | 0.21* | 2.3* |
| Czech Republic | 32% | 46% | 23% | * | 0.27* | 1.9* | 36% | 44% | 28% | * | 0.16* | 1.5* |
| Denmark | 24% | 41% | 18% | * | 0.27* | 2.9* | 37% | 45% | 33% | | 0.11* | 1.3* |
| Estonia | 42% | 52% | 34% | * | 0.23* | 1.7* | 38% | 48% | 33% | | 0.18* | 1.6* |
| Finland | 37% | 49% | 27% | * | 0.30* | 2.1* | 38% | 48% | 30% | * | 0.18* | 1.6* |
| France | 32% | 40% | 22% | * | 0.27* | 2.4* | 26% | 35% | 20% | * | 0.19* | 2.1* |
| Germany | 29% | 41% | 22% | * | 0.22* | 2.2* | 23% | 32% | 18% | * | 0.16* | 2.0* |
| Greece | 26% | 40% | 19% | * | 0.31* | 2.9* | 30% | 41% | 23% | * | 0.25* | 2.1* |
| Hungary | 39% | 53% | 25% | * | 0.38* | 2.7* | 30% | 43% | 22% | * | 0.26* | 2.4* |
| Iceland | 26% | 40% | 15% | * | 0.34* | 3.9* | 26% | 35% | 20% | * | 0.21* | 2.2* |
| Ireland | 17% | 29% | 12% | * | 0.28* | 4.3* | 28% | 39% | 22% | * | 0.23* | 2.1* |
| Italy | 31% | 37% | 22% | * | 0.22* | 2.1* | 27% | 32% | 22% | * | 0.14* | 1.7* |
| Latvia | 51% | 61% | 37% | * | 0.31* | 1.8* | 43% | 51% | 35% | * | 0.19* | 1.5* |
| Lithuania | 52% | 56% | 36% | * | 0.28* | 1.6* | 36% | 49% | 27% | * | 0.28* | 2.0* |
| Luxembourg | 30% | 46% | 17% | * | 0.41* | 4.5* | 36% | 45% | 25% | * | 0.28* | 2.3* |
| Malta | 17% | 25% | 12% | * | 0.26* | 4.3* | 17% | 22% | 15% | | 0.13* | 2.0* |
| Netherlands | 23% | 33% | 17% | * | 0.20* | 2.5* | 29% | 36% | 23% | * | 0.14* | 1.6* |
| Norway | 21% | 33% | 15% | * | 0.23* | 3.2* | 17% | 26% | 11% | * | 0.19* | 3.1* |
| Poland | 38% | 46% | 28% | * | 0.25* | 1.8* | 23% | 33% | 19% | * | 0.15* | 1.8* |
| Portugal | 50% | 57% | 28% | * | 0.48* | 2.5* | 32% | 37% | 25% | * | 0.23* | 1.9* |
| Romania | 28% | 35% | 23% | * | 0.12* | 1.4* | 16% | 23% | 12% | * | 0.07* | 1.5* |
| Slovak Republic | 35% | 49% | 23% | * | 0.37* | 2.6* | 40% | 50% | 30% | * | 0.25* | 1.8* |
| Slovenia | 35% | 45% | 23% | * | 0.29* | 2.4* | 38% | 45% | 31% | * | 0.15* | 1.5* |
| Spain | 29% | 37% | 20% | * | 0.27* | 2.4* | 25% | 32% | 20% | * | 0.16* | 1.8* |
| Sweden | 25% | 35% | 19% | * | 0.16* | 2.0* | 30% | 38% | 25% | | 0.12* | 1.5* |
| United Kingdom | 24% | 41% | 18% | * | 0.26* | 2.6* | 30% | 43% | 26% | * | 0.17* | 1.7* |
| United States | 43% | 60% | 30% | * | 0.35* | 2.2* | 24% | 36% | 22% | * | 0.16* | 1.9* |

Note: SP stands for standardised probabilities (age-sex standardised) estimated with logit models, GS for global significance, SII for slope index of inequalities, RII for relative index of inequalities and * means significant at 5%.
Source: OECD calculations based on national health survey data.

## Annex Table 2.A.7. Descriptive statistics, standardised probabilities and inequality index: multiple chronic conditions

| | Multiple chronic conditions | | | | | |
|---|---|---|---|---|---|---|
| | Prevalence | SP – Low education | SP – High education | GS | SII* | RII* |
| EU28 | 32% | 38% | 27% | | | |
| OECD | 32% | 38% | 27% | | | |
| Total | 31% | 37% | 26% | | | |
| Austria | 34% | 43% | 29% | * | 0.16* | 1.7* |
| Belgium | 28% | 36% | 22% | * | 0.16* | 1.8* |
| Bulgaria | 26% | 34% | 25% | * | 0.09* | 1.4* |
| Canada | 15% | 23% | 15% | * | 0.09* | 1.9* |
| Croatia | 37% | 42% | 29% | * | 0.16* | 1.5* |
| Cyprus | 20% | 32% | 16% | * | 0.20* | 2.5* |
| Czech Republic | 30% | 36% | 27% | * | 0.12* | 1.4* |
| Denmark | 28% | 36% | 23% | * | 0.14* | 1.6* |
| Estonia | 26% | 31% | 25% | | 0.06* | 1.2* |
| Finland | 49% | 51% | 42% | * | 0.12* | 1.2* |
| France | 36% | 39% | 30% | * | 0.12* | 1.4* |
| Germany | 50% | 51% | 45% | * | 0.10* | 1.2* |
| Greece | 26% | 32% | 21% | * | 0.16* | 1.7* |
| Hungary | 37% | 45% | 31% | * | 0.17* | 1.6* |
| Iceland | 37% | 44% | 29% | * | 0.22* | 1.8* |
| Ireland | 24% | 32% | 20% | * | 0.17* | 1.8* |
| Italy | 32% | 35% | 26% | * | 0.13* | 1.5* |
| Latvia | 41% | 43% | 37% | | 0.08* | 1.2* |
| Lithuania | 31% | 38% | 27% | * | 0.13* | 1.4* |
| Luxembourg | 39% | 44% | 28% | * | 0.24* | 1.9* |
| Malta | 23% | 26% | 20% | | 0.09* | 1.4* |
| Netherlands | 28% | 34% | 22% | * | 0.15* | 1.7* |
| Norway | 24% | 31% | 17% | * | 0.18* | 2.1* |
| Poland | 35% | 37% | 32% | * | 0.05* | 1.1* |
| Portugal | 43% | 48% | 34% | * | 0.23* | 1.7* |
| Romania | 18% | 22% | 18% | | 0.00 | 1.0 |
| Slovak Republic | 30% | 42% | 25% | * | 0.21* | 1.9* |
| Slovenia | 41% | 45% | 36% | | 0.10* | 1.3* |
| Spain | 30% | 34% | 23% | * | 0.19* | 1.7* |
| Sweden | 31% | 36% | 27% | | 0.07* | 1.3* |
| United Kingdom | 25% | 34% | 23% | * | 0.12* | 1.5* |
| United States | 18% | 25% | 13% | * | 0.13* | 2.1* |

Note: SP stands for standardised probabilities (age-sex standardised) estimated with logit models, GS for global significance, SII for slope index of inequalities, RII for relative index of inequalities and * means significant at 5%. There is no available data for multiple chronic conditions in Chile.
Source: OECD calculations based on national health survey data.

## Annex Table 2.A.8. Inequality index: income-related health inequalities

| | Poor self-assessed health | | Activity limitation | | Multiple chronic conditions | |
|---|---|---|---|---|---|---|
| | SII* | RII* | SII* | RII* | SII* | RII* |
| Austria | 0.20* | 2.9* | 0.15* | 1.6* | 0.11* | 1.4* |
| Belgium | 0.29* | 3.8* | 0.25* | 3.2* | 0.17* | 1.8* |
| Bulgaria | 0.19* | 1.7* | 0.21* | 2.1* | 0.07* | 1.3* |
| Canada | 0.33* | 2.2* | 0.22* | 3.3* | 0.15* | 2.8* |
| Chile | 0.13* | 2.2* | 0.06* | 2.1* | - | - |
| Croatia | 0.35* | 2.5* | 0.32* | 2.7* | 0.27* | 2.1* |
| Cyprus | 0.22* | 2.6* | 0.20* | 2.2* | 0.16* | 2.0* |
| Czech Republic | 0.24* | 1.8* | 0.16* | 1.4* | 0.10* | 1.3* |
| Denmark | 0.36* | 5.8* | 0.27* | 2.2* | 0.26* | 2.5* |
| Estonia | 0.44* | 4.2* | 0.35* | 3.4* | 0.19* | 2.4* |
| Finland | 0.30* | 2.1* | 0.19* | 1.6* | 0.16* | 1.3* |
| France | 0.31* | 2.9* | 0.22* | 2.4* | 0.14* | 1.5* |
| Germany | 0.25* | 2.4* | 0.17* | 2.2* | 0.11* | 1.3* |
| Greece | 0.20* | 1.9* | 0.14* | 1.5* | 0.10* | 1.4* |
| Hungary | 0.35* | 2.5* | 0.27* | 2.5* | 0.17* | 1.6* |
| Iceland | 0.24* | 2.6* | 0.24* | 2.6* | 0.21* | 1.8* |
| Ireland | 0.02 | 1.1 | 0.05* | 1.1* | 0.05* | 1.2* |
| Italy | 0.19* | 1.9* | 0.14* | 1.7* | 0.11* | 1.4* |
| Latvia | 0.28* | 1.7* | 0.18* | 1.5* | 0.14* | 1.4* |
| Lithuania | 0.16* | 1.3* | 0.23* | 1.8* | 0.14* | 1.5* |
| Luxembourg | 0.43* | 5.8* | 0.29* | 2.4* | 0.25* | 2.0* |
| Malta | 0.21* | 3.4* | 0.14* | 2.2* | 0.12* | 1.6* |
| Netherlands | 0.24* | 2.9* | 0.19* | 1.9* | 0.17* | 1.9* |
| Norway | 0.21* | 2.9* | 0.17* | 2.8* | 0.14* | 1.8* |
| Poland | 0.21* | 1.7* | 0.18* | 2.1* | 0.06* | 1.2* |
| Portugal | 0.33* | 1.9* | 0.20* | 1.8* | 0.15* | 1.4* |
| Romania | 0.09* | 1.3* | 0.03* | 1.2* | -0.01 | 0.9 |
| Slovak Republic | 0.28* | 2.0* | 0.18* | 1.5* | 0.21* | 1.8* |
| Slovenia | 0.34* | 3.3* | 0.23* | 1.9* | 0.16* | 1.5* |
| Spain | 0.29* | 2.7* | 0.19* | 2.0* | 0.17* | 1.6* |
| Sweden | 0.31* | 3.9* | 0.26* | 2.6* | 0.16* | 1.7* |
| United Kingdom | 0.33* | 3.4* | 0.27* | 2.2* | 0.20* | 2.0* |
| United States | 0.37* | 2.3* | 0.25* | 2.8* | 0.18* | 2.8* |

Note: SII for slope index of inequalities, RII for relative index of inequalities, and * means significant at 5%. There is no available data for multiple chronic conditions in Chile.
Source: OECD calculations based on national health survey data.

## Notes

[1] EHIS enquires about the number and duration of absences but the question's formulation is such that results cannot be used to produce a more refined estimate of the loss of productivity due to ill health. Furthermore, they are not comparable with other national health surveys.

[2] Essentially this measure is an increase in labour supply – not an increase in actual employment which would require a structural model.

[3] For a more technical presentation of the indirect standardisation method, see Box 3.1 in Chapter 3. Control variable in the indirect standardisation process include income, marital status, education, labour status, size of household, degree of urbanisation.

[4] The risk of all-cause mortality, and of cancers generally rises with increasing levels of alcohol consumption, and it is important to note that the level of alcohol consumption that minimises health loss is zero (Griswold et al., 2018[48]).

[5] While there are sophisticated methods to reflect the information contained in the categorical self-assessed health status variables (such as generating predictions of an underlying latent variable and rescale these predictions to a 0-1 interval) (O'Donnell et al., 2007[47]), the decision was taken to dichotomise the variable as this was only one of the variables describing health status.

[6] A robustness analysis, which consisted of attributing a rank to each country for its level of inequality (measured by the SII) for each health variables and summing of the three ranks, confirmed the grouping of countries.

# 3 Inequalities in the utilisation of health care services

This chapter turns to the question of whether health systems treat people with comparable needs equally irrespective of their income. It measures income-related inequalities in health care services utilisation, adjusted for needs where relevant, based on national health survey data for 33 EU and OECD countries carried out between 2014 and 2017. It investigates inequalities in doctor visits, hospital admissions, as well as preventive care such as cancer screening, flu vaccination, and dental care. Summary measures of inequality are derived to compare results across the various health care services and countries.

Note by Turkey:
The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

Note by all the European Union Member States of the OECD and the European Union:
The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

## 3.1. Introduction

One of the pathways to improving health and overcoming inequalities is for health systems to ensure access to quality services irrespective of people's socio-economic circumstances. Measuring within and across health systems whether the care received by patients is commensurate to need and of quality presents considerable methodological challenges. As people typically turn to the health system when sick, the volume of services used gives an indication of their ability to access it. However, a more important question is whether people's utilisation is commensurate to their needs. One strategy to answer this question consists in examining whether, for a given health status – a proxy of need – people have a comparable level of utilisation of the health system.

Recognising that no measure of access is perfect, the main question of interest in this chapter is whether systematic differences across socio-economic groups in the level of utilisation of care can be detected within EU and OECD countries. Using micro-level data, Section 3.2 measures the extent to which, within countries, access to health care services (physician and hospital care) varies across people with comparable needs but different income. Section 3.3 explores whether utilisation of preventive services – such as cancer screening, dental care and vaccination- differs across income groups. Section 3.4 concludes with key findings and presents a summary measure of inequalities in health care services utilisation by clustering countries into groups that display comparable levels of inequalities in service utilisation.

The following two chapters (Chapters 4 and 5) will look into complementary aspects of access to care, namely whether inequalities across socio-economic groups exist for unmet needs and the financial protection against the costs of care. Together, these three chapters allow for a comprehensive analysis of the extent to which health systems treat all patient equally regardless of income.

## 3.2. Income-related inequalities exist in the utilisation of some – but not all – health care services across EU and OECD countries

Determining whether access to health care services is similarly distributed within a population irrespective of income requires factoring in health care needs. As shown in Chapter 2, poor health is concentrated among the least well-off in all countries. Consequently, a simple comparison of utilisation across income groups could obscure or underestimate inequalities. Using individual-level data, this section therefore seeks to determine whether, once need is taken into account, within-country patterns of access to care are comparable across income levels, according to a well-established methodology.

More specifically, the analysis reviews patterns of access to GP and specialist consultations as well as hospital admissions. National health survey data from 33 EU and OECD countries are used for this analysis (the 2014 European Health Interview Survey wave 2 for European countries, the Canadian Community Health Survey 2015-16, the Chilean National Socio-Economic Characterization Survey 2017, and the US Medical Expenditure Panel Survey 2016) (see Box 2.2 in Chapter 2 for a brief description). Table 3.1 provides more information about the variables used and the method is detailed in Box 3.1, which also provides a numerical example of the difference between simple and needs-adjusted probabilities highlighting why such an adjustment is necessary.

## Table 3.1. Variables used and coverage of the population to analyse differences in the utilisation of health care services

| | Description of variables and coverage of the population |
|---|---|
| Dependent variables | Doctor visit: Dummy variable describing whether people have visited a doctor in the past 12 months or not (in EHIS this variable is constructed by combining responses on GP and specialists visits). |
| | GP visit: Dummy variable describing whether people have visited a GP in the past 12 months or not. |
| | Frequency of GP visits: Number of GP visits in the past 4 weeks (for only those who visited a GP in the past 12 months) |
| | Specialist visit: Dummy variable describing whether people have visited a specialist in the past 12 months or not. |
| | Frequency of specialist visits: Number of specialist visits in the past 4 weeks (for only those who visited a specialist in the past 12 months) |
| | Hospitalisation: Dummy variable identifying people who had an inpatient hospital admission in the past 12 months, versus those who did not. |
| | Cervical cancer screening: Dummy variable identifying women aged 20-69 who had a Pap Smear test in the past 3 years versus those who did not. |
| | Breast cancer screening: Dummy variable identifying women aged 50-69 who had a mammography in the past 2 years versus those who did not. |
| | Colorectal cancer screening: Dummy variable identifying persons aged 50-74 who had a Faecal Occult Blood Test in the past 2 years or a colonoscopy in the past 10 years versus those who did not. |
| | Dental visit: Dummy variable identifying people who had a dentist visit in the past 12 months versus those who did not. |
| | Flu vaccination: Dummy variable to identify people aged 65 and over who had flu vaccination in the past 12 months versus those who did not. |
| Explanatory variables | Income level: Categorical variable with income quintiles from the lowest income Q1 to the highest income Q5 (accounting for household size). |
| Needs variables | Gender, Age group |
| | Self-assessed health status: Categorical variable with very poor, poor, fair, good or very good health status. |
| | Limitations in daily activities: Categorical variable with severely limited, limited, or not limited. |
| Countries included | 30 European countries (Belgium did not enquire about the number of physician visits in the previous month), Canada, Chile, and the United States. |
| Covered population | The age was restricted to the population over 18 years of age, unless otherwise mentioned for preventive care. |

Note: For general information about national surveys used, please refer to Box 2.2 in Chapter 2. For descriptive statistics, see Annex Table 3.A.1 and Annex Table 3.A.8-9. The description of variables in the above table refers to EHIS used for 30 of the 33 countries studied. The main differences with other national surveys were as follows: the United States survey does not enquire separately about GP and specialists. In Chile, the recall period of physician and dentist visits is 3 months for the probability and the number of visits. In Canada, the recall period for the number of visits is 12 months.
Source: Authors.

## Box 3.1. Estimating need-adjusted utilisation across income groups: Methodology

The method used in this chapter to measure inequalities in health care services utilisation is well established (van Doorslaer and Masseria, 2004[1]; OECD, 2003[2]; O'Donnell et al., 2008[3]).

**Indirect standardisation for health care needs**

Visits to doctors, GPs and specialists, and inpatient hospital admissions are standardised for health care needs, while the probabilities of using preventive care (cancer screening, dental care and flu vaccination) are not, as explained in Section 3.3.

The need for medical care is proxied by age, gender, and health status variables (self-assessed health and activity limitation).

An indirect standardisation is used to predict the probability of use of medical services, adjusted for health care needs in a series of country-specific regressions (O'Donnell et al., 2008[3]). A logistic regression model is used to estimate the probability of the use of each type of health care services and a linear model to estimate the frequency of visit to GPs and specialists. The health regression estimates the following:

$$[1] \quad \boldsymbol{Y_i = \alpha + \beta X_i + \delta Z_i + \varepsilon_i}$$

where Y denotes the dependent variable (e.g. doctor visits of individual in a given period), X a set of need indicator variables including demographic and morbidity variables (age, gender, self-assessed health and activity limitation), and Z a set of non-need control variables (education, marital status, occupational status, income, size of household, urbanisation level, variables used to control for, in order to estimate partial correlations with the need variables), α, β and δ are parameters vectors, and ε an error term.

Estimations are produced for each country. Equation 1 can be used to generate need-predicted, or X-expected, values of Y. $\boldsymbol{Y_i^X}$ represents the amount of medical care an individual i would have received if she/he had been treated as others with the same need characteristics, on average:

$$[2] \quad \mathbf{Y_i^X = \hat{\alpha} + \hat{\beta} X_i + \hat{\delta} \overline{Z}_i}$$

where $\boldsymbol{\overline{Z}}$ refers to the sample mean values.

Estimates of the indirectly needs-standardised utilisation, $\boldsymbol{Y_i^{IS}}$, are then obtained as the difference between actual and x-expected utilisation, plus the sample mean $\boldsymbol{\overline{Y}}$ :

$$[3] \quad \boldsymbol{Y_i^{IS} = Y_i - Y_i^X + \overline{Y}}$$

For each level of income, the value of $\boldsymbol{Y_i^{IS}}$ can be interpreted as the level of health care utilisation one would find if needs were equally distributed across income groups.

**Concentration index**

The concentration index (CI) of health care utilisation measures the degree of inequality across the income distribution. The concentration index of a variable Y can be computed using a simple "convenient covariance" formula:

$$[4] \quad CI = \frac{2 \times cov_w(yi, Ri)}{\mu}$$

where μ is the weighted sample mean of Y, $cov_w$ denotes the weighted covariance and Ri is the (representatively positioned) relative fractional rank of the $i^{th}$ individual in the income distribution. The Stata command concindc is used to calculate the CI and its confidence interval (Chen, 2007[4]).

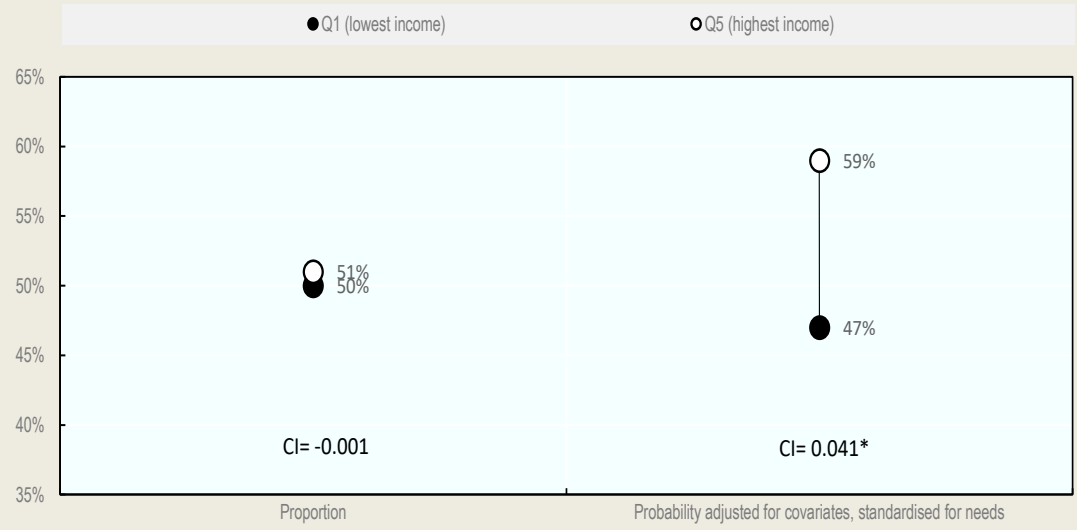
If the concentration index is significantly above (or below) 0, high-income people are more (or less) likely to access medical care services than low-income people. If the 95% confidence intervals of the concentration cross the 0 line, there is no significant inequality.

For preventive services and for unmet needs variables presented in the next chapter, all binary variables, the generalised concentration index (GCI) is used in order to measure absolute inequalities taking into account the overall level of the variable of interest (Yi). The GCI is derived from the standard concentration index by multiplying it with the mean of Yi. As a result, for instance, if two countries have the same level of relative inequality in cancer screening (measured by the CI), the inequality between rich and poor will be deemed higher in the country with the higher prevalence. Using an analogy with the RII and SII discussion in earlier chapters, a similar ratio between the prevalence of the low and high income groups translates into larger absolute differences between these groups when the average is higher. The GCI captures absolute inequalities and also leads to the same ranking of countries irrespective of whether the inequality in having received the service or not having received the service is measured. The Stata command conindex is used to calculate the GCI and its confidence interval (O'Donnell et al., 2016[5]).

**The importance of adjusting for need: a numerical example**

The example below illustrates the effect of the needs-standardisation procedure. Figure 3.1 shows the proportion of the population visiting a specialist in Estonia and the calculated probability after standardisation for health care needs. The observed probabilities of a low or high income person visiting a specialist are virtually identical. However, once the differences in health care needs are taken into account, the probability of a visit increases by 8 percentage points in the highest quintile (Q5), and reduces by 3 percentage point in the lowest quintile (Q1). So while high and low-income people see specialists as frequently, the latter's health status is worse on average. The standardisation erases this difference and shows that, with equal health, a person in the top income quintile has a 12% higher likelihood to see a specialist than one in the bottom quintile. As a result, the concentration index (CI) - which was small and not significant before standardisation- becomes larger, positive and significant after needs-standardisation indicating a distribution in favour of the better-off.

**Figure 3.1. Probability of a specialist visit in Estonia, with and without needs-standardisation**




Note: * means significant at 5%.
Source: OECD estimates based on EHIS-2.

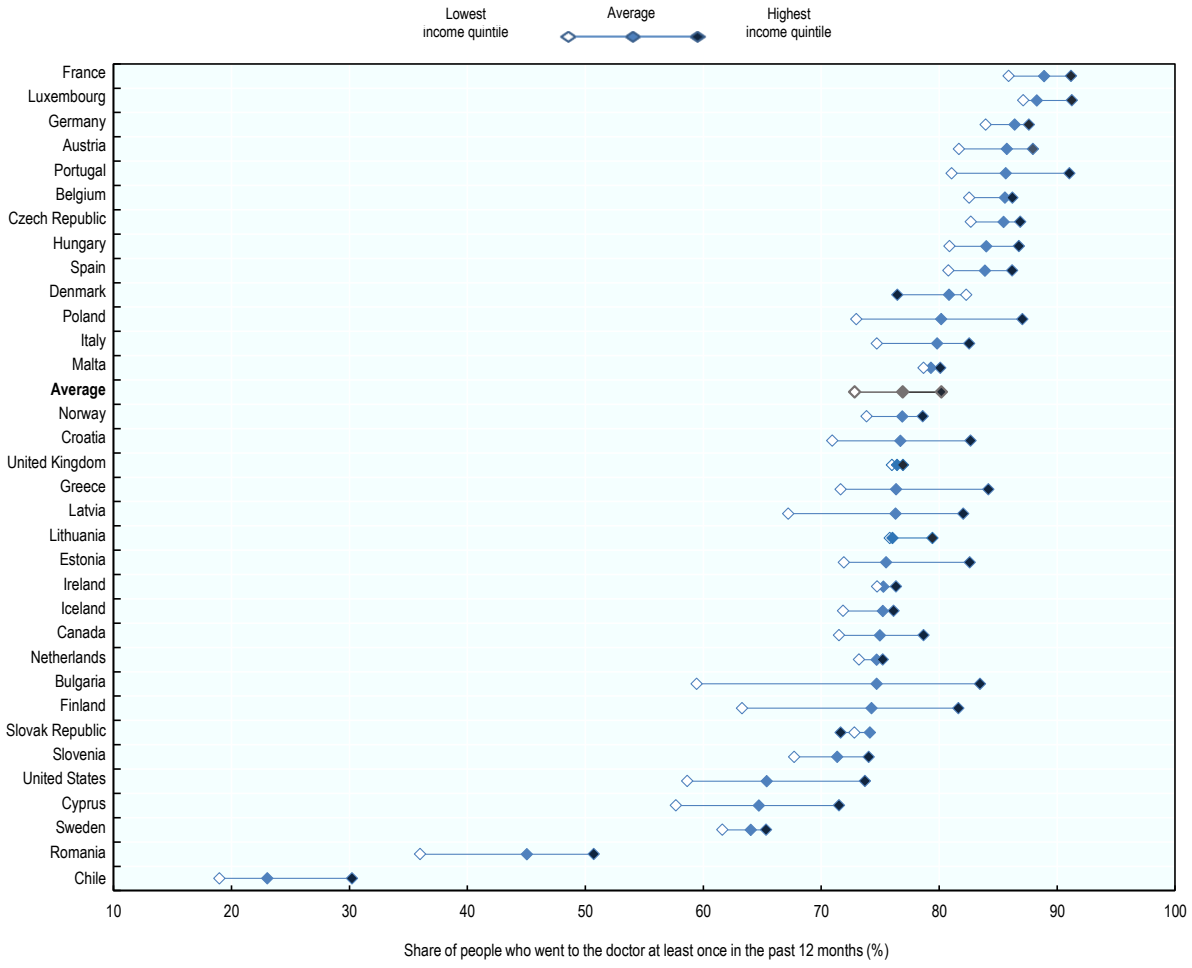
### *3.2.1. In most countries, for a given level of needs, access to the doctor increases with income level but less so for GPs*

*Higher income translates into a higher needs-adjusted probability of seeing a doctor*

In the vast majority of countries, for a comparable level of needs, low-income people are less likely to have seen a physician in the past 12 months than high-income people. The varying levels of predicted probabilities across countries confirm that differences in utilisation patterns remain large even when need is taken into account. The need-standardised probability of reporting a doctor's visit in the past 12 months in the total adult population ranges from 45% in Romania to 89% in France (Chile's much lower average corresponds to a 3 months reporting period). More importantly, the probability of seeing a doctor, for a given level of needs, is higher for those in the highest quintile than in the lowest in all countries except in Denmark, and Slovak Republic (Figure 3.2).

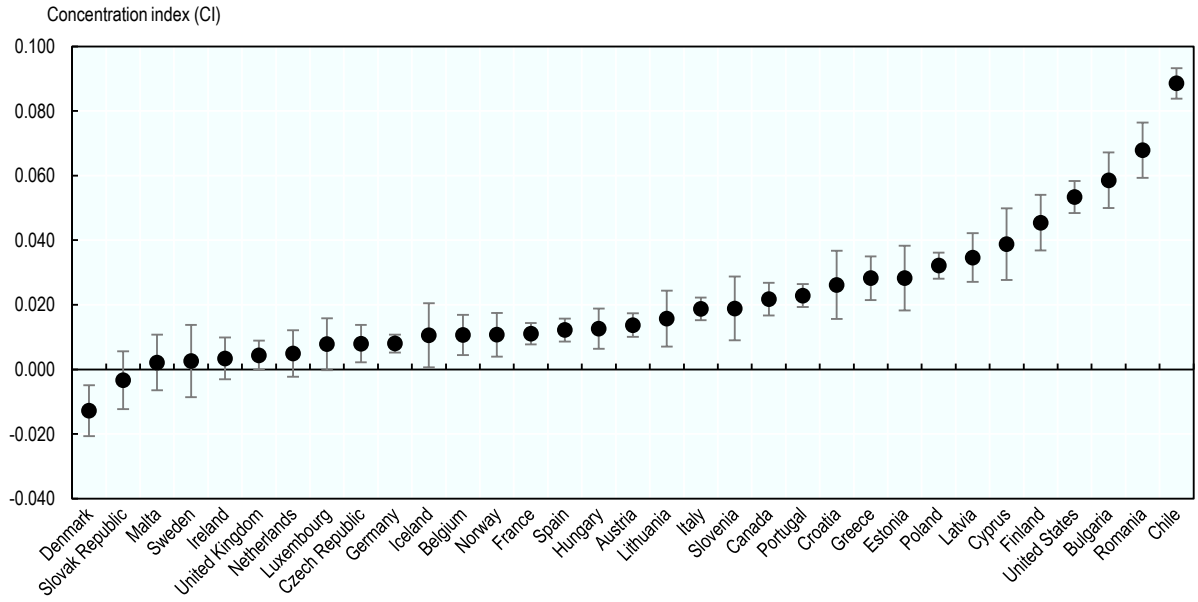
Overall, statistically significant pro-rich inequalities in access to physicians exist in three quarters of EU and OECD countries. The concentration index provides a summary measure of inequalities across the entire population in a country (Figure 3.3). The income-related gradient of inequality is positive and significant in 25 out of 33 countries. In these countries, the higher people's income is, the more likely they are to visit a doctor for the same level of need. However, the gradient is reversed in Denmark. Only seven countries provide the same level of access to their population irrespective of income (the Slovak Republic, Malta, Sweden, Ireland, the United Kingdom, the Netherlands and Luxembourg) as differences are not statistically significant.

## Figure 3.2. Needs-standardised probability of a doctor visit in the past 12 months, by income quintile




Note: A visit to a doctor refers to a visit to a generalist or specialist. In Chile, visits refer to the past 3 months only and Chile is not included in the average. Probabilities are indirectly standardised for health care needs as described in Box 3.1. The confidence intervals are available in Annex Figure 3.A.3 and Annex Figure 3.A.4.
Source: OECD calculations based on national health surveys.

## Figure 3.3. Inequality levels in the probability of a doctor visit

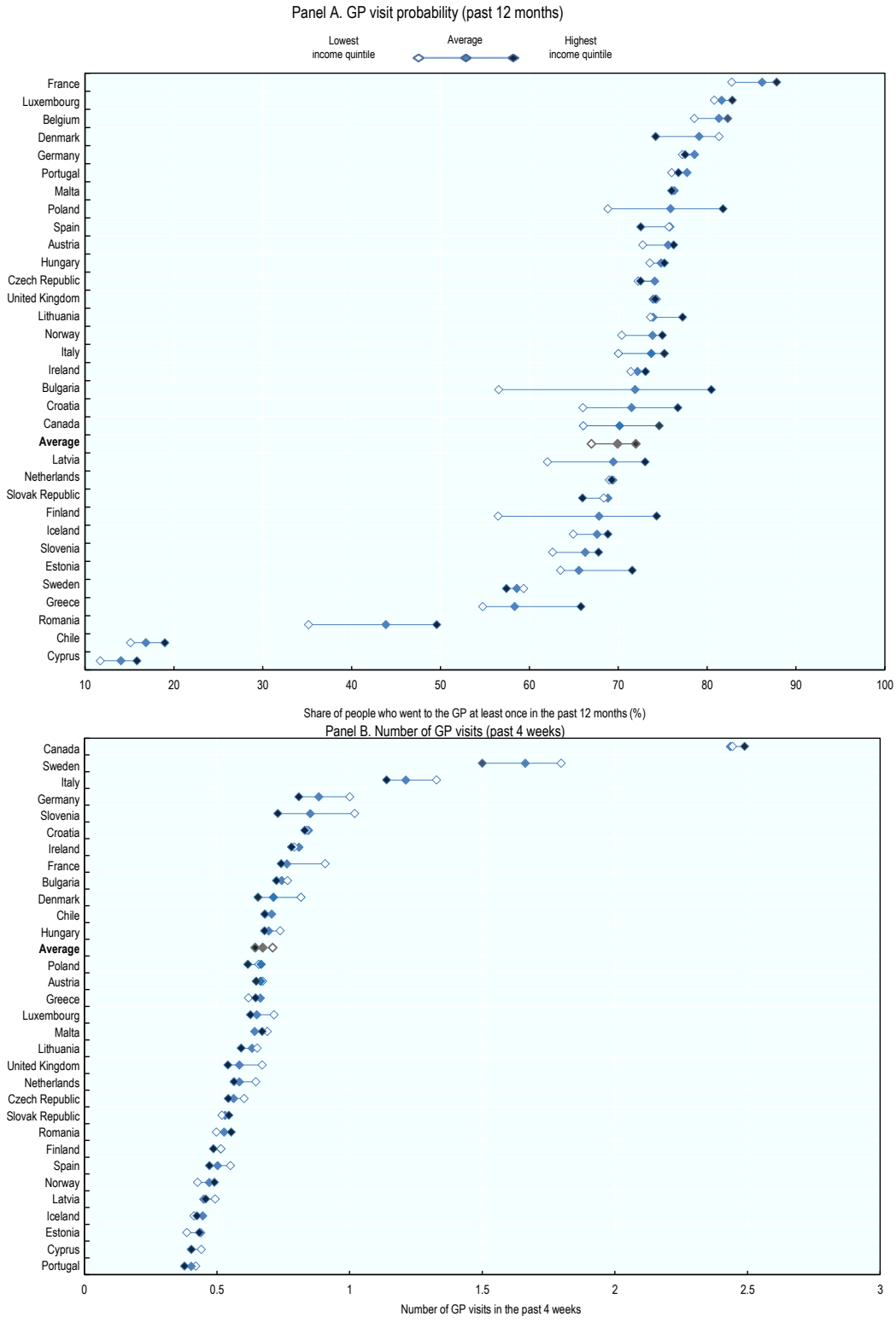



Note: The concentration index measures the degree of income-related inequalities in the probability of a doctor visit across the entire income spectrum. The error bars represent the 95% confidence intervals. If the concentration index is significantly above (below) 0, the variable is disproportionally concentrated among the (low) high-income people and inequalities are pro-rich (pro-poor). If the error bars cross the 0 line, there is no significant inequality.
Source: OECD calculations based on national health surveys.

### *Once access to a GP is secured, low-income patients have at least as many if not more visits to the GP than the rich in all but one country*

Access to primary care services varies by country, and more importantly across income levels. Taking into account differences in needs, the probability of having visited a General Practitioner (GP) in the last 12 months among the total adult population varies across countries, from 14% in Cyprus to 86% in France. It also varies with income: 67% of people with lower-income have seen a GP in the past 12 months compared to 72% in the higher-income group, on average across EU and OECD countries (Figure 3.4, Panel A). The difference between the needs-adjusted probabilities of seeing a GP is more than 10 percentage points in seven countries (Bulgaria, Croatia, Finland, Greece, Latvia, Poland and Romania). The overall gradient of inequality (which takes into account the full distribution of GP visits across income levels, measured by the concentration index) is positive and significant in 17 out of 32 countries. In these countries, the higher people's income is, the more likely they are to visit a GP for the same level of needs. In contrast, Denmark and Spain display inequalities in favour of people with lower income. The 13 remaining countries show no significant inequalities in the probability of having a GP visit across income levels (see concentration index in Annex Table 3.A.2).

## Figure 3.4. Needs-standardised probability and frequency of a GP visit, by income quintile




Note: Chile: visits refer to the past 3 months; Chile excluded from both averages. Canada: 12 months recall period for number of visits; excluded from average number of visits. Probabilities are indirectly standardised for health care needs (Box 3.1). Confidence intervals available in Annex Table 3.A.2 and Annex Table 3.A.3.
Source: OECD calculations based on national health surveys.

In most countries, once they get a first contact with a GP, the poor have the same number of GP visits as the rich, after health care needs are taken into account. Figure 3.4 (Panel B) presents the frequency of GP visits in the past four weeks for people who had a first contact with a GP during the year. In nine countries, for a given level of need, the number of visits to the GP is disproportionally concentrated among those with lower income (the Czech Republic, Denmark, France, Germany, Italy, Portugal, Slovenia, Spain and the United Kingdom) (Annex Table 3.A.3). Conversely, in Romania, the higher the income of people, the greater their number of GP consultations. No significant inequalities in the number of GP visits across income levels can be observed in the remaining 21 countries.

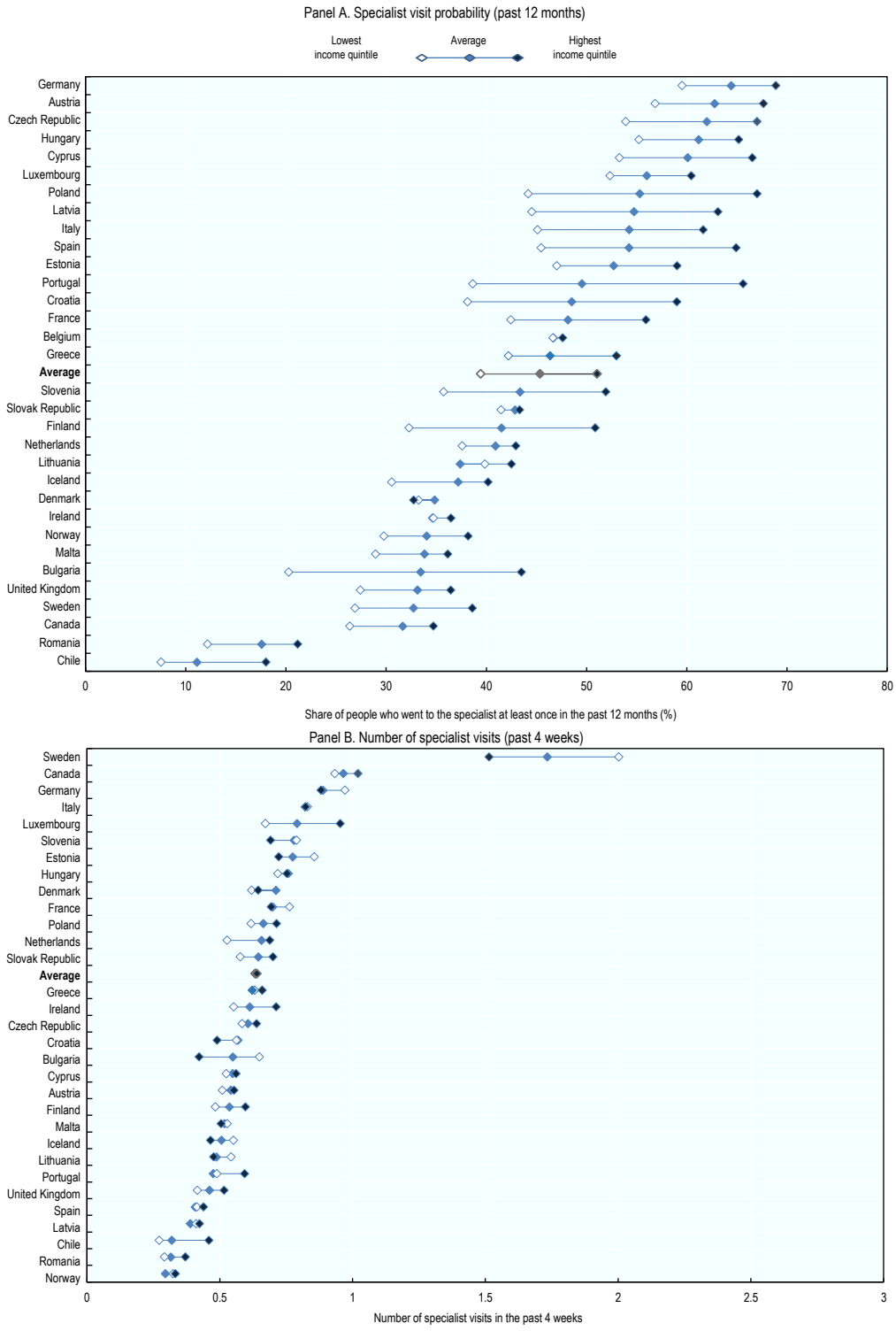
Results on the probability of a medical visit and the conditional number of visits provide complementary information. It is interesting to differentiate the probability of at least one visit in the past year and the number of visits (conditional on the first medical contact), under the assumption that the decision of initiating use is more patient-driven and the decision about continued use more doctor-driven as suggested by Van Doorslaer and Masseria (2004[1]). Results in that study show that the patterns are not identical for these two parts of the utilisation. Overall, in the majority of countries, richer patients are more likely to turn to the system and seek out the services of a physician. On the other hand, the fairly equal distribution of the number of visits across income groups suggests that (if the doctor-driven decision hypothesis was confirmed) the doctor see richer patients as often as poorer patients based on their medical need (and not based on financial conditions). However, this interpretation is only tentative[1].

*The higher people's income, the more likely they are to see a specialist, for a given level of needs, in 29 out of 32 countries*

The probability of visiting a specialist varies across countries, and more importantly, there are inequalities across income levels within countries. The needs-adjusted probability of having visited a specialist in the last 12 months among the total adult population ranges between 18% in Romania and 64% in Germany. In the vast majority of countries, for the same level of needs, the better-off have a higher probability of visiting a specialist than lower-income people (Figure 3.5, Panel A). The overall gradient of inequalities (measured by the concentration index) confirms this finding, and shows significant pro-rich inequalities in 29 countries. Only in three countries (Denmark, Ireland, and the Slovak Republic), access to specialist care is effectively irrespective of people's income level (see concentration index in Annex Table 3.A.4 and Annex Figure 3.A.3). In comparison with GP visits, the probability of a specialist visit shows much larger degrees of income-related inequality in most countries.

Once people get access to specialist care, the poor and the rich have –for the same level of need– the same number of specialist visits in the majority of countries. Figure 3.5 (Panel B) presents the number of specialist visits in the past four weeks for people who had a first contact with a specialist in the past year, once health care needs are taken into account. At population level, in 18 countries, the number of specialists visits is not linked to income once need is factored in. Eleven countries show pro-rich inequalities, where the higher the income, the greater the number of specialist visits for the same level of need. In contrast, in Bulgaria and Sweden the inequality pattern is in favour of the poor (Annex Table 3.A.5, Annex Table 3.A.4).

## Figure 3.5. Needs-standardised probability and frequency of a specialist visit, by income quintile




Note: Chile: visits refer to the past 3 months; Chile is not included in any average. Canada: recall period for the number of visits is 12 months; excluded from average. Probabilities are indirectly standardised for health care needs (Box 3.1). Confidence intervals available in Annex Table 3.A.4 and Annex Table 3.A.5.

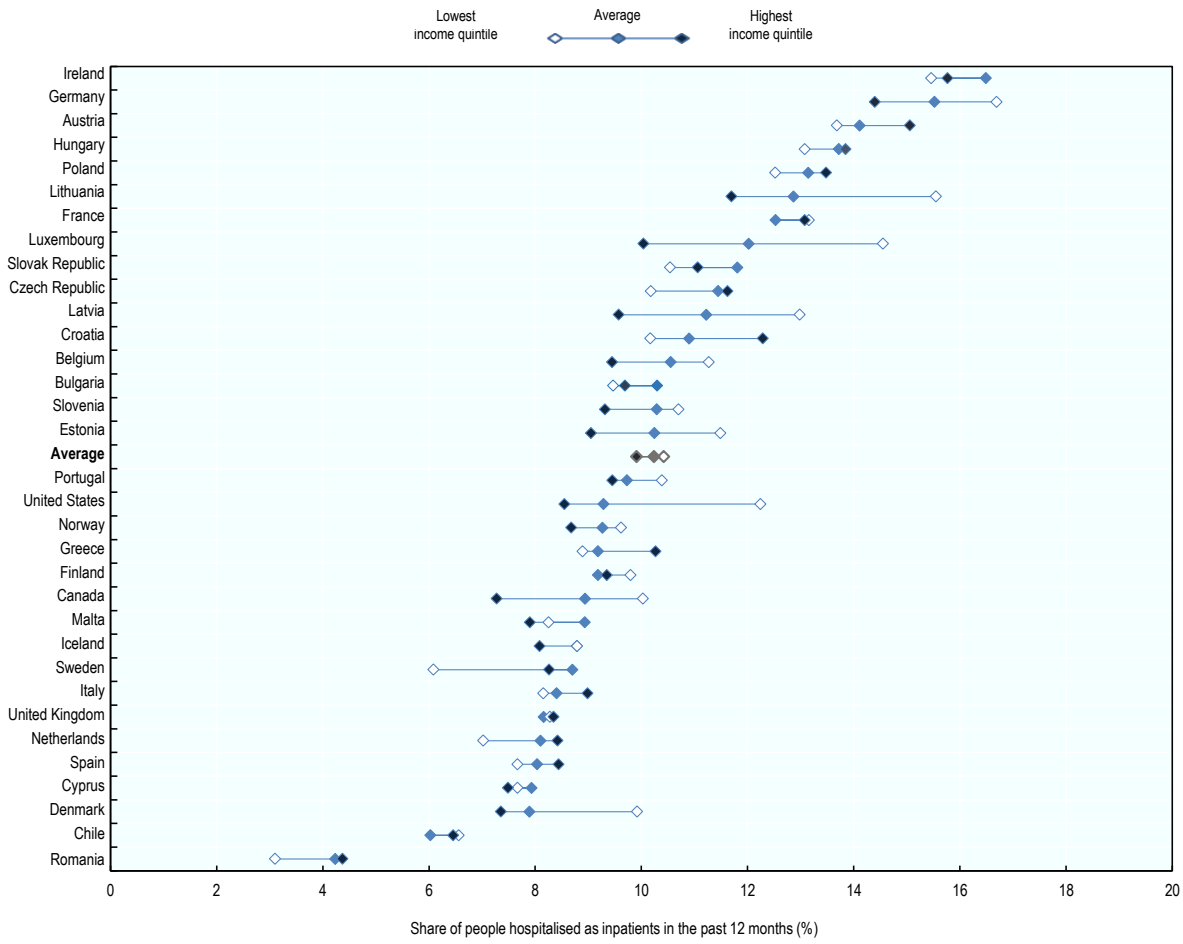
Source: OECD calculations based on national health surveys.

### *3.2.2. Access to hospital services does not depend on income in most countries*

The frequency of hospital admissions also varies considerably across countries. On average, one in ten adults in EU and OECD countries were hospitalised in the 12 months prior to the survey. The needs-standardised probability of having an inpatient hospital admission in the past 12 months ranges between 4% in Romania and 16% in Ireland (Annex Table 3.A.7).

The majority of countries provide equal access to hospital services irrespective of income. On average across EU and OECD countries, the probability of hospital admissions are almost identical for the highest and lowest income quintiles. A handful of countries display fairly large gaps in the predicted probability of admission between the lowest and highest income quintile, which in most cases suggests that people belonging to the lowest income group are more frequently hospitalised. However, across the entire income distribution, the overall gradients of inequality (measured with the concentration index presented in Annex Table 3.A.7) show no income-related differences in hospitalisations in 25 out of 33 countries. In six countries (Canada, Estonia, Luxembourg, the United States, Latvia and Germany) however, the probability of being hospitalised decreases when income rises. Conversely, the better-off are more likely to be admitted into a hospital in Romania and Italy.

## Figure 3.6. Needs-standardised probability of a hospitalisation in the past 12 months, by income quintile




Note: Inpatient hospitalisation only. Probabilities are standardised for health care needs. Confidence intervals are available in Annex Table 3.A.7.
Source: OECD calculations based on national health surveys.

### *3.2.3. Summary of inequalities in utilisation of curative services*

Overall, once adjusted for health care needs, the differences in probabilities of having a doctor, GP or specialist visit for various income groups point to inequalities in access to care in favour of high-income people in most EU and OECD countries although the pattern is less frequent for GP visits (Table 3.2). When it comes to the number of visits to a GP or a specialist and the probability of having a hospital admission, differences between income groups are much less pronounced. For the number of GP consultations, there are more countries where the inequalities in utilisation appear to be pro-poor than countries where the opposite is the case.

**Table 3.2. Summary of inequalities in doctor visits and hospitalisations**

| Once need is taken into account ↓ | Increases as your income becomes higher | Does not differ across income groups | Decreases as your income becomes higher |
|---|---|---|---|
| Probability of doctor visit… → | CZE, DEU, ISL, BEL, NOR, FRA, ESP, HUN, AUT, LTU, ITA, SVN, CAN, PRT, HRV, GRC, EST, POL, LVA, CYP, FIN, USA, BGR, ROU, CHL | SVK, MLT, SWE, IRL, GBR, NLD, LUX | DNK |
| Probability of visit to the GP → | FRA, AUT, NOR, BEL, ITA, LTU, SVN, HRV, EST, CAN, LVA, POL, GRC, CHL, FIN, CYP, BGR, ROU | SWE, SVK, MLT, NLD, DEU, CZE, PRT, GBR, HUN, IRL, LUX, ISL | ESP, DNK |
| Number of visits to the GP → | ROU | LVA, LUX, BGR, SWE, LTU, FIN, HUN, IRL, CHL, NLD, POL, ISL, CYP, AUT, EST, SVK, MLT, GRC, NOR, HRV, CAN | PRT, FRA, CZE, ESP, ITA, DEU, GBR, DNK, SVN |
| Probability of visits to a specialist → | BEL, NLD, LUX, DEU, HUN, LTU, AUT, CZE, CYP, EST, GRC, GBR, NOR, MLT, ISL, CAN, FRA, ITA, SWE, SVN, LVA, ESP, POL, HRV, FIN, PRT, ROU, BGR, CHL | DNK, IRL, SVK | |
| Number of visits to a specialist → | AUT, POL, SVK, NLD, IRL, GBR, FIN, ROU, PRT, LUX, CHL | EST, HRV, ISL, LTU, SVN, MLT, DEU, FRA, DNK, HUN, ITA, CZE, GRC, CYP, ESP, LVA, NOR, CAN | SWE, BGR |
| Probability of hospitalisation → | ITA, ROU | DNK, LTU, BEL, ISL, SVN, PRT, GBR, FRA, CHL, MLT, FIN, IRL, BGR, NOR, HUN, SWE, AUT, POL, CZE, NLD, CYP, ESP, SVK, HRV, GRC | DEU, LVA, USA, LUX, EST, CAN |

Note: Countries are ranked from lowest to highest degree of inequality (based on the Concentration Index).
Source: OECD estimates based on national surveys data.

The findings presented here are generally consistent with previous studies on inequalities in health care utilisation. Previous work by the ECuity project group, which mostly covered Western and Southern Europe, generally found no difference by income level in the probability of a GP visit, for the same level of needs, whereas in the present study the probability of a GP visit disproportionally favours the better off in more than half of the countries. But, aligned with the results of this chapter, the ECuity project group also found that when they started to see a GP, low-income people had more GP visits than high-income people in some countries. High-income people were more likely to see a specialist than low-income people (for

the same level of health care needs), and they were often visiting these specialists more (Doorslaer, Koolman and Jones, 2004[6]; van Doorslaer and Masseria, 2004[1]). Two other studies of European countries also showed pro-rich inequalities in specialist visits once standardised for needs, whereas the picture for GP visits was less clear-cut with some evidence for pro-poor inequalities (Or, Jusot and Yilmaz, 2008[7]; Bago d'Uva, Jones and van Doorslaer, 2009[8]). A range of studies in Latin America found more systematic evidence of a distribution of utilisation favouring the better-off. In Mexico, higher-income people used more curative and hospital care then lower-income people both in 2000 and 2006, with a slight decrease in inequalities in curative care over time (Barraza-Lloréns, Panopoulou and Díaz, 2013[9]). A study on Colombia and Brazil showed that 20 years after the introduction of reforms to improve access, income-related inequalities persisted in both countries (for specialist care in Brazil, and for primary, secondary and emergency care in Colombia) (Garcia-Subirats et al., 2014[10]). In Chile, once adjusted for needs, high-income people had a higher probability and intensity of use of GPs and specialists. Low-income people used emergency care more frequently, partly because of the cost associated with GP and specialist visits. For hospitalisation, high-income people tended to use the system more frequently in Chile, but low-income people stayed longer once they used it. This suggests that people with low income are hospitalised at a later stage, when the medical condition is already more critical. These patterns of inequality appeared to have become more pronounced over time (Vásquez, Paraje and Estay, 2013[11]).

The results presented here suggest that inequalities in the probability of a doctor visit have remained stable since the latest OECD study (Devaux and de Looper, 2012[12]). Comparing 16 countries that are included in both analyses, results show that, for GP visits, the degree of inequality remains constant for 13 countries. Only Finland displays increasing inequalities[2], while they decreased in Denmark and the Slovak Republic. Regarding the probability of a specialist visit, most countries show no change in the degree of inequality over time. However, inequalities decreased in four countries (Belgium, Canada, Demark, and France), whereas Finland, Slovenia, and the United Kingdom display rising inequalities. The present analysis adds 17 new countries to the 2012 study, of which 14 show pro-rich inequalities in GP visits. When it comes to specialist visits, data for all new countries display pro-rich inequalities.

There are various explanations for income-related inequalities in health care services utilisation. First, these inequalities can be driven by financial barriers to health care access, in particular in countries where the depth, breadth and height of coverage are low, or where private health care services play an important role in the health care system (see Chapter 5). Although most EU and OECD countries have achieved universal coverage for at least a core set of services, there are caveats (such as partial set of services covered, role of private health insurance, high cost-sharing) that makes access dependent on income. Second, health literacy and information about health care, such as awareness about availability and efficacy of health care services, may vary across population groups (Goddard and Smith, 2001[13]). People with a better understanding of the health care options and pathways can navigate the health care system more easily. Third, availability and quality of care may contribute to these inequalities as well (Goddard and Smith, 2001[13]). Availability of health care services may vary across population groups, or clinicians may have different propensities to offer treatment to patients from different population groups, even where they have identical needs.

## 3.3. Lower income people use preventive services less frequently

Few would argue against providing preventive and screening services (in relevant target groups) to detect the early onset of diseases to patients irrespective of income. Moreover, given again the higher burden of diseases of disadvantaged people, providing universal access to these services, especially cancer screening, is particularly important for health systems to effectively reduce inequalities in health outcomes.

In most countries, national authorities determine who should have access to screening services (see Box 3.2). They also have dedicated programmes to raise awareness about them. Service use may be free

of cost to the people in the target group and service providers may even be incentivised to ensure their patients receive them. Immunisation against seasonal flu for the elderly and regular dental check-ups are slightly different in nature. Although they may be desirable and are certainly seen as preventive services, they may not be as actively promoted or available free of charge.

This section examines inequalities in the take-up of preventive services across income groups using generalised concentration indices as described in Box 3.1.

### Box 3.2. Recommendations for preventive care

Preventive care such as cancer screening, annual dental check-ups, and flu vaccination are recommended by national health authorities to all people in particular target age groups. National recommendations may vary across countries, but the following rule applies in a number of countries where, most often, cancer screening programmes are delivered free of charge.

- For cervical cancer screening, Pap Smear tests are recommended every 3 years in women aged 20-69.
- For breast cancer screening, mammography is recommended every 2 years in women aged 50-69.
- For colorectal cancer screening, Faecal Occult Blood Tests are recommended every 2 years in adults aged 50-74.
- Flu vaccination is recommended every year for people aged over 65.
- Dental examination is recommended once a year for the general population but more frequently among high-risk individuals (Kay, 1999[14]; ADA, 2013[15]).

As preventive services are mostly targeted to specific populations determined by their age and sex and take up should not depend on health status, inequalities in this section are measured on observed value (and not standardised as for curative services analysed in the previous section).

Although most countries have adopted population-based cancer screening programmes as an effective way for detecting diseases early, some questions emerge about the effectiveness of increasing coverage of mammography screening. This debate is related to recent progress in treatment outcomes and concerns about false-positive results, over-diagnosis and overtreatment. In high-income countries, WHO now recommends organised population-based mammography screening for women aged between 50 and 69, if specific criteria are met such as whether women are able to make an informed decision based on the benefits and risks of mammography screening (WHO, 2014[16]). Hence, increasing coverage of breast cancer screening is not by itself an objective for health care systems.

### *3.3.1. In virtually all countries, cancer screening is less frequently availed by people with lower income*

There are large variations in cancer screening rates across EU and OECD countries and across different types of cancer. The national health surveys inquire whether people in the target groups have received cervical, breast or colorectal cancer screenings. The data on screening rates show:

- Colorectal cancer screening is less common than other types of cancer screening. On average in EU and OECD countries, 71% of targeted women were screened for cervical cancer and 66% for breast cancer, while only 38% people in the target group underwent colorectal cancer screening in the recommended time period.

- The variations in cancer screening rates across countries are large. The rates of cervical cancer screening range from 27% in Romania to 87% in the Czech Republic. For breast cancer, they vary from 7% in Romania to 91% in Sweden, and they stand between 6% in Bulgaria and 74% in Germany for colorectal cancer.
- Screening rates are generally correlated within countries but in some countries coverage performance depends on the type of cancer. Romania, Bulgaria, Estonia, Latvia, Cyprus, Malta and Poland are characterised by fairly low cancer screening rates across the three types of cancer. The opposite is true for France, Austria, Germany, the United States, Luxembourg and the Czech Republic. There are no clear patterns in other countries: Finland has one of the highest screening rate for breast and cervical cancer, but a low one for colon cancer. On the other hand, Denmark's screening rate is much higher than average for colon and breast cancer but below average for cervical cancer.

Overall, across EU and OECD countries, the less well-off have a lower probability of screening for all three types of cancer. For instance, only 61% of poor women had cervical cancer screening compared to 78% of women with high income. Figure 3.7 presents the rate of cervical cancer screening, showing large income-related inequalities in screening uptake in many countries.

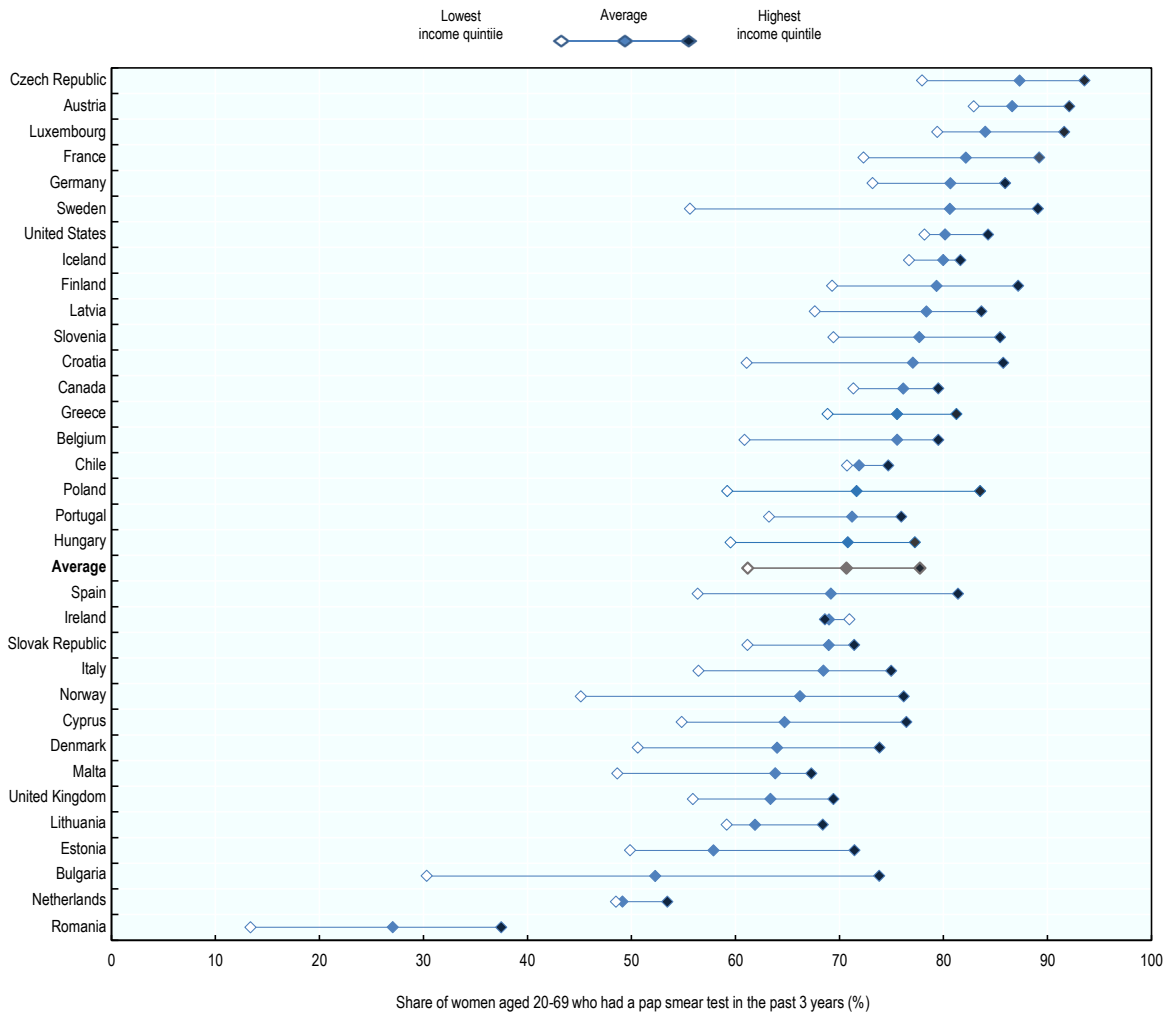
When comparing the richest and poorest income quintiles, only few countries manage to ensure that high- and low-income groups have similar access to cancer screening. The distribution of cervical cancer screening is biased towards higher-income women who are more likely to have cervical cancer screening than lower-income women in virtually all countries. Only in Ireland is the uptake of cervical cancer screening similar across income groups. Comparable patterns of inequality are found in breast and colorectal cancer screening, with richer people having greater access to screening services in the vast majority of countries.

Taking account of the distribution across the entire population, pro-rich inequalities in access to cancer screening exist in the vast majority of EU and OECD countries. Inequalities in favour of people with higher income, measured across the entire population using generalised concentration indices, are significant in 31 countries for cervical cancer screening, and in 26 countries for breast cancer (out of 33). Colorectal cancer screening is somewhat less unequally distributed: the GCIs are positive and significant in 18 countries (out of 32), not significant in 12 and the distribution favours lower income groups in Sweden and the United Kingdom (Annex Table 3.A.8, Annex Table 3.A.9-11). Overall, the less well-off display a lower cancer screening uptake, despite the fact that these programmes are organised and provided at no cost in the majority of countries (Ponti A et al., 2017[17]). Limitations in health literacy among people with lower income may partly explain these inequalities. However, countries could also investigate the design of these programmes; whether the existing communication strategies are effective or whether they need to be tailored to populations groups with different socio-economic backgrounds.

There are no discernible patterns of inequalities in cancer screening, suggesting that efforts to improve utilisation need to be designed on a country-by-country and cancer-by-cancer basis. The correlation between countries' screening rates and inequalities levels for any given cancer is weak. In other words, for a given screening rate, inequalities can be high or low in two different countries[3]. For instance, Denmark and the United States have comparable and relatively high levels of breast cancer screening (82% and 80%) but in the former country, inequalities are very low while the United States belong to the high inequality group. In Spain and Sweden, colorectal cancer screening is mediocre (around 25% for an average across countries of 38%), but the respective levels of inequalities are high in Spain and low in Sweden. Additionally, inequalities in coverage vary across types of cancer within countries. In Greece, for instance, inequalities are high for breast cancer screening, low for cervical and intermediate for colorectal cancers. In Portugal, they are respectively low (breast), intermediate (cervical) and high (colorectal). Overall, for all three types of cancer screening, Cyprus and Hungary display very high inequalities while they are very low in the Netherlands and Ireland.

## Figure 3.7. Prevalence of cervical cancer screening, by income quintile

Share of women aged 20-69 who had a Pap smear test in the past 3 years




Note: Small sample size in Bulgaria (about 300 individuals per income group for this analysis).
Source: OECD calculations based on national health surveys.

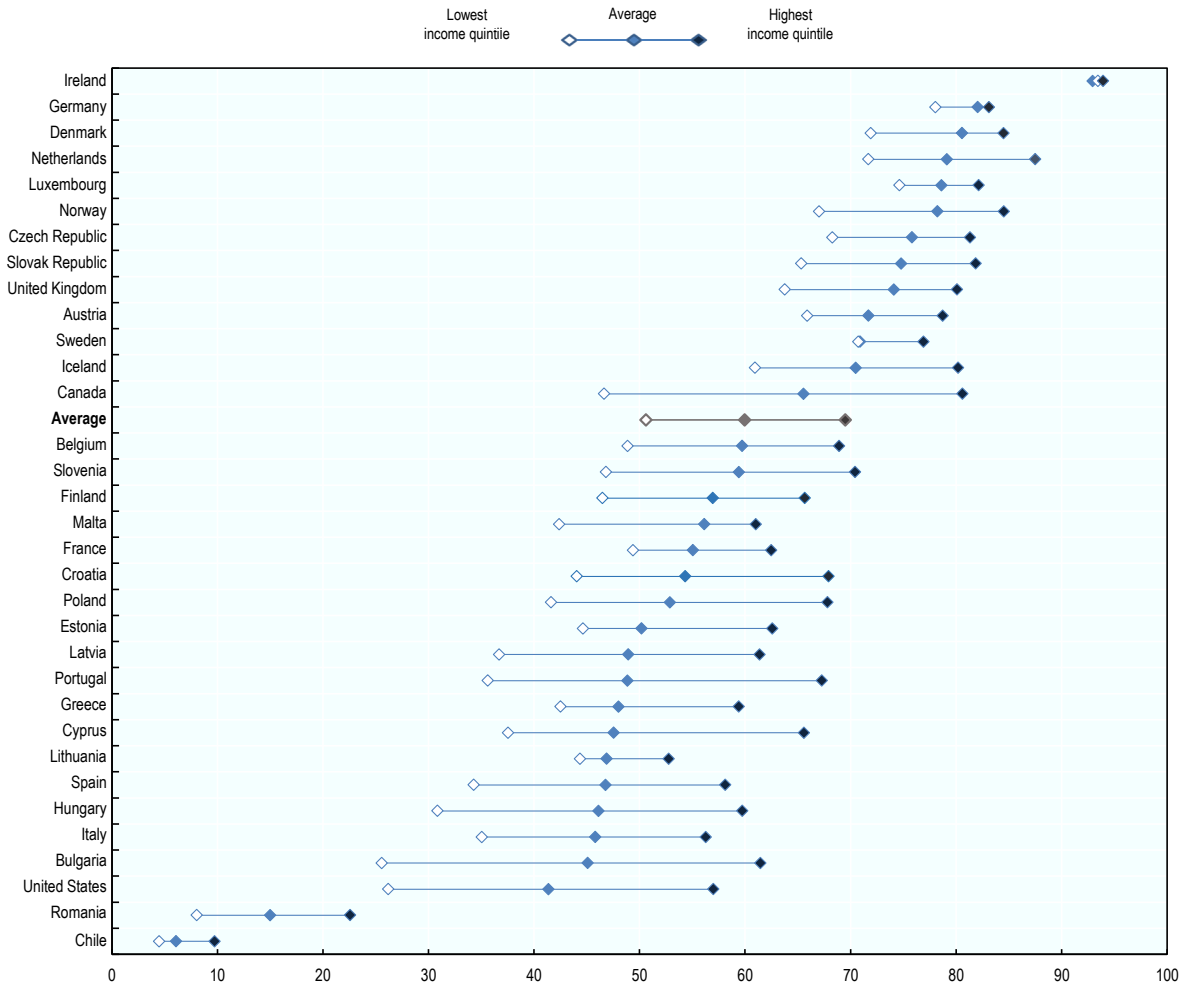
### *3.3.2. All countries, except Ireland, show inequalities in dentist visits in favour of people with higher income*

The proportion of people who see a dentist annually varies by country, and across socio-economic groups within countries. On average, 60% of adults in EU and OECD countries had at least one dental consultation in the 12 months prior to the survey, with this share ranging from 15% in Romania to 93% in Ireland (Figure 3.8). Inequalities across income levels are apparent in all countries and the average difference between low and high income groups is close to 20 percentage points.

Income-related inequalities for dental consultations exist in all but one country and they favour the rich. With the exception of Ireland, the overall gradient of inequality taking into account the full distribution of dental visits across incomes groups (measured with the generalised concentration index) is significant in all countries (Annex Table 3.A.9 and Annex Table 3.A.7). Inequalities are also generally higher than for other preventive services.

These high levels of inequalities may be partially related to the benefit-design of collectively-financed health care goods and services. Unlike hospital care or visits to GP and specialists, the costs of dental care are much less well protected in many EU and OECD countries (see Chapter 5). As a result, poorer people may not be able to afford these services.

## Figure 3.8. Probability of a dental visit in the past 12 months, by income quintile




Note: In Chile, visits refer to the past 3 months and Chile is not included the average.
Source: OECD calculations based on national health surveys.

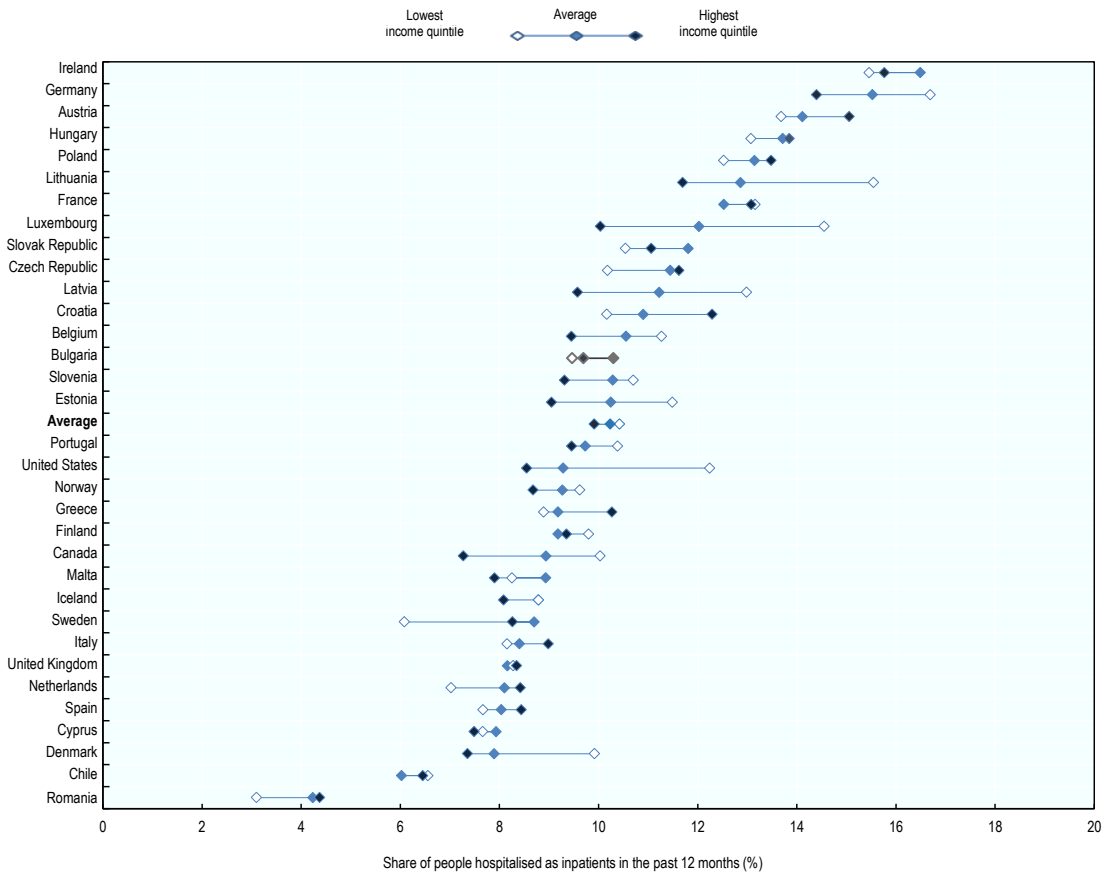
### *3.3.3. Flu vaccination among the elderly seems more evenly distributed among income groups than other preventives services*

The vaccination rates against the flu among people aged 65 and over vary greatly across countries. On average, 39% of the elderly were vaccinated against the flu in the year preceding the survey across 30 EU and OECD countries (Figure 3.9). The variation between countries was more than 90-fold: this share stood as high as 91% in Finland but was as low as 1% in Estonia.

Immunisation against the flu does appear to be more evenly distributed across income levels than other preventive services. Compared to those for other preventive services Figure 3.9 displays relatively small gaps in vaccination rates between the higher and lower income groups, however, due to the relatively

small sample size the probabilities of being immunised represented on the chart are those of the two lowest and two highest income quintiles. The GCIs are generally lower for flu immunisation than other preventive services and they are only significant in 9 out of 30 countries. However, this result is also likely to be partly driven by the relatively small number of people 65 and over in the surveys (which leads to large confidence intervals pictured in Annex Table 3.A.8). The distribution is significantly biased towards the better off in 8 countries while in the Netherlands immunisation is more concentrated among the lower income groups (Annex Table 3.A.9).

## Figure 3.9. Probability of flu vaccination, by income quintile




Note: Due to small sample sizes, the bottom two and the top two income quintiles were grouped.
Source: OECD calculations based on national health surveys.

### *3.3.4. Summary of inequalities in utilisation of preventive services*

Overall, the observed differences in the probabilities of cancer screening, dental care and flu vaccination across income groups suggest inequalities in favour of the better-off in the vast majority of EU and OECD countries. Table 3.3 illustrates whether countries display inequalities in favour of the rich or the poor, or whether no socio-economic differences in access to preventive services can be detected.

Evidence from the health service research literature confirms the findings of mostly pro-rich inequalities in preventive care use. Socio-economic inequalities in breast and cervical cancer screening have been documented in a number of European countries (Devaux and de Looper, 2012[12]; Sirven and Or, 2011[18]). Interestingly, countries which offer nationwide population-based screening programmes have more equal

access to these services, irrespective of income, compared to those countries where cancer screening happens in an opportunistic (and less organised) manner (Palencia et al., 2010[19]). Higher use of dental care utilisation with rising income is also confirmed in a number of studies (Palència et al., 2014[20]; Devaux and de Looper, 2012[12]; Listl, 2011[21]; Tchicaya and Lorentz, 2014[22]).

### Table 3.3. Summary of inequalities in cancer screening, dental care and vaccination

| Looking at preventive care | Increases as your income becomes higher | No significant difference across income groups | Decreases as your income becomes higher |
|---|---|---|---|
| Probability of cervical cancer screening… → | CHL, NLD, USA, CAN, AUT, SVK, GBR, GRC, DEU, BEL, PRT, SVN, LUX, LTU, CZE, HUN, LVA, FRA, MLT, FIN, ITA, EST, HRV, CYP, POL, DNK, ESP, ROU, SWE, NOR, BGR | IRL, ISL | |
| Probability of breast cancer screening… → | IRL, SWE, ROU, FIN, LTU, FRA, GBR, SVN, CHL, CAN, AUT, NOR, SVK, BEL, ESP, POL, USA, CZE, LVA, ITA, HUN, GRC, MLT, HRV, BGR, CYP | DNK, LUX, EST, PRT, DEU, NLD, ISL | |
| Probability of colorectal cancer screening… → | ROU, BGR, DEU, POL, GRC, AUT, LVA, CYP, CAN, LUX, PRT, ISL, FRA, HRV, ESP, SVN, ITA, USA | NOR, EST, NLD, LTU, HUN, IRL, SVK, FIN, DNK, MLT, CZE, BEL | GBR, SWE |
| Probability of dentist visit… → | CHL, DEU, SWE, LUX, DNK, LTU, AUT, FRA, ROU, GRC, CZE, NOR, GBR, SVK, EST, NLD, FIN, MLT, ISL, ITA, BEL, SVN, ESP, HRV, LVA, POL, CYP, HUN, PRT, USA, CAN, BGR | IRL | |
| Probability of flu vaccination… → | LVA, ROU, GRC, HUN, CAN, USA, AUT, POL | MLT, DNK, BEL, DEU, GBR, PRT, FRA, FIN, IRL, ITA, EST, HRV, LTU, NOR, CZE, LUX, ISL, SWE, SVN, SVK, CYP | NLD |

Note: Countries are ranked from lowest to highest degree of inequality using the generalised concentration index.
Source: OECD estimates based on national health survey data.

## 3.4. Synthesis and conclusion

### *3.4.1. With differences in needs factored in, the utilisation of curative and especially preventive services is generally more concentrated among high income groups*

This chapter provides new evidence on the degree of income-related inequalities in health care services utilisation across 33 EU and OECD countries, based on national health survey data. Results clearly show that, consistently, but to an extent that varies across countries, people with different incomes for a given level of needs are not treated equally.

Income-related inequalities exist in the utilisation of some – but not all – curative health care services across EU and OECD countries:

- When controlling for differences in health care needs, people with lower income are less likely to visit a doctor in three quarters of EU and OECD countries.
- Inequalities in access to doctors are for a large part driven by access to specialist care: corrective for need, a person with low-income is 12 percentage points less likely than a person with high income to see a specialist. The summary measures of inequality show that the probability of a specialist visits is disproportionately concentrated among the better-off in all but three counties and the inequalities are larger than for GPs.

- Inequalities are somewhat less pronounced for access to a GP. On average, low-income people are 5 percentage point less likely to see a generalist than high-income people but the gap in the needs-adjusted probability is more than 10 percentage points in seven countries (Bulgaria, Croatia, Finland, Greece, Latvia, Poland and Romania). The summary measure of inequality shows that in a bit more than half of the countries (18 out of 32) the probability of seeing a GP in a year is more concentrated among higher income groups. The reverse is true in Denmark and Spain. In the 12 remaining countries, the summary measure of inequalities is not significant.
- Once access to a GP is secured, low-income patients have at least as many if not more visits to the GP than the rich in all but one country. Similarly, the number of visits to the specialists is equally distributed in the majority of countries.
- An intuitive – if not perfectly rigorous – interpretation of these findings is that lower-income people struggle more to reach the system but that once they have, they are in general likely to receive the same level of care as their higher-income counterparts.
- In the majority of countries, the probability of hospital admission is not associated with income levels.

Despite fairly low inequalities in access to a GP, lower-income people consistently have a lower utilisation of preventive services in virtually all countries suggesting problems in the provision of comprehensive primary care for the entire population.

- In general, access to preventive services varies greatly across countries. For instance, among the three categories of cancer screening reviewed, cervical cancer screening has the highest coverage on average (71%) - yet it ranges from 27% in Romania to 87% in the Czech Republic. Moreover, across OECD and EU countries, four in ten persons above 65 are immunised against the flu but this ratio is as low as 1% in Estonia and as high as 90% in Finland.
- For cervical, breast and colorectal cancers, the probabilities that the low-income people in the target population will have undergone screening in the recommended period is 17, 13 and 6 percentage points lower than that of the high-income people. The summary measures show that inequalities in favour of the rich prevail in the majority of countries but are slightly less systematic or marked for colorectal cancer (which has the lowest coverage rate – 38% of the target population). The data also show that for a given level of screening rate, inequalities can be high or low in two different countries. Within one country, the level of inequality in screening rates for different types of cancer can also vary considerably. Any policy aimed at improving utilisation should therefore factor in the inequality dimension to the extent it is relevant for a particular service in a given country.
- People in the lowest income quintile are nearly 20 percentage points less likely to have seen a dentist in the year. Summary inequalities are very high and detrimental to the poor in all but one country (Ireland). On the other hand, flu immunisation among the elderly is the least unequally distributed service among the preventive activities considered in this chapter, but given the small size of the samples for that population in various countries, these results would need to be confirmed.

The large differences in cancer screening rates between the rich and the poor in some countries suggest that current screening programmes and primary health care models are not succeeding in delivering recommended preventive care to the entire population. A reconfiguration of primary health care delivery towards more patient-centred models may be needed to better reach out to population groups of lower socio-economic status who frequently live in disadvantaged areas (OECD, forthcoming[23]).

### *3.4.2. Some countries are better at ensuring a more equal distribution of various types of care than others*

Considering jointly the degree of income-related inequalities for all types of health care services described above, some general patterns emerge. A clustering aimed at dividing countries in three comparable-sized groups of high, low and intermediate inequalities was elaborated. It is based on the average rank of each country's inequality index across seven services (GP visit, specialist visit, dentist visit, hospitalisation, as well as cervical, breast and colorectal cancer screenings). Countries are clustered into groups reflecting the overall level of inequalities in the utilisation of these preventive and curative services[4]:

- the lowest levels of inequalities are found in Denmark, Estonia, Germany, Ireland, Lithuania, Luxembourg, the Netherlands, the Slovak Republic, Sweden, and the United Kingdom.
- the highest levels of inequalities are observed in Bulgaria, Croatia, Cyprus, Finland, Greece, Italy, Latvia, Poland, Romania, Slovenia, Spain and the United States.
- The intermediate group comprises Austria, Belgium, Canada, the Czech Republic, France, Hungary, Iceland, Malta, Norway and Portugal.

### *3.4.3. Inequalities in the utilisation of care is only one aspect of the access question*

This publication underlines the importance of addressing inequalities in health but this should obviously be done in conjunction with other policies aimed at improving people's health.

To start with, in some circumstances, improving utilisation may be more of a priority than reducing inequalities. This can be particularly relevant for preventive services. It may be more desirable for a country to have high overall cancer screening rates with moderate inequality across socio-economic groups than displaying low screening rates where uptake is distributed evenly. Taking the example of preventive services, Estonia presents a good example: it belongs to the group of countries where inequalities in access to care are lowest – but at the same time, after Romania and Bulgaria and generally on par with Latvia, it has very low coverage for the preventive services analysed in this chapter. In other words, in the context of a health system performance assessment, inequalities and utilisation rates both need to be analysed jointly.

Furthermore, ensuring equality in the utilisation of services is good but not sufficient for modern, person-centred health systems. The fact that people can reach care providers is only one part of the equation: a contact with the system can only translate into better health outcomes if service provision is aligned with best practice. Similarly, if patients are harmed in the process of care, which is not rare, additional health system resources have to be mobilised and, very frequently, both the harm and the induced cost could have been avoided. In other words, for health systems to deliver results, high quality of care is paramount.

Yet, the data used to analyse inequalities in the utilisation of curative services in this chapter does not allow to assess whether the services provided have all been of good quality. Patients reporting a visit to the GP are typically not in a position to evaluate whether the treatment was in line with best practice. So it may be the case that there is an additional dimension of inequality across income groups pertaining to the quality of curative treatment. For preventive service, the situation is a bit different. Service such as cancer screening and flu vaccination are based on clinical recommendation and thus can be used to some extent to measure the quality of health systems. They contribute effectively to better health outcomes. Hence, by looking at access to preventive services, this chapter touches upon the question of health care quality. However, this approach is not comprehensive since quality of care is a multi-dimensional concept[5] that is difficult to assess and country's health systems deliver very unevenly on all dimensions. Although beyond the scope of this report, a more detailed analysis of differences in the quality of the care people received is warranted.

From a policy perspective, the results presented in this chapter open the question of what countries should do to ensure that health care services are accessible by everyone who has needs for health care,

independently of the income level. At the same time, utilisation of services is only one dimension when it comes to measuring access to care and related inequalities. The following two chapters which explore differences in unmet need for care and in the financial protection for health care costs help understanding barriers in access. For example, geographical barriers to care are a reason for higher unmet need among the poor but can also lead to reduced service utilisation. The same is true if lacks in financial coverage exist for disadvantaged population groups. Taken together, these elements provide the ground for a more complete discussion of the policy options to redress inequalities in access to care.

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# Annex 3.A. Additional results on inequalities in utilisation of care

## Utilisation of physician and hospital care

### Annex Table 3.A.1. Descriptive statistics: Physician and hospital care

| | Visited any doctor | Visited any GP | Visited any specialist | Number of GP visits | Number of specialist visits | Hospitalised as inpatient |
|---|---|---|---|---|---|---|
| EU28/27 | 78% | 71% | 47% | 0.70 | 0.65 | 10% |
| OECD | 79% | 73% | 47% | 0.69 | 0.66 | 10% |
| Total | 78% | 70% | 46% | 0.68 | 0.63 | 10% |
| Austria | 86% | 76% | 63% | 0.65 | 0.53 | 15% |
| Belgium | 84% | 79% | 48% | - | - | 10% |
| Bulgaria | 77% | 74% | 32% | 0.75 | 0.56 | 10% |
| Canada♦ | 76% | 71% | 32% | 2.48 | 1.06 | 8% |
| Chile♦ | 22% | 16% | 10% | 0.69 | 0.31 | 5% |
| Croatia | 77% | 72% | 48% | 0.83 | 0.59 | 10% |
| Cyprus | 66% | 14% | 61% | 0.41 | 0.55 | 8% |
| Czech Republic | 86% | 75% | 62% | 0.57 | 0.60 | 12% |
| Denmark | 83% | 80% | 35% | 0.75 | 0.72 | 8% |
| Estonia | 76% | 66% | 51% | 0.47 | 0.71 | 10% |
| Finland | 75% | 68% | 42% | 0.52 | 0.53 | 9% |
| France | 90% | 88% | 49% | 0.78 | 0.70 | 12% |
| Germany | 87% | 79% | 65% | 0.90 | 0.91 | 15% |
| Greece | 77% | 59% | 47% | 0.67 | 0.61 | 9% |
| Hungary | 84% | 76% | 62% | 0.71 | 0.76 | 13% |
| Iceland | 76% | 68% | 37% | 0.45 | 0.50 | 8% |
| Ireland | 78% | 74% | 35% | 0.78 | 0.59 | 16% |
| Italy | 81% | 75% | 55% | 1.23 | 0.84 | 8% |
| Latvia | 77% | 71% | 55% | 0.47 | 0.39 | 11% |
| Lithuania | 76% | 74% | 38% | 0.66 | 0.50 | 13% |
| Luxembourg | 88% | 82% | 54% | 0.70 | 0.81 | 11% |
| Malta | 79% | 76% | 34% | 0.64 | 0.50 | 8% |
| Netherlands | 76% | 70% | 42% | 0.59 | 0.64 | 8% |
| Norway | 77% | 74% | 33% | 0.47 | 0.30 | 9% |
| Poland | 82% | 77% | 56% | 0.65 | 0.64 | 13% |
| Portugal | 84% | 75% | 48% | 0.40 | 0.45 | 9% |
| Romania | 46% | 45% | 17% | 0.53 | 0.31 | 4% |
| Slovak Republic | 75% | 69% | 44% | 0.54 | 0.63 | 12% |
| Slovenia | 72% | 66% | 43% | 0.86 | 0.77 | 11% |
| Spain | 85% | 77% | 55% | 0.50 | 0.37 | 8% |
| Sweden | 66% | 60% | 34% | 1.68 | 1.79 | 9% |
| United Kingdom | 77% | 74% | 34% | 0.59 | 0.46 | 9% |
| United States | 65% | - | - | - | - | 7% |

Note: Proportion of adults who had a medical visit in the past 12 months, except in Chile♦ (in the past 3 months). Number of visits in the past 4 weeks for people who had a medical visit in the past year, except in Canada♦ (number of visits in the past 12 months). They are excluded from the averages as relevant.
Source: OECD calculations based on national health surveys.

## Annex Table 3.A.2. Quintile distribution of the probability of a GP visit after needs-standardisation, inequality index

| | Poorest | Quintile 2 | Quintile 3 | Quintile 4 | Richest | Total | GS | CI |
|---|---|---|---|---|---|---|---|---|
| EU28 | 67 | 69 | 70 | 71 | 72 | 70 | | |
| OECD | 70 | 72 | 73 | 74 | 74 | 73 | | |
| Total | 67 | 69 | 70 | 71 | 72 | 70 | | |
| Austria | 73 | 75 | 75 | 78 | 76 | 76 | * | 0.011* |
| | (71-74) | (74-77) | (74-77) | (77-80) | (75-78) | (75-76) | | |
| Belgium | 79 | 77 | 82 | 84 | 82 | 81 | * | 0.012* |
| | (76-81) | (74-80) | (80-85) | (81-86) | (80-84) | (80-82) | | |
| Bulgaria | 57 | 70 | 74 | 75 | 80 | 72 | * | 0.061* |
| | (54-59) | (67-73) | (72-77) | (73-78) | (78-83) | (71-73) | | |
| Canada | 66 | 68 | 70 | 74 | 75 | 70 | * | 0.026* |
| | (65-68) | (66-69) | (68-71) | (72-76) | (73-76) | (69-71) | | |
| Chile♦ | 15 | 16 | 16 | 17 | 19 | 17 | * | 0.043* |
| | (15-15) | (16-16) | (16-17) | (17-18) | (19-19) | (17-17) | | |
| Croatia | 66 | 72 | 70 | 71 | 77 | 71 | | 0.025* |
| | (63-70) | (68-75) | (67-73) | (68-75) | (73-80) | (70-73) | | |
| Cyprus | 12 | 13 | 15 | 14 | 16 | 14 | | 0.050* |
| | (10-14) | (11-16) | (13-18) | (12-16) | (14-18) | (13-15) | | |
| Czech Republic | 72 | 74 | 77 | 76 | 73 | 74 | | 0.000 |
| | (70-75) | (72-76) | (74-79) | (73-78) | (70-75) | (73-75) | | |
| Denmark | 81 | 81 | 80 | 79 | 74 | 79 | | -0.017* |
| | (79-84) | (79-84) | (78-83) | (77-82) | (71-77) | (78-80) | | |
| Estonia | 64 | 62 | 65 | 65 | 72 | 66 | | 0.025* |
| | (60-67) | (59-65) | (61-68) | (62-69) | (68-75) | (64-67) | | |
| Finland | 57 | 66 | 69 | 72 | 74 | 68 | * | 0.049* |
| | (54-59) | (63-69) | (67-72) | (70-75) | (72-77) | (67-69) | | |
| France | 83 | 86 | 87 | 87 | 88 | 86 | * | 0.011* |
| | (81-84) | (85-87) | (85-88) | (86-89) | (87-89) | (86-87) | | |
| Germany | 77 | 79 | 80 | 79 | 78 | 79 | * | 0.000 |
| | (76-78) | (78-80) | (79-81) | (78-80) | (76-79) | (78-79) | | |
| Greece | 55 | 57 | 57 | 59 | 66 | 58 | | 0.032* |
| | (52-57) | (55-59) | (55-60) | (56-61) | (63-68) | (57-59) | | |
| Hungary | 74 | 76 | 74 | 75 | 75 | 75 | | 0.003 |
| | (71-76) | (74-78) | (71-76) | (73-78) | (73-78) | (74-76) | | |
| Iceland | 65 | 69 | 66 | 70 | 69 | 68 | | 0.010 |
| | (62-68) | (66-72) | (62-69) | (66-73) | (66-72) | (66-69) | | |
| Ireland | 71 | 72 | 73 | 72 | 73 | 72 | | 0.004 |
| | (69-73) | (70-74) | (71-75) | (70-74) | (71-75) | (71-73) | | |
| Italy | 70 | 72 | 75 | 76 | 75 | 74 | * | 0.015 |
| | (69-71) | (71-74) | (74-76) | (74-77) | (74-76) | (73-74) | | |
| Latvia | 62 | 70 | 70 | 72 | 73 | 69 | * | 0.027* |
| | (60-65) | (68-72) | (68-73) | (69-74) | (71-76) | (68-71) | | |
| Lithuania | 74 | 69 | 72 | 77 | 77 | 74 | | 0.016* |
| | (71-76) | (67-72) | (70-75) | (74-79) | (75-80) | (73-75) | | |
| Luxembourg | 81 | 80 | 83 | 81 | 83 | 82 | | 0.005 |
| | (77-84) | (76-83) | (80-86) | (77-84) | (79-86) | (80-83) | | |
| Malta | 76 | 78 | 74 | 78 | 76 | 76 | | -0.001 |
| | (74-78) | (75-80) | (71-77) | (74-81) | (72-80) | (75-78) | | |
| Netherlands | 69 | 70 | 69 | 69 | 69 | 69 | | 0.000 |
| | (66-72) | (67-72) | (67-72) | (67-72) | (67-71) | (68-70) | | |
| Norway | 70 | 74 | 73 | 76 | 75 | 74 | * | 0.011* |
| | (68-73) | (72-77) | (71-75) | (74-78) | (73-77) | (73-75) | | |
| Poland | 69 | 74 | 76 | 78 | 82 | 76 | * | 0.032* |
| | (67-70) | (73-75) | (74-77) | (77-80) | (80-83) | (75-76) | | |
| Portugal | 76 | 78 | 80 | 78 | 77 | 78 | * | 0.002 |

| | Poorest | Quintile 2 | Quintile 3 | Quintile 4 | Richest | Total | GS | CI |
|---|---|---|---|---|---|---|---|---|
| | (75-77) | (76-79) | (78-81) | (77-80) | (75-78) | (77-78) | | |
| Romania | 35 | 40 | 44 | 49 | 50 | 44 | * | 0.068* |
| | (34-37) | (39-42) | (43-46) | (47-50) | (48-51) | (43-45) | | |
| Slovak Republic | 68 | 70 | 71 | 69 | 66 | 69 | | -0.008 |
| | (66-71) | (68-73) | (69-74) | (66-71) | (63-69) | (68-70) | | |
| Slovenia | 63 | 65 | 67 | 70 | 68 | 66 | | 0.019* |
| | (60-66) | (62-67) | (64-70) | (67-73) | (65-71) | (65-68) | | |
| Spain | 76 | 77 | 78 | 76 | 73 | 76 | * | -0.008* |
| | (74-77) | (76-79) | (76-79) | (75-77) | (71-74) | (75-76) | | |
| Sweden | 59 | 61 | 60 | 56 | 57 | 59 | | -0.012 |
| | (56-62) | (58-63) | (57-63) | (53-59) | (55-60) | (57-60) | | |
| United Kingdom | 74 | 73 | 72 | 75 | 74 | 74 | | 0.002 |
| | (73-76) | (72-74) | (71-74) | (74-77) | (73-76) | (73-75) | | |

Notes: Probabilities are expressed in percentages and indirectly standardised for need controlling for marital status, income, education, occupational status, income size of household and urbanisation level. GS refers to the "Global Significance" of the "income" variable in the regression used for the indirect standardisation. The star (*) denotes significant at 5%. CI means concentration index.
♦ In Chile, visits refer to the past 3 months, Chile is not included in average.
Source: OECD calculations based on national health surveys.

## Annex Table 3.A.3. Quintile distribution of the number of GP visits after needs-standardisation, inequality index

| | Poorest | Quintile 2 | Quintile 3 | Quintile 4 | Richest | Total | GS | CI |
|---|---|---|---|---|---|---|---|---|
| EU27 | 0.73 | 0.70 | 0.70 | 0.66 | 0.66 | 0.69 | | |
| OECD | 0.72 | 0.70 | 0.69 | 0.65 | 0.65 | 0.68 | | |
| Total | 0.71 | 0.68 | 0.68 | 0.65 | 0.64 | 0.67 | | |
| Austria | 0.67 | 0.66 | 0.65 | 0.69 | 0.65 | 0.66 | | 0.000 |
| | (0.61-0.73) | (0.61-0.7) | (0.61-0.69) | (0.65-0.74) | (0.6-0.7) | (0.64-0.69) | | |
| Bulgaria | 0.77 | 0.82 | 0.76 | 0.69 | 0.72 | 0.74 | | -0.022 |
| | (0.67-0.86) | (0.73-0.9) | (0.69-0.83) | (0.63-0.75) | (0.66-0.79) | (0.71-0.78) | | |
| Canada♦ | 2.44 | 2.46 | 2.40 | 2.38 | 2.49 | 2.43 | | -0.000 |
| | (2.28-2.6) | (2.32-2.6) | (2.26-2.54) | (2.27-2.5) | (2.36-2.61) | (2.37-2.5) | | |
| Chile♦ | 0.68 | 0.79 | 0.70 | 0.68 | 0.68 | 0.71 | | -0.012 |
| | (0.61-0.75) | (0.71-0.86) | (0.63-0.77) | (0.62-0.75) | (0.62-0.74) | (0.68-0.74) | | |
| Croatia | 0.84 | 0.69 | 0.93 | 0.92 | 0.83 | 0.85 | | 0.018 |
| | (0.68-1) | (0.6-0.78) | (0.77-1.09) | (0.79-1.05) | (0.73-0.93) | (0.79-0.9) | | |
| Cyprus | 0.44 | 0.4 | 0.34 | 0.43 | 0.4 | 0.4 | | -0.006 |
| | (0.33-0.55) | (0.31-0.49) | (0.26-0.43) | (0.34-0.53) | (0.32-0.49) | (0.36-0.44) | | |
| Czech Republic | 0.6 | 0.58 | 0.61 | 0.5 | 0.54 | 0.56 | * | -0.030* |
| | (0.53-0.68) | (0.52-0.64) | (0.54-0.69) | (0.45-0.55) | (0.49-0.59) | (0.53-0.59) | | |
| Denmark | 0.82 | 0.8 | 0.68 | 0.65 | 0.66 | 0.71 | | -0.051* |
| | (0.65-0.99) | (0.7-0.89) | (0.61-0.76) | (0.59-0.72) | (0.59-0.72) | (0.67-0.76) | | |
| Estonia | 0.39 | 0.49 | 0.47 | 0.41 | 0.43 | 0.44 | | 0.001 |
| | (0.32-0.46) | (0.41-0.57) | (0.4-0.55) | (0.34-0.47) | (0.35-0.52) | (0.4-0.47) | | |
| Finland | 0.52 | 0.55 | 0.53 | 0.5 | 0.49 | 0.51 | | -0.017 |
| | (0.44-0.59) | (0.46-0.63) | (0.47-0.58) | (0.44-0.56) | (0.43-0.54) | (0.49-0.54) | | |
| France | 0.91 | 0.68 | 0.76 | 0.75 | 0.74 | 0.76 | * | -0.025* |
| | (0.85-0.97) | (0.63-0.72) | (0.71-0.81) | (0.66-0.84) | (0.67-0.81) | (0.73-0.79) | | |
| Germany | 1.00 | 0.92 | 0.86 | 0.83 | 0.81 | 0.88 | * | -0.043* |
| | (0.95-1.05) | (0.88-0.97) | (0.83-0.9) | (0.8-0.87) | (0.77-0.85) | (0.87-0.9) | | |
| Greece | 0.62 | 0.67 | 0.77 | 0.65 | 0.65 | 0.66 | | 0.007 |
| | (0.54-0.7) | (0.61-0.74) | (0.7-0.84) | (0.59-0.71) | (0.59-0.7) | (0.63-0.69) | | |

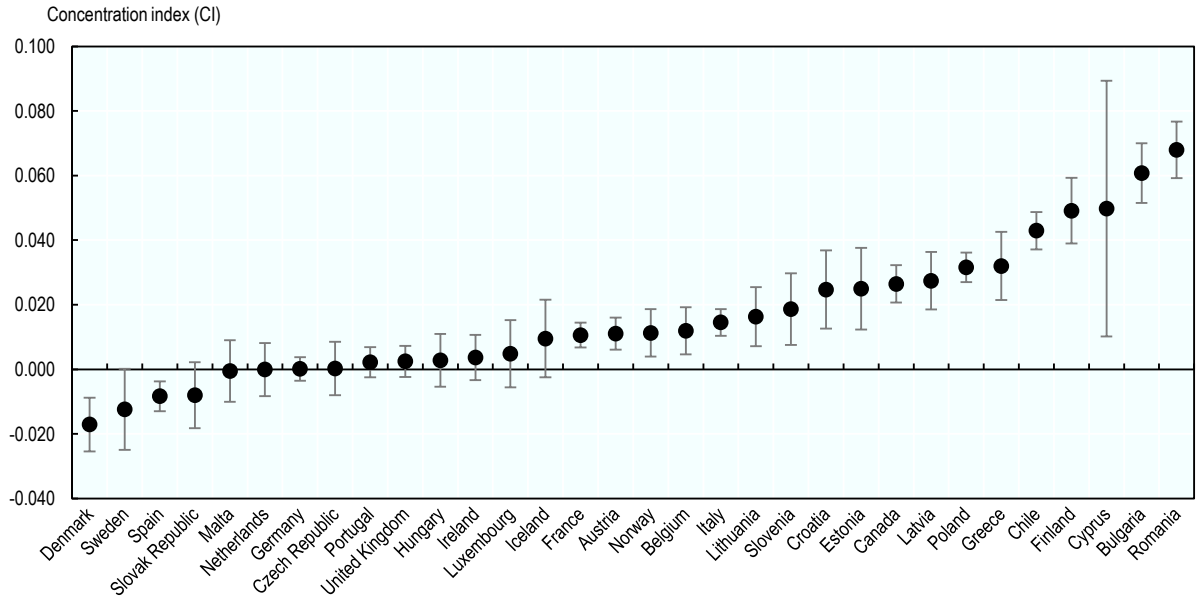
| | Poorest | Quintile 2 | Quintile 3 | Quintile 4 | Richest | Total | GS | CI |
|---|---|---|---|---|---|---|---|---|
| Hungary | 0.74 | 0.68 | 0.72 | 0.66 | 0.68 | 0.7 | | -0.016 |
| | (0.67-0.81) | (0.62-0.74) | (0.64-0.79) | (0.58-0.73) | (0.6-0.76) | (0.66-0.73) | | |
| Iceland | 0.41 | 0.5 | 0.45 | 0.44 | 0.42 | 0.45 | | -0.007 |
| | (0.33-0.5) | (0.43-0.57) | (0.38-0.53) | (0.38-0.5) | (0.37-0.48) | (0.41-0.48) | | |
| Ireland | 0.79 | 0.9 | 0.81 | 0.77 | 0.78 | 0.81 | | -0.015 |
| | (0.71-0.87) | (0.82-0.98) | (0.75-0.88) | (0.7-0.84) | (0.72-0.84) | (0.78-0.84) | | |
| Italy | 1.33 | 1.31 | 1.18 | 1.12 | 1.14 | 1.21 | * | -0.036* |
| | (1.27-1.39) | (1.25-1.36) | (1.13-1.23) | (1.08-1.17) | (1.09-1.19) | (1.19-1.24) | | |
| Latvia | 0.49 | 0.46 | 0.45 | 0.39 | 0.46 | 0.45 | | -0.024 |
| | (0.44-0.54) | (0.42-0.5) | (0.41-0.5) | (0.36-0.43) | (0.41-0.5) | (0.43-0.47) | | |
| Lithuania | 0.65 | 0.65 | 0.65 | 0.63 | 0.59 | 0.63 | | -0.018 |
| | (0.6-0.71) | (0.58-0.71) | (0.58-0.71) | (0.56-0.69) | (0.54-0.64) | (0.61-0.66) | | |
| Luxembourg | 0.72 | 0.63 | 0.66 | 0.61 | 0.63 | 0.65 | | -0.023 |
| | (0.59-0.84) | (0.53-0.72) | (0.58-0.75) | (0.53-0.7) | (0.55-0.7) | (0.61-0.69) | | |
| Malta | 0.69 | 0.59 | 0.58 | 0.70 | 0.67 | 0.64 | | 0.003 |
| | (0.63-0.75) | (0.53-0.66) | (0.52-0.65) | (0.6-0.8) | (0.57-0.77) | (0.61-0.68) | | |
| Netherlands | 0.65 | 0.52 | 0.6 | 0.6 | 0.56 | 0.58 | | -0.010 |
| | (0.54-0.75) | (0.46-0.59) | (0.51-0.69) | (0.55-0.65) | (0.51-0.61) | (0.55-0.62) | | |
| Norway | 0.43 | 0.5 | 0.46 | 0.48 | 0.49 | 0.47 | | 0.017 |
| | (0.38-0.48) | (0.44-0.55) | (0.41-0.5) | (0.43-0.52) | (0.45-0.54) | (0.45-0.49) | | |
| Poland | 0.66 | 0.67 | 0.69 | 0.7 | 0.62 | 0.67 | * | -0.008 |
| | (0.62-0.69) | (0.64-0.71) | (0.65-0.72) | (0.67-0.73) | (0.59-0.65) | (0.65-0.68) | | |
| Portugal | 0.42 | 0.41 | 0.4 | 0.4 | 0.38 | 0.4 | | -0.019* |
| | (0.39-0.45) | (0.39-0.44) | (0.37-0.43) | (0.38-0.43) | (0.35-0.4) | (0.39-0.41) | | |
| Romania | 0.5 | 0.51 | 0.55 | 0.51 | 0.55 | 0.53 | * | 0.017* |
| | (0.46-0.53) | (0.48-0.54) | (0.52-0.58) | (0.49-0.54) | (0.53-0.58) | (0.51-0.54) | | |
| Slovak Republic | 0.52 | 0.53 | 0.56 | 0.5 | 0.55 | 0.53 | | 0.002 |
| | (0.46-0.57) | (0.48-0.58) | (0.51-0.62) | (0.44-0.55) | (0.46-0.63) | (0.5-0.56) | | |
| Slovenia | 1.02 | 0.97 | 0.8 | 0.68 | 0.73 | 0.85 | * | -0.082* |
| | (0.84-1.2) | (0.84-1.1) | (0.7-0.9) | (0.6-0.75) | (0.65-0.81) | (0.8-0.91) | | |
| Spain | 0.55 | 0.51 | 0.51 | 0.47 | 0.47 | 0.5 | * | -0.032* |
| | (0.51-0.59) | (0.48-0.54) | (0.48-0.54) | (0.44-0.49) | (0.45-0.5) | (0.49-0.52) | | |
| Sweden | 1.8 | 1.62 | 1.75 | 1.65 | 1.5 | 1.66 | | -0.020 |
| | (1.61-1.99) | (1.43-1.82) | (1.55-1.95) | (1.51-1.79) | (1.37-1.63) | (1.58-1.74) | | |
| United Kingdom | 0.67 | 0.61 | 0.57 | 0.54 | 0.54 | 0.58 | | -0.044* |
| | (0.63-0.71) | (0.57-0.65) | (0.54-0.61) | (0.51-0.57) | (0.51-0.57) | (0.57-0.6) | | |

Notes: The number of visits over the past 4 weeks is indirectly standardised for need controlling for marital status, income, education, occupational status, income, size of household and urbanisation level. GS refers to the "Global Significance" of the "income" variable in the regression used for the indirect standardisation. The star (*) denotes significant at 5%. CI means concentration index.

♦ In Chile (Canada), visits refer to the past 3 (12) months, Chile (Canada) is not included in average.

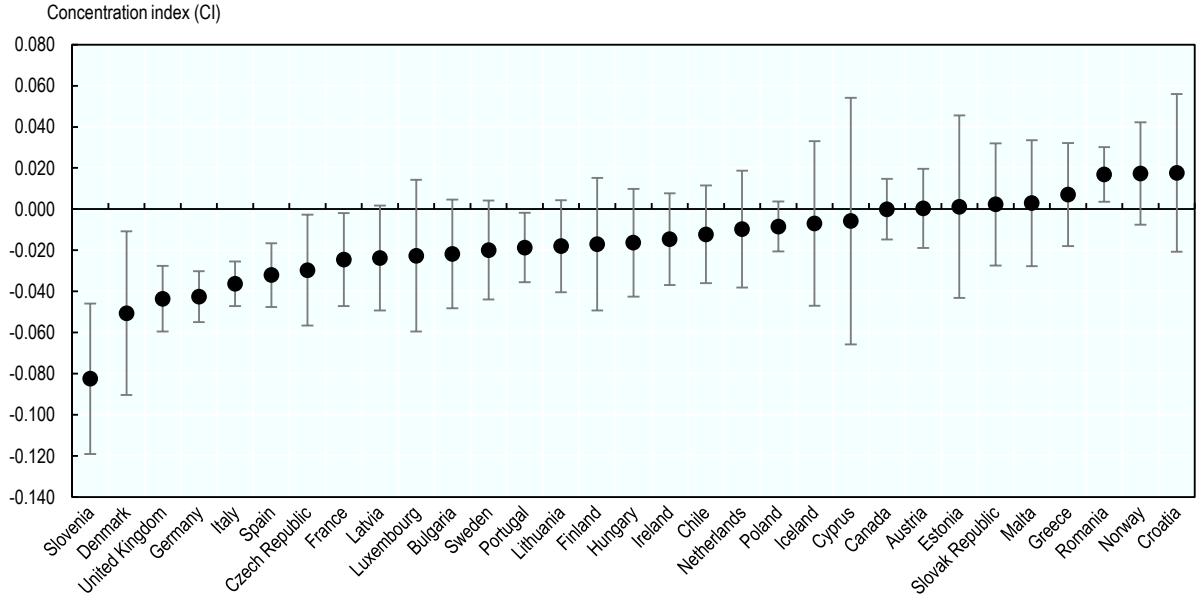
Source: OECD calculations based on national health surveys.

## Annex Figure 3.A.1. Inequality index for the probability of a GP visit after needs-standardisation




Note: The concentration index measures the degree of income-related inequalities in the probability of a GP visit. The error bars represent the 95% confidence intervals. If the concentration index is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality.
Source: OECD calculations based on national health surveys.

## Annex Figure 3.A.2. Inequality index for the number of GP visits after needs-standardisation




Note: The concentration index measures the degree of income-related inequalities in the number of GP visits. The error bars represent the 95% confidence intervals. If the concentration index is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality.
Source: OECD calculations based on national health surveys.

## Annex Table 3.A.4. Quintile distribution of the probability of a specialist visit after needs-standardisation, inequality index

| | Poorest | Quintile 2 | Quintile 3 | Quintile 4 | Richest | Total | GS | CI |
|---|---|---|---|---|---|---|---|---|
| EU28 | 41 | 44 | 47 | 49 | 52 | 47 | | |
| OECD | 41 | 44 | 47 | 49 | 52 | 47 | | |
| Total | 39 | 43 | 45 | 47 | 51 | 45 | | |
| Austria | 57 | 61 | 64 | 65 | 68 | 63 | * | 0.032* |
| | (55-59) | (59-63) | (62-65) | (64-67) | (66-69) | (62-64) | | |
| Belgium | 47 | 41 | 46 | 50 | 48 | 47 | * | 0.019* |
| | (43-50) | (37-44) | (43-49) | (47-53) | (45-50) | (45-48) | | |
| Bulgaria | 20 | 30 | 32 | 38 | 43 | 33 | * | 0.137* |
| | (18-23) | (26-33) | (29-35) | (35-40) | (41-46) | (32-35) | | |
| Canada | 26 | 30 | 32 | 36 | 35 | 32 | * | 0.056* |
| | (25-28) | (29-32) | (30-34) | (34-37) | (33-37) | (31-32) | | |
| Chile♦ | 8 | 8 | 10 | 12 | 18 | 11 | * | 0.176* |
| | (7-8) | (8-9) | (9-10) | (11-12) | (18-18) | (11-11) | | |
| Croatia | 38 | 45 | 49 | 48 | 59 | 49 | * | 0.076* |
| | (35-42) | (41-49) | (45-53) | (45-52) | (55-63) | (47-50) | | |
| Cyprus | 53 | 60 | 58 | 63 | 67 | 60 | * | 0.041* |
| | (50-56) | (57-63) | (55-61) | (61-66) | (64-69) | (59-61) | | |
| Czech Republic | 54 | 63 | 61 | 63 | 67 | 62 | * | 0.036* |
| | (51-57) | (61-66) | (58-64) | (61-66) | (65-69) | (61-63) | | |
| Denmark | 33 | 33 | 36 | 38 | 33 | 35 | | 0.005 |
| | (30-37) | (30-37) | (33-39) | (35-41) | (30-36) | (33-36) | | |
| Estonia | 47 | 48 | 56 | 52 | 59 | 53 | * | 0.041* |
| | (43-51) | (45-52) | (53-59) | (48-55) | (56-63) | (51-54) | | |
| Finland | 32 | 38 | 41 | 44 | 51 | 42 | * | 0.083* |
| | (30-35) | (35-41) | (38-44) | (42-47) | (48-54) | (40-43) | | |
| France | 42 | 43 | 48 | 51 | 56 | 48 | * | 0.058* |
| | (41-44) | (41-45) | (46-50) | (49-52) | (54-58) | (47-49) | | |
| Germany | 60 | 62 | 66 | 66 | 69 | 64 | * | 0.029* |
| | (58-61) | (60-63) | (64-67) | (65-68) | (68-70) | (64-65) | | |
| Greece | 42 | 45 | 45 | 49 | 53 | 46 | * | 0.044* |
| | (40-45) | (42-47) | (42-48) | (46-51) | (51-55) | (45-47) | | |
| Hungary | 55 | 60 | 62 | 63 | 65 | 61 | | 0.030* |
| | (52-58) | (57-62) | (59-64) | (61-66) | (62-68) | (60-62) | | |
| Iceland | 31 | 36 | 37 | 41 | 40 | 37 | * | 0.051* |
| | (27-34) | (33-40) | (34-40) | (38-44) | (37-43) | (36-39) | | |
| Ireland | 35 | 34 | 33 | 34 | 36 | 35 | | 0.008 |
| | (33-37) | (32-36) | (31-36) | (32-36) | (34-39) | (34-36) | | |
| Italy | 45 | 51 | 55 | 58 | 62 | 54 | * | 0.060* |
| | (44-46) | (49-52) | (54-56) | (57-59) | (60-63) | (54-55) | | |
| Latvia | 45 | 51 | 55 | 59 | 63 | 55 | * | 0.066* |
| | (42-47) | (49-54) | (52-57) | (56-61) | (61-66) | (54-56) | | |
| Lithuania | 40 | 32 | 32 | 40 | 42 | 37 | * | 0.031* |
| | (37-43) | (29-35) | (29-35) | (37-43) | (40-45) | (36-39) | | |
| Luxembourg | 52 | 55 | 56 | 56 | 60 | 56 | | 0.025* |
| | (48-57) | (50-59) | (52-60) | (52-60) | (56-65) | (54-58) | | |
| Malta | 29 | 33 | 34 | 38 | 36 | 34 | * | 0.048* |
| | (26-32) | (30-36) | (31-38) | (35-42) | (32-40) | (32-35) | | |
| Netherlands | 38 | 38 | 44 | 40 | 43 | 41 | * | 0.023* |
| | (35-41) | (36-41) | (41-46) | (38-42) | (41-45) | (40-42) | | |

| | Poorest | Quintile 2 | Quintile 3 | Quintile 4 | Richest | Total | GS | CI |
|---|---|---|---|---|---|---|---|---|
| Norway | 30 | 32 | 35 | 35 | 38 | 34 | * | 0.047* |
| | (27-32) | (29-34) | (33-37) | (33-37) | (36-40) | (33-35) | | |
| Poland | 44 | 51 | 56 | 57 | 67 | 55 | * | 0.075* |
| | (43-46) | (49-52) | (55-58) | (55-58) | (65-69) | (55-56) | | |
| Portugal | 39 | 43 | 46 | 54 | 66 | 50 | * | 0.105* |
| | (37-40) | (41-45) | (45-48) | (52-55) | (64-67) | (49-50) | | |
| Romania | 12 | 15 | 18 | 21 | 21 | 18 | * | 0.109* |
| | (11-13) | (13-16) | (17-19) | (20-22) | (20-22) | (17-18) | | |
| Slovak Republic | 41 | 41 | 45 | 44 | 43 | 43 | | 0.012 |
| | (39-44) | (38-44) | (42-48) | (41-46) | (41-46) | (42-44) | | |
| Slovenia | 36 | 42 | 43 | 45 | 52 | 43 | * | 0.064* |
| | (32-39) | (39-44) | (40-46) | (41-48) | (49-55) | (42-45) | | |
| Spain | 45 | 49 | 54 | 57 | 65 | 54 | * | 0.071* |
| | (44-47) | (47-50) | (53-56) | (56-59) | (63-66) | (54-55) | | |
| Sweden | 27 | 29 | 34 | 33 | 39 | 33 | * | 0.064* |
| | (24-30) | (26-32) | (31-36) | (31-36) | (36-41) | (32-34) | | |
| United Kingdom | 27 | 32 | 34 | 34 | 36 | 33 | * | 0.047* |
| | (26-29) | (31-34) | (32-35) | (33-36) | (35-38) | (32-34) | | |

Notes: Probabilities are expressed in percentages and indirectly standardised for need controlling for marital status, income, education, occupational status, income, size of household and urbanisation level. GS refers to the "Global Significance" of the "income" variable in the regression used for the indirect standardisation. The star (*) denotes significant at 5%. CI means concentration index.
♦ In Chile, visits refer to the past 3 months, Chile is not included in average.
Source: OECD calculations based on national health surveys.

## Annex Table 3.A.5. Quintile distribution of number of specialist visits after needs-standardisation, inequality index

| | Poorest | Quintile 2 | Quintile 3 | Quintile 4 | Richest | Total | GS | CI |
|---|---|---|---|---|---|---|---|---|
| EU27 | 0.65 | 0.66 | 0.65 | 0.64 | 0.66 | 0.65 | | |
| OECD | 0.66 | 0.66 | 0.65 | 0.65 | 0.67 | 0.66 | | |
| Total | 0.63 | 0.64 | 0.63 | 0.62 | 0.64 | 0.63 | | |
| Austria | 0.51 | 0.51 | 0.55 | 0.58 | 0.55 | 0.54 | | 0.024* |
| | (0.46-0.56) | (0.46-0.55) | (0.5-0.61) | (0.53-0.63) | (0.51-0.59) | (0.52-0.56) | | |
| Bulgaria | 0.65 | 0.59 | 0.72 | 0.5 | 0.42 | 0.55 | | -0.094* |
| | (0.51-0.79) | (0.43-0.75) | (0.53-0.92) | (0.4-0.61) | (0.34-0.5) | (0.49-0.61) | | |
| Canada♦ | 0.93 | 0.91 | 0.94 | 1.03 | 1.02 | 0.97 | | 0.024 |
| | (0.81-1.06) | (0.82-1) | (0.84-1.03) | (0.94-1.13) | (0.92-1.12) | (0.92-1.01) | | |
| Chile♦ | 0.27 | 0.26 | 0.26 | 0.33 | 0.46 | 0.32 | * | 0.113* |
| | (0.23-0.31) | (0.22-0.3) | (0.23-0.3) | (0.29-0.37) | (0.42-0.5) | (0.30-0.34) | | |
| Croatia | 0.56 | 0.64 | 0.63 | 0.56 | 0.49 | 0.57 | | -0.041 |
| | (0.43-0.7) | (0.49-0.79) | (0.52-0.73) | (0.48-0.64) | (0.42-0.56) | (0.52-0.62) | | |
| Cyprus | 0.52 | 0.55 | 0.53 | 0.57 | 0.56 | 0.55 | | 0.014 |
| | (0.46-0.59) | (0.48-0.62) | (0.48-0.59) | (0.52-0.63) | (0.51-0.62) | (0.52-0.57) | | |
| Czech Republic | 0.58 | 0.66 | 0.62 | 0.54 | 0.64 | 0.61 | | 0.002 |
| | (0.5-0.67) | (0.58-0.73) | (0.54-0.69) | (0.49-0.6) | (0.57-0.71) | (0.57-0.64) | | |
| Denmark | 0.62 | 0.75 | 0.84 | 0.69 | 0.65 | 0.71 | | -0.006 |
| | (0.51-0.73) | (0.61-0.89) | (0.66-1.02) | (0.58-0.81) | (0.52-0.77) | (0.65-0.77) | | |
| Estonia | 0.86 | 0.88 | 0.71 | 0.72 | 0.72 | 0.77 | | -0.044 |
| | (0.62-1.09) | (0.65-1.11) | (0.56-0.87) | (0.57-0.87) | (0.6-0.85) | (0.69-0.86) | | |
| Finland | 0.48 | 0.49 | 0.53 | 0.56 | 0.6 | 0.54 | | 0.046* |
| | (0.39-0.58) | (0.4-0.58) | (0.44-0.61) | (0.47-0.65) | (0.52-0.67) | (0.5-0.58) | | |

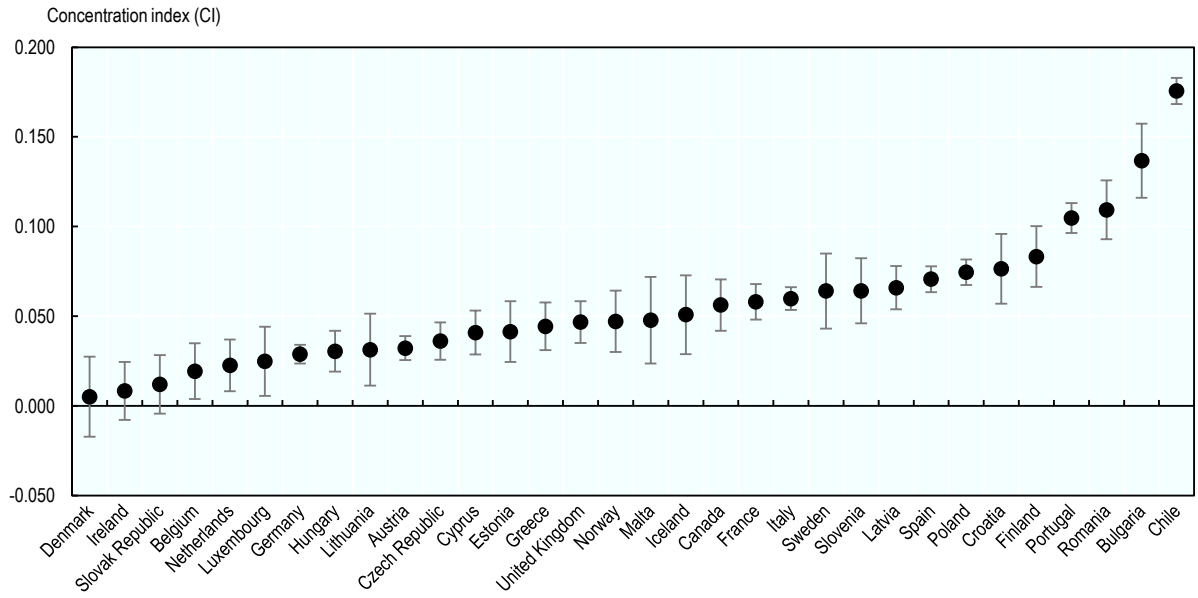
| | Poorest | Quintile 2 | Quintile 3 | Quintile 4 | Richest | Total | GS | CI |
|---|---|---|---|---|---|---|---|---|
| France | 0.76 | 0.64 | 0.73 | 0.67 | 0.69 | 0.7 | | -0.011 |
| | (0.68-0.84) | (0.57-0.71) | (0.64-0.82) | (0.55-0.79) | (0.64-0.75) | (0.66-0.74) | | |
| Germany | 0.97 | 0.86 | 0.86 | 0.88 | 0.88 | 0.89 | | -0.013 |
| | (0.92-1.03) | (0.81-0.9) | (0.82-0.91) | (0.83-0.92) | (0.84-0.93) | (0.87-0.91) | | |
| Greece | 0.63 | 0.6 | 0.63 | 0.6 | 0.66 | 0.62 | | 0.006 |
| | (0.54-0.72) | (0.53-0.66) | (0.56-0.69) | (0.53-0.67) | (0.58-0.74) | (0.59-0.66) | | |
| Hungary | 0.72 | 0.81 | 0.81 | 0.69 | 0.75 | 0.76 | | -0.005 |
| | (0.56-0.87) | (0.67-0.94) | (0.71-0.91) | (0.61-0.77) | (0.66-0.84) | (0.71-0.81) | | |
| Iceland | 0.55 | 0.56 | 0.46 | 0.5 | 0.47 | 0.51 | | -0.037 |
| | (0.4-0.7) | (0.45-0.67) | (0.38-0.55) | (0.41-0.58) | (0.37-0.56) | (0.46-0.55) | | |
| Ireland | 0.55 | 0.64 | 0.56 | 0.59 | 0.71 | 0.61 | | 0.039* |
| | (0.48-0.63) | (0.54-0.73) | (0.48-0.64) | (0.51-0.67) | (0.62-0.8) | (0.58-0.65) | | |
| Italy | 0.83 | 0.83 | 0.8 | 0.82 | 0.82 | 0.82 | | -0.001 |
| | (0.76-0.9) | (0.76-0.89) | (0.75-0.85) | (0.78-0.87) | (0.78-0.87) | (0.8-0.85) | | |
| Latvia | 0.41 | 0.37 | 0.34 | 0.4 | 0.42 | 0.39 | | 0.016 |
| | (0.36-0.46) | (0.31-0.42) | (0.29-0.38) | (0.35-0.45) | (0.38-0.47) | (0.37-0.41) | | |
| Lithuania | 0.54 | 0.5 | 0.46 | 0.45 | 0.48 | 0.49 | | -0.029 |
| | (0.47-0.62) | (0.41-0.59) | (0.38-0.53) | (0.38-0.53) | (0.4-0.56) | (0.45-0.52) | | |
| Luxembourg | 0.67 | 0.69 | 0.8 | 0.82 | 0.95 | 0.79 | | 0.070* |
| | (0.53-0.81) | (0.52-0.85) | (0.62-0.98) | (0.66-0.98) | (0.84-1.07) | (0.72-0.86) | | |
| Malta | 0.53 | 0.56 | 0.49 | 0.49 | 0.50 | 0.52 | | -0.020 |
| | (0.45-0.61) | (0.44-0.68) | (0.39-0.59) | (0.38-0.59) | (0.36-0.65) | (0.47-0.57) | | |
| Netherlands | 0.53 | 0.6 | 0.75 | 0.66 | 0.69 | 0.66 | | 0.038* |
| | (0.43-0.63) | (0.47-0.73) | (0.62-0.88) | (0.58-0.75) | (0.6-0.78) | (0.61-0.71) | | |
| Norway | 0.32 | 0.24 | 0.31 | 0.27 | 0.33 | 0.3 | | 0.021 |
| | (0.24-0.41) | (0.17-0.3) | (0.26-0.36) | (0.22-0.33) | (0.28-0.39) | (0.27-0.32) | | |
| Poland | 0.62 | 0.65 | 0.64 | 0.68 | 0.71 | 0.66 | | 0.028* |
| | (0.57-0.67) | (0.6-0.69) | (0.6-0.68) | (0.64-0.72) | (0.67-0.76) | (0.64-0.68) | | |
| Portugal | 0.49 | 0.43 | 0.41 | 0.43 | 0.59 | 0.48 | | 0.048* |
| | (0.41-0.57) | (0.39-0.47) | (0.37-0.45) | (0.39-0.46) | (0.56-0.63) | (0.45-0.5) | | |
| Romania | 0.29 | 0.31 | 0.28 | 0.32 | 0.37 | 0.32 | | 0.048* |
| | (0.24-0.34) | (0.26-0.35) | (0.24-0.32) | (0.27-0.36) | (0.32-0.42) | (0.3-0.34) | | |
| Slovak Republic | 0.58 | 0.62 | 0.67 | 0.66 | 0.7 | 0.65 | | 0.035* |
| | (0.5-0.65) | (0.55-0.7) | (0.59-0.74) | (0.58-0.74) | (0.61-0.79) | (0.61-0.68) | | |
| Slovenia | 0.79 | 0.86 | 0.72 | 0.83 | 0.69 | 0.78 | | -0.027 |
| | (0.64-0.94) | (0.71-1.02) | (0.63-0.82) | (0.7-0.95) | (0.59-0.79) | (0.72-0.84) | | |
| Spain | 0.41 | 0.4 | 0.37 | 0.41 | 0.44 | 0.41 | | 0.015 |
| | (0.36-0.47) | (0.36-0.44) | (0.34-0.4) | (0.37-0.45) | (0.41-0.47) | (0.39-0.42) | | |
| Sweden | 2 | 1.9 | 1.62 | 1.69 | 1.51 | 1.73 | | -0.049* |
| | (1.39-2.61) | (1.58-2.22) | (1.42-1.81) | (1.46-1.93) | (1.3-1.73) | (1.6-1.87) | | |
| United Kingdom | 0.42 | 0.45 | 0.43 | 0.48 | 0.52 | 0.46 | | 0.042* |
| | (0.36-0.47) | (0.38-0.52) | (0.39-0.47) | (0.43-0.53) | (0.47-0.57) | (0.44-0.49) | | |

Notes: The number of visits over the past 4 weeks is indirectly standardised for need controlling for marital status, income, education, occupational status, income size of household and urbanisation level. GS refers to the "Global Significance" of the "income" variable in the regression used for the indirect standardisation. The star (*) denotes significant at 5%. CI means concentration index.

♦ In Chile (Canada), visits refer to the past 3 (12) months, Chile (Canada) is not included in average.

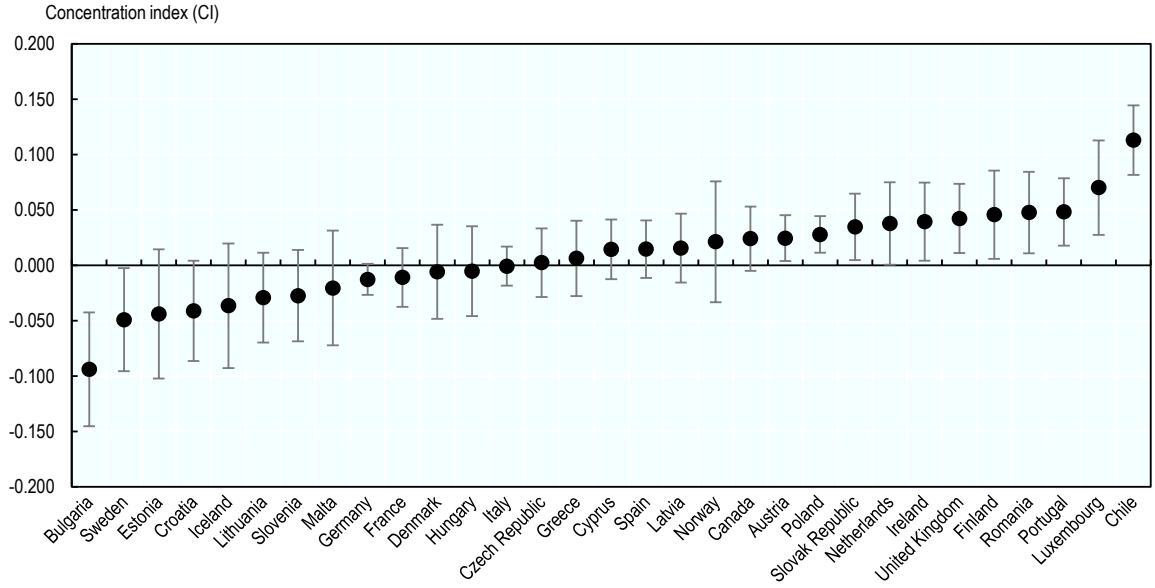
Source: OECD calculations based on national health surveys.

## Annex Figure 3.A.3. Inequality index for the probability of a specialist visit after needs-standardisation




Note: The concentration index measures the degree of income-related inequalities in the probability of a specialist visit. The error bars represent the 95% confidence intervals. If the concentration index is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality.
Source: OECD calculations based on national health surveys.

## Annex Figure 3.A.4. Inequality index for the number of specialist visits after needs-standardisation




Note: The concentration index measures the degree of income-related inequalities in the number of specialist visits. The error bars represent the 95% confidence intervals. If the concentration index is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality.
Source: OECD calculations based on national health surveys.

## Annex Table 3.A.6. Quintile distribution of the probability of a doctor visit after needs-standardisation, inequality index

| | Poorest | Quintile 2 | Quintile 3 | Quintile 4 | Richest | Total | GS | CI |
|---|---|---|---|---|---|---|---|---|
| EU28 | 74 | 76 | 78 | 79 | 81 | 77 | | |
| OECD | 75 | 77 | 79 | 80 | 81 | 78 | | |
| Total | 73 | 76 | 77 | 78 | 80 | 77 | | |
| Austria | 82 | 85 | 86 | 88 | 88 | 86 | * | 0.014* |
| | (80-83) | (84-87) | (85-87) | (87-89) | (87-89) | (85-86) | | |
| Belgium | 83 | 81 | 87 | 88 | 86 | 86 | * | 0.011* |
| | (80-85) | (78-83) | (85-89) | (86-90) | (84-88) | (85-86) | | |
| Bulgaria | 59 | 74 | 76 | 78 | 83 | 75 | * | 0.059* |
| | (57-62) | (71-76) | (74-78) | (76-81) | (81-86) | (74-76) | | |
| Canada | 72 | 73 | 74 | 79 | 79 | 75 | * | 0.022* |
| | (70-73) | (71-74) | (73-76) | (77-80) | (77-80) | (74-76) | | |
| Chile♦ | 19 | 21 | 22 | 24 | 31 | 24 | * | 0.089* |
| | (19-20) | (21-21) | (21-22) | (24-25) | (30-31) | (23-24) | | |
| Croatia | 71 | 76 | 76 | 76 | 83 | 77 | | 0.026* |
| | (68-74) | (72-79) | (73-79) | (73-80) | (80-86) | (75-78) | | |
| Cyprus | 58 | 64 | 63 | 67 | 72 | 65 | * | 0.039* |
| | (55-61) | (61-67) | (61-66) | (65-70) | (69-74) | (63-66) | | |
| Czech Republic | 83 | 85 | 87 | 85 | 87 | 85 | | 0.008* |
| | (81-85) | (83-87) | (85-88) | (84-87) | (85-89) | (85-86) | | |
| Denmark | 82 | 82 | 83 | 81 | 76 | 81 | | -0.013* |
| | (80-85) | (79-84) | (80-85) | (79-84) | (74-79) | (80-82) | | |
| Estonia | 72 | 71 | 74 | 76 | 83 | 75 | * | 0.028* |
| | (69-75) | (69-74) | (71-77) | (73-79) | (80-86) | (74-77) | | |
| Finland | 63 | 72 | 75 | 78 | 82 | 74 | * | 0.045* |
| | (61-66) | (70-75) | (73-78) | (76-80) | (79-84) | (73-75) | | |
| France | 86 | 88 | 89 | 90 | 91 | 89 | * | 0.011* |
| | (85-87) | (87-89) | (88-90) | (89-91) | (90-92) | (88-89) | | |
| Germany | 84 | 86 | 87 | 87 | 88 | 86 | * | 0.008* |
| | (83-85) | (85-87) | (86-88) | (86-88) | (87-89) | (86-87) | | |
| Greece | 72 | 75 | 76 | 77 | 84 | 76 | * | 0.028* |
| | (70-74) | (73-77) | (74-78) | (75-79) | (82-86) | (75-77) | | |
| Hungary | 81 | 83 | 84 | 85 | 87 | 84 | | 0.013* |
| | (79-83) | (81-85) | (82-86) | (82-87) | (85-89) | (83-85) | | |
| Iceland | 72 | 76 | 73 | 78 | 76 | 75 | | 0.011* |
| | (69-75) | (74-79) | (70-76) | (75-81) | (73-79) | (74-77) | | |
| Ireland | 75 | 75 | 76 | 75 | 76 | 75 | | 0.003 |
| | (73-77) | (73-77) | (74-78) | (73-77) | (74-78) | (74-76) | | |
| Italy | 75 | 78 | 82 | 82 | 83 | 80 | * | 0.019* |
| | (74-76) | (77-79) | (80-83) | (81-83) | (82-84) | (79-80) | | |
| Latvia | 67 | 76 | 77 | 79 | 82 | 76 | * | 0.035* |
| | (65-70) | (74-78) | (75-79) | (77-81) | (80-84) | (75-77) | | |
| Lithuania | 76 | 71 | 75 | 78 | 79 | 76 | | 0.016* |
| | (73-78) | (69-74) | (72-77) | (76-81) | (77-82) | (75-77) | | |
| Luxembourg | 87 | 87 | 89 | 87 | 91 | 88 | | 0.008 |
| | (84-90) | (84-90) | (86-91) | (84-90) | (89-94) | (87-90) | | |
| Malta | 79 | 80 | 77 | 81 | 80 | 79 | | 0.002 |
| | (76-81) | (78-83) | (74-80) | (78-84) | (77-84) | (78-81) | | |
| Netherlands | 73 | 74 | 75 | 75 | 75 | 75 | | 0.005 |
| | (70-76) | (72-76) | (73-78) | (73-77) | (73-77) | (74-76) | | |
| Norway | 74 | 77 | 76 | 78 | 79 | 77 | * | 0.011* |
| | (72-76) | (75-79) | (74-78) | (76-80) | (77-81) | (76-78) | | |
| Poland | 73 | 78 | 80 | 82 | 87 | 80 | * | 0.032* |
| | (72-74) | (77-79) | (78-81) | (81-83) | (86-88) | (80-81) | | |
| Portugal | 81 | 83 | 86 | 87 | 91 | 86 | * | 0.023* |

| | Poorest | Quintile 2 | Quintile 3 | Quintile 4 | Richest | Total | GS | CI |
|---|---|---|---|---|---|---|---|---|
| | (80-82) | (82-84) | (85-87) | (86-88) | (90-92) | (85-86) | | |
| Romania | 36 | 41 | 46 | 50 | 51 | 45 | * | 0.068* |
| | (34-38) | (40-43) | (44-47) | (49-52) | (49-52) | (44-46) | | |
| Slovak Republic | 73 | 75 | 77 | 75 | 72 | 74 | | -0.003 |
| | (70-75) | (73-77) | (74-79) | (72-77) | (69-74) | (73-75) | | |
| Slovenia | 68 | 70 | 71 | 75 | 74 | 71 | | 0.019* |
| | (65-71) | (67-73) | (68-74) | (72-78) | (71-77) | (70-73) | | |
| Spain | 81 | 83 | 84 | 85 | 86 | 84 | * | 0.012* |
| | (79-82) | (82-84) | (83-86) | (84-86) | (85-87) | (83-84) | | |
| Sweden | 62 | 65 | 66 | 61 | 65 | 64 | | 0.003 |
| | (59-65) | (62-68) | (64-69) | (59-64) | (63-68) | (63-65) | | |
| United Kingdom | 76 | 76 | 75 | 78 | 77 | 76 | | 0.004 |
| | (75-77) | (74-77) | (74-77) | (77-79) | (76-78) | (76-77) | | |
| United States | 59 | 57 | 61 | 67 | 74 | 65 | * | 0.053* |
| | (57-60) | (56-59) | (60-62) | (66-68) | (73-75) | (65-66) | | |

Notes: Probabilities are expressed in percentages and indirectly standardised for need controlling for marital status, income, education, occupational status, income, size of household and urbanisation level. GS refers to the "Global Significance" of the "income" variable in the regression used for the indirect standardisation. The star (*) denotes significant at 5%. CI means concentration index.

♦ In Chile, visits refer to the past 3 months, Chile is not included in average.

Source: OECD calculations based on national health surveys.

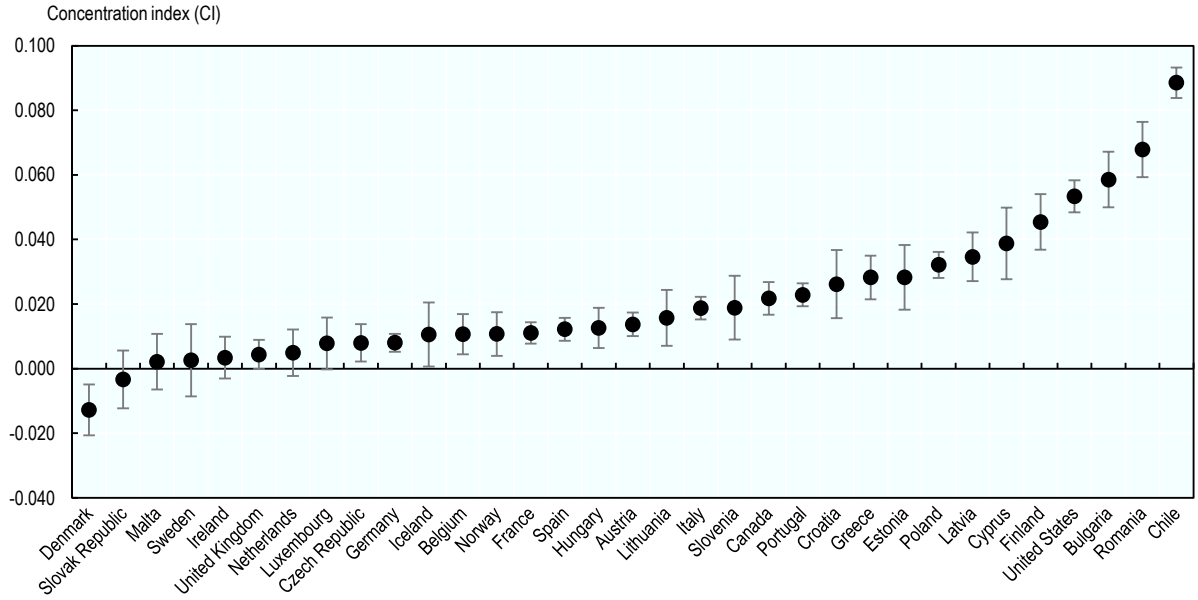
## Annex Table 3.A.7. Quintile distribution of the probability of inpatient hospitalisation after needs-standardisation, inequality index

| | Poorest | Quintile 2 | Quintile 3 | Quintile 4 | Richest | Total | GS | CI |
|---|---|---|---|---|---|---|---|---|
| EU28 | 11 | 11 | 11 | 11 | 10 | 11 | | |
| OECD | 11 | 11 | 11 | 11 | 10 | 11 | | |
| Total | 10 | 10 | 10 | 10 | 10 | 10 | | |
| Austria | 14 | 14 | 15 | 14 | 15 | 14 | | 0.016 |
| | (12-15) | (12-15) | (13-16) | (13-15) | (14-16) | (14-15) | | |
| Belgium | 11 | 11 | 11 | 11 | 9 | 11 | | -0.027 |
| | (9-13) | (8-13) | (9-13) | (10-13) | (8-11) | (10-11) | | |
| Bulgaria | 9 | 10 | 12 | 11 | 10 | 10 | | 0.001 |
| | (8-11) | (8-12) | (10-14) | (9-12) | (8-11) | (10-11) | | |
| Canada | 10 | 10 | 10 | 7 | 7 | 9 | * | -0.068* |
| | (9-11) | (9-11) | (9-11) | (7-8) | (6-8) | (8-9) | | |
| Chile | 7 | 6 | 6 | 5 | 6 | 6 | * | -0.008 |
| | (6-7) | (6-6) | (5-6) | (5-6) | (6-7) | (6-6) | | |
| Croatia | 10 | 11 | 11 | 10 | 12 | 11 | | 0.027 |
| | (8-13) | (8-13) | (9-14) | (8-12) | (10-15) | (10-12) | | |
| Cyprus | 8 | 7 | 8 | 9 | 7 | 8 | | 0.025 |
| | (6-9) | (5-9) | (6-10) | (8-11) | (6-9) | (7-9) | | |
| Czech Republic | 10 | 11 | 13 | 12 | 12 | 11 | | 0.023 |
| | (8-12) | (9-13) | (11-14) | (10-13) | (10-13) | (11-12) | | |
| Denmark | 10 | 8 | 7 | 8 | 7 | 8 | | -0.046 |
| | (8-12) | (6-10) | (5-8) | (6-9) | (6-9) | (7-9) | | |
| Estonia | 11 | 12 | 11 | 8 | 9 | 10 | | -0.066* |
| | (9-14) | (9-14) | (9-14) | (6-10) | (7-11) | (9-11) | | |
| Finland | 10 | 9 | 9 | 9 | 9 | 9 | | -0.003 |
| | (8-12) | (7-10) | (7-10) | (8-11) | (8-11) | (8-10) | | |
| France | 13 | 13 | 12 | 12 | 13 | 13 | | -0.008 |
| | (12-14) | (12-14) | (10-13) | (11-13) | (12-14) | (12-13) | | |
| Germany | 17 | 16 | 16 | 14 | 14 | 16 | | -0.034* |
| | (16-18) | (15-17) | (15-17) | (13-15) | (14-15) | (15-16) | | |
| Greece | 9 | 8 | 10 | 9 | 10 | 9 | | 0.028 |
| | (8-10) | (7-10) | (8-11) | (8-11) | (9-12) | (9-10) | | |

| | Poorest | Quintile 2 | Quintile 3 | Quintile 4 | Richest | Total | GS | CI |
|---|---|---|---|---|---|---|---|---|
| Hungary | 13 | 14 | 13 | 14 | 14 | 14 | | 0.007 |
| | (11-15) | (12-16) | (11-15) | (12-16) | (12-15) | (13-15) | | |
| Iceland | 9 | 10 | 8 | 9 | 8 | 9 | | -0.025 |
| | (7-11) | (8-12) | (6-10) | (7-11) | (7-10) | (8-10) | | |
| Ireland | 15 | 18 | 16 | 17 | 16 | 16 | | 0.000 |
| | (14-17) | (16-20) | (14-18) | (15-19) | (14-18) | (16-17) | | |
| Italy | 8 | 8 | 8 | 9 | 9 | 8 | | 0.024* |
| | (7-9) | (7-9) | (7-9) | (8-9) | (8-10) | (8-9) | | |
| Latvia | 13 | 12 | 11 | 11 | 10 | 11 | | -0.056* |
| | (11-15) | (10-14) | (9-13) | (9-13) | (8-11) | (10-12) | | |
| Lithuania | 16 | 12 | 11 | 14 | 12 | 13 | * | -0.036 |
| | (13-18) | (10-14) | (9-13) | (12-16) | (10-13) | (12-14) | | |
| Luxembourg | 15 | 13 | 12 | 12 | 10 | 12 | | -0.065* |
| | (11-18) | (9-16) | (9-14) | (9-14) | (8-12) | (11-13) | | |
| Netherlands | 7 | 8 | 9 | 8 | 8 | 8 | | 0.024 |
| | (5-9) | (6-9) | (8-10) | (7-9) | (7-10) | (7-9) | | |
| Malta | 8 | 10 | 9 | 10 | 8 | 9 | | -0.005 |
| | (6-10) | (8-12) | (7-10) | (8-12) | (6-10) | (8-10) | | |
| Norway | 10 | 8 | 10 | 11 | 9 | 9 | * | 0.006 |
| | (8-11) | (6-9) | (8-11) | (9-12) | (7-10) | (9-10) | | |
| Poland | 13 | 13 | 13 | 14 | 13 | 13 | | 0.018 |
| | (11-14) | (12-14) | (12-14) | (13-15) | (12-15) | (13-14) | | |
| Portugal | 10 | 10 | 9 | 10 | 9 | 10 | | -0.020 |
| | (9-11) | (9-11) | (8-10) | (9-10) | (9-10) | (9-10) | | |
| Romania | 3 | 4 | 5 | 5 | 4 | 4 | * | 0.065* |
| | (2-4) | (3-5) | (4-5) | (4-6) | (4-5) | (4-5) | | |
| Slovak Republic | 11 | 11 | 12 | 14 | 11 | 12 | | 0.027 |
| | (9-12) | (9-13) | (10-14) | (12-16) | (9-13) | (11-13) | | |
| Slovenia | 11 | 11 | 10 | 11 | 9 | 10 | | -0.022 |
| | (8-13) | (9-13) | (8-12) | (9-13) | (8-11) | (9-11) | | |
| Spain | 8 | 7 | 9 | 8 | 8 | 8 | | 0.025 |
| | (7-9) | (6-8) | (8-10) | (7-9) | (8-9) | (8-8) | | |
| Sweden | 6 | 10 | 10 | 8 | 8 | 9 | * | 0.012 |
| | (5-8) | (8-12) | (8-12) | (7-10) | (7-10) | (8-9) | | |
| United Kingdom | 8 | 9 | 9 | 7 | 8 | 8 | | -0.011 |
| | (7-9) | (8-10) | (8-9) | (6-8) | (8-9) | (8-9) | | |
| United States | 12 | 10 | 9 | 8 | 9 | 9 | * | -0.064* |
| | (11-13) | (9-11) | (8-10) | (8-9) | (8-9) | (9-10) | | |

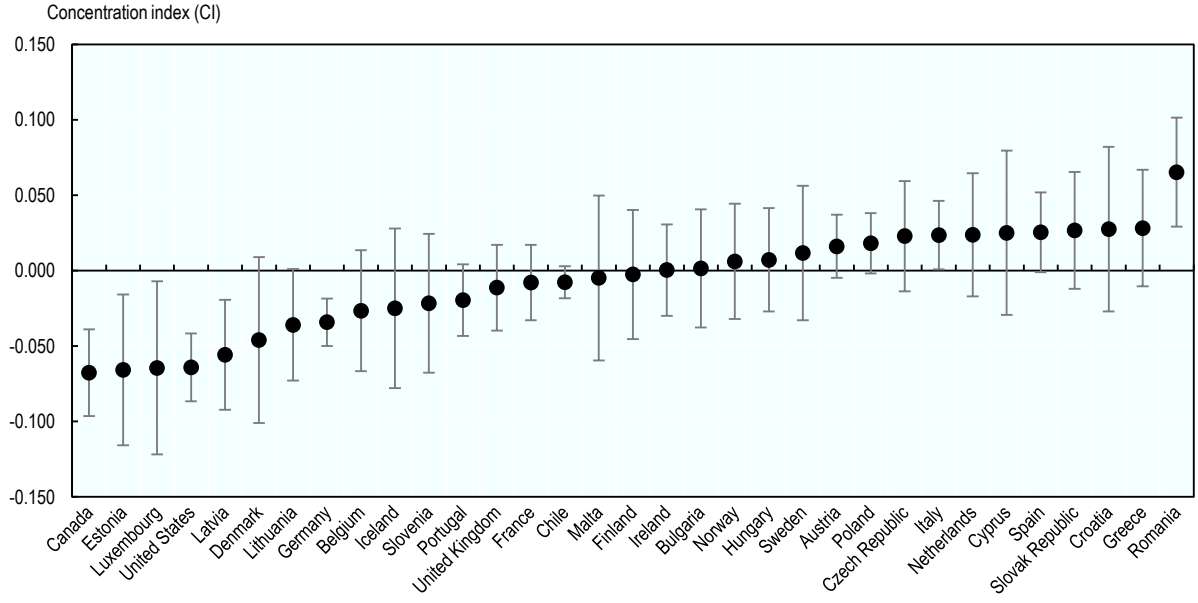
Notes: Probabilities are expressed in percentages and indirectly standardised for need controlling for marital status, income, education, occupational status, income, size of household and urbanisation level. GS refers to the "Global Significance" of the "income" variable in the regression used for the indirect standardisation. The star (*) denotes significant at 5%. CI means concentration index.
Source: OECD calculations based on national health surveys.

## Annex Figure 3.A.5. Inequality index for the probability of a doctor visit after needs-standardisation




Note: The concentration index measures the degree of income-related inequalities in the probability of doctor visit. The error bars represent the 95% confidence intervals. If the concentration index is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality.
Source: OECD calculations based on national health surveys.

## Annex Figure 3.A.6. Inequality index for the probability of an inpatient hospitalisation after needs-standardisation




Note: The concentration index measures the degree of income-related inequalities in the probability of an inpatient hospitalisation. The error bars represent the 95% confidence intervals. If the concentration index is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality.
Source: OECD calculations based on national health surveys.

## Preventive services

### Annex Table 3.A.8. Descriptive statistics and generalised concentration indexes: Cancer screening

| | Cervical cancer screening | | | | Breast cancer screening | | | | Colorectal cancer screening | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Mean | Q5 | GCI | Q1 | Mean | Q5 | GCI | Q1 | Mean | Q5 | GCI |
| EU28 | 60% | 70% | 77% | | 58% | 65% | 71% | | 34% | 37% | 39% | |
| OECD | 65% | 73% | 79% | | 63% | 70% | 74% | | 38% | 42% | 44% | |
| Total | 61% | 71% | 78% | | 59% | 66% | 72% | | 34% | 38% | 40% | |
| Austria | 83% | 87% | 92% | 0.018* | 67% | 73% | 80% | 0.025* | 67% | 71% | 74% | 0.015* |
| Belgium | 61% | 76% | 80% | 0.025* | 73% | 75% | 83% | 0.030* | 32% | 35% | 37% | 0.010 |
| Bulgaria | 30% | 52% | 74% | 0.088* | 20% | 32% | 47% | 0.052* | 4% | 7% | 8% | 0.009* |
| Canada | 71% | 76% | 80% | 0.018* | 65% | 74% | 78% | 0.023* | 41% | 49% | 52% | 0.018* |
| Chile | 71% | 72% | 75% | 0.007* | 56% | 61% | 68% | 0.022* | - | - | - | |
| Croatia | 61% | 77% | 86% | 0.043* | 54% | 67% | 75% | 0.046* | 24% | 31% | 36% | 0.026* |
| Cyprus | 55% | 65% | 76% | 0.046* | 52% | 66% | 78% | 0.054* | 10% | 18% | 23% | 0.018* |
| Czech Republic | 78% | 87% | 94% | 0.029* | 65% | 77% | 85% | 0.039* | 50% | 57% | 58% | 0.008 |
| Denmark | 51% | 64% | 74% | 0.047* | 83% | 82% | 80% | -0.007 | 46% | 48% | 49% | 0.003 |
| Estonia | 50% | 58% | 71% | 0.042* | 41% | 39% | 46% | 0.005 | 16% | 16% | 18% | -0.006 |
| Finland | 69% | 79% | 87% | 0.035* | 77% | 86% | 89% | 0.019* | 30% | 30% | 30% | 0.001 |
| France | 72% | 82% | 89% | 0.034* | 79% | 87% | 90% | 0.020* | 53% | 64% | 67% | 0.025* |
| Germany | 73% | 81% | 86% | 0.024* | 70% | 74% | 72% | 0.006 | 71% | 74% | 77% | 0.012* |
| Greece | 69% | 76% | 81% | 0.024* | 51% | 60% | 70% | 0.042* | 16% | 23% | 24% | 0.013* |
| Hungary | 60% | 71% | 77% | 0.033* | 53% | 65% | 73% | 0.042* | 23% | 23% | 19% | -0.002 |
| Iceland | 77% | 80% | 82% | 0.012 | 60% | 66% | 69% | 0.021 | 36% | 42% | 48% | 0.021* |
| Ireland | 71% | 69% | 69% | 0.000 | 69% | 68% | 71% | 0.012* | 35% | 38% | 38% | -0.001 |
| Italy | 56% | 68% | 75% | 0.038* | 55% | 67% | 75% | 0.042* | 31% | 43% | 50% | 0.039* |
| Latvia | 68% | 78% | 84% | 0.033* | 38% | 47% | 56% | 0.039* | 23% | 30% | 32% | 0.015* |
| Lithuania | 59% | 62% | 68% | 0.029* | 45% | 46% | 51% | 0.020* | 28% | 28% | 24% | -0.002 |
| Luxembourg | 79% | 84% | 92% | 0.027* | 82% | 81% | 77% | -0.007 | 55% | 57% | 65% | 0.018* |
| Malta | 49% | 64% | 67% | 0.034* | 48% | 58% | 73% | 0.044* | 25% | 27% | 27% | 0.005 |
| Netherlands | 49% | 49% | 53% | 0.013* | 73% | 80% | 82% | 0.013 | 24% | 23% | 24% | -0.003 |
| Norway | 45% | 66% | 76% | 0.056* | 59% | 76% | 79% | 0.026* | 29% | 31% | 28% | -0.008 |
| Poland | 59% | 72% | 84% | 0.046* | 45% | 59% | 66% | 0.034* | 16% | 20% | 23% | 0.013* |
| Portugal | 63% | 71% | 76% | 0.026* | 82% | 84% | 86% | 0.006 | 50% | 57% | 62% | 0.021* |
| Romania | 13% | 27% | 38% | 0.050* | 2% | 7% | 10% | 0.018* | 4% | 6% | 8% | 0.009* |
| Slovak Republic | 61% | 69% | 71% | 0.023* | 48% | 54% | 59% | 0.028* | 35% | 35% | 34% | 0.000 |
| Slovenia | 69% | 78% | 85% | 0.027* | 56% | 61% | 71% | 0.022* | 59% | 69% | 81% | 0.037* |
| Spain | 56% | 69% | 81% | 0.050* | 68% | 80% | 86% | 0.032* | 19% | 26% | 35% | 0.028* |
| Sweden | 56% | 81% | 89% | 0.053* | 74% | 91% | 93% | 0.015* | 43% | 25% | 22% | -0.025* |
| United Kingdom | 56% | 63% | 69% | 0.023* | 51% | 59% | 62% | 0.021* | 50% | 49% | 45% | -0.012* |
| United States | 78% | 80% | 84% | 0.016* | 71% | 80% | 87% | 0.035* | 51% | 63% | 71% | 0.042* |

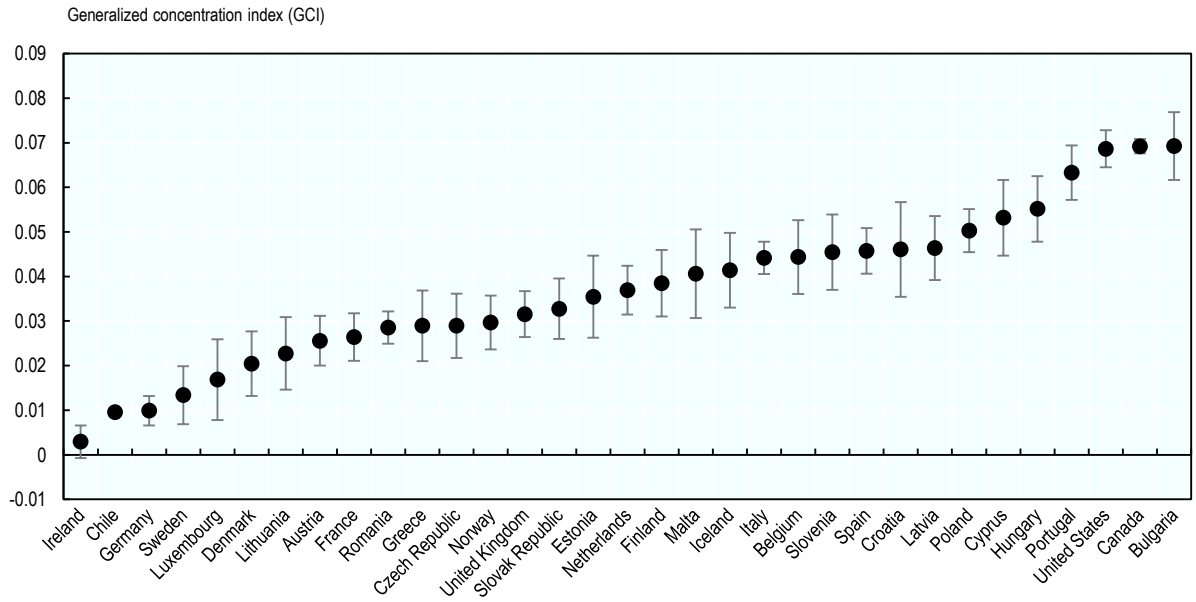
Note: GCI means generalised concentration index. Q1 refers to the proportion in the first income quintile (lowest), Q5 in the highest.
Source: OECD calculations based on national health surveys.

## Annex Table 3.A.9. Descriptive statistics and generalised concentration indexes: Dental visits and flu vaccination

| | Visited any dentist | | | | Flu vaccination | | | |
|---|---|---|---|---|---|---|---|---|
| | Q1 | Mean | Q5 | GCI | Q1 | Mean | Q5 | GCI |
| EU28/26 | 51% | 59% | 69% | | 36% | 37% | 37% | |
| OECD | 54% | 63% | 72% | | 40% | 40% | 41% | |
| Total | 51% | 60% | 70% | | 38% | 39% | 39% | |
| Austria | 66% | 72% | 79% | 0.026* | 17% | 20% | 24% | 0.018* |
| Belgium | 49% | 60% | 69% | 0.044* | 60% | 59% | 55% | -0.010 |
| Bulgaria | 26% | 45% | 61% | 0.069* | - | - | - | |
| Canada | 47% | 66% | 81% | 0.069* | 56% | 58% | 62% | 0.017* |
| Chile♦ | 4% | 6% | 10% | 0.010* | - | - | - | |
| Croatia | 44% | 54% | 68% | 0.046* | 25% | 25% | 26% | 0.001 |
| Cyprus | 38% | 48% | 66% | 0.053* | 30% | 33% | 32% | 0.012 |
| Czech Republic | 68% | 76% | 81% | 0.029* | 15% | 16% | 17% | 0.006 |
| Denmark | 72% | 81% | 84% | 0.020* | 49% | 48% | 41% | -0.014 |
| Estonia | 45% | 50% | 63% | 0.035* | 2% | 1% | 4% | 0.000 |
| Finland | 46% | 57% | 66% | 0.038* | 92% | 91% | 90% | -0.003 |
| France | 49% | 55% | 62% | 0.026* | 56% | 55% | 53% | -0.004 |
| Germany | 78% | 82% | 83% | 0.010* | 49% | 48% | 45% | -0.005 |
| Greece | 43% | 48% | 59% | 0.029* | 48% | 52% | 54% | 0.016* |
| Hungary | 31% | 46% | 60% | 0.055* | 26% | 28% | 29% | 0.017* |
| Iceland | 61% | 70% | 80% | 0.041* | 53% | 53% | 52% | 0.008 |
| Ireland | 93% | 93% | 94% | 0.003 | 54% | 54% | 55% | -0.001 |
| Italy | 35% | 46% | 56% | 0.044* | 39% | 41% | 39% | -0.001 |
| Latvia | 37% | 49% | 61% | 0.046* | 3% | 4% | 6% | 0.006* |
| Lithuania | 44% | 47% | 53% | 0.023* | 5% | 5% | 4% | 0.001 |
| Luxembourg | 75% | 79% | 82% | 0.017* | 45% | 47% | 51% | 0.006 |
| Malta | 42% | 56% | 61% | 0.041* | 54% | 53% | 49% | -0.015 |
| Netherlands | 72% | 79% | 88% | 0.037* | 76% | 73% | 68% | -0.019* |
| Norway | 67% | 78% | 85% | 0.030* | 22% | 24% | 22% | 0.006 |
| Poland | 42% | 53% | 68% | 0.050* | 5% | 10% | 13% | 0.019* |
| Portugal | 36% | 49% | 67% | 0.063* | 49% | 48% | 45% | -0.004 |
| Romania | 8% | 15% | 23% | 0.029* | 4% | 6% | 8% | 0.010* |
| Slovak Republic | 65% | 75% | 82% | 0.033* | 13% | 14% | 18% | 0.009 |
| Slovenia | 47% | 59% | 70% | 0.045* | 11% | 12% | 15% | 0.009 |
| Spain | 34% | 47% | 58% | 0.046* | - | - | - | |
| Sweden | 71% | 71% | 77% | 0.013* | 37% | 38% | 39% | 0.008 |
| United Kingdom | 64% | 74% | 80% | 0.032* | 80% | 79% | 78% | -0.004 |
| United States | 26% | 41% | 57% | 0.069* | 69% | 72% | 75% | 0.018* |

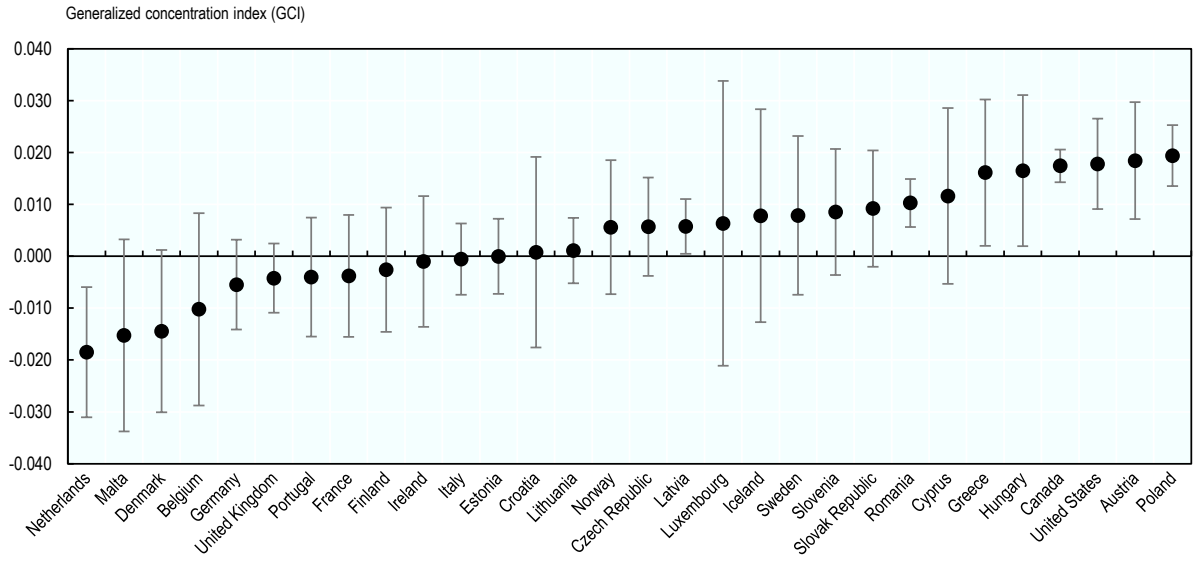
Note: ♦ In Chile, dentist visits refer to the past 3 months; Chile is not included in the average. GCI means generalised concentration index. Q1 refers to the proportion in the first income quintile (lowest), Q5 in the highest.
Source: OECD calculations based on national health surveys.

## Annex Figure 3.A.7. Inequality index for the probability of a dentist visit in the past 12 months



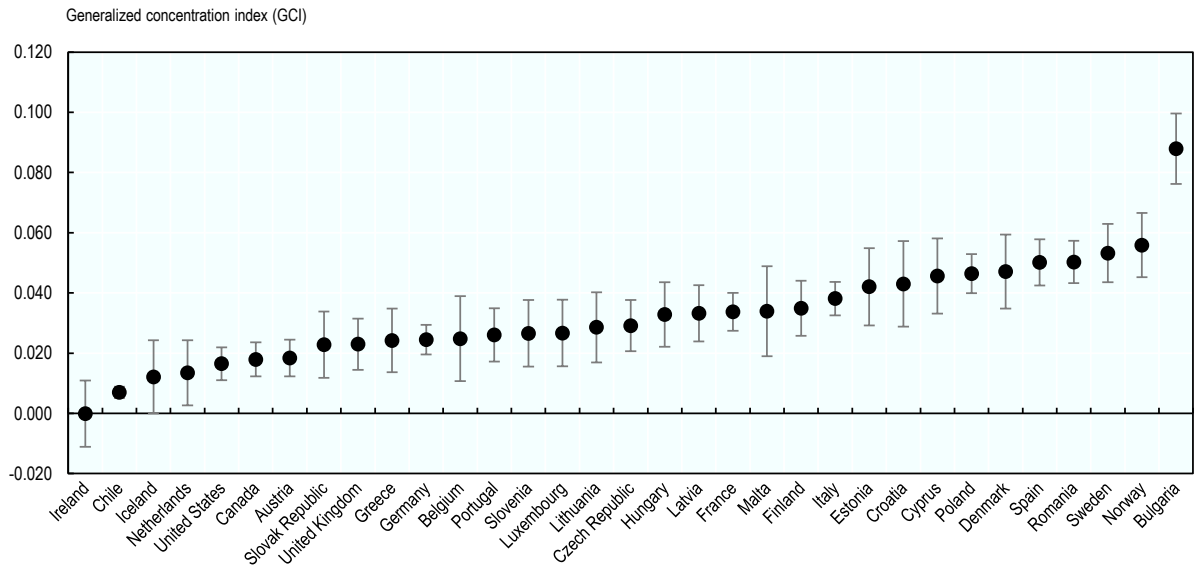

Note: The concentration index measures the degree of income-related inequalities in the probability of a dentist visit. The error bars represent the 95% confidence intervals. If the concentration index is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality.
Source: OECD calculations based on national health surveys.

## Annex Figure 3.A.8. Inequality index for the probability of flu vaccination in the past 12 months



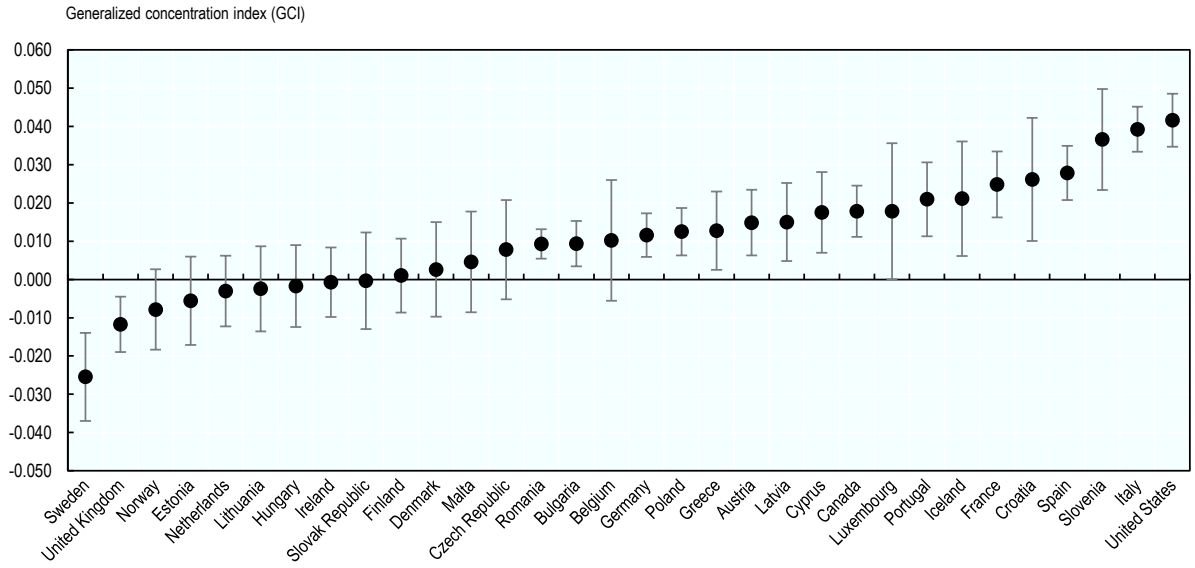

Note: The concentration index measures the degree of income-related inequalities in the probability of flu vaccination. The error bars represent the 95% confidence intervals. If the concentration index is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality.
Source: OECD calculations based on national health surveys.

## Annex Figure 3.A.9. Inequality index for the probability of cervical cancer screening



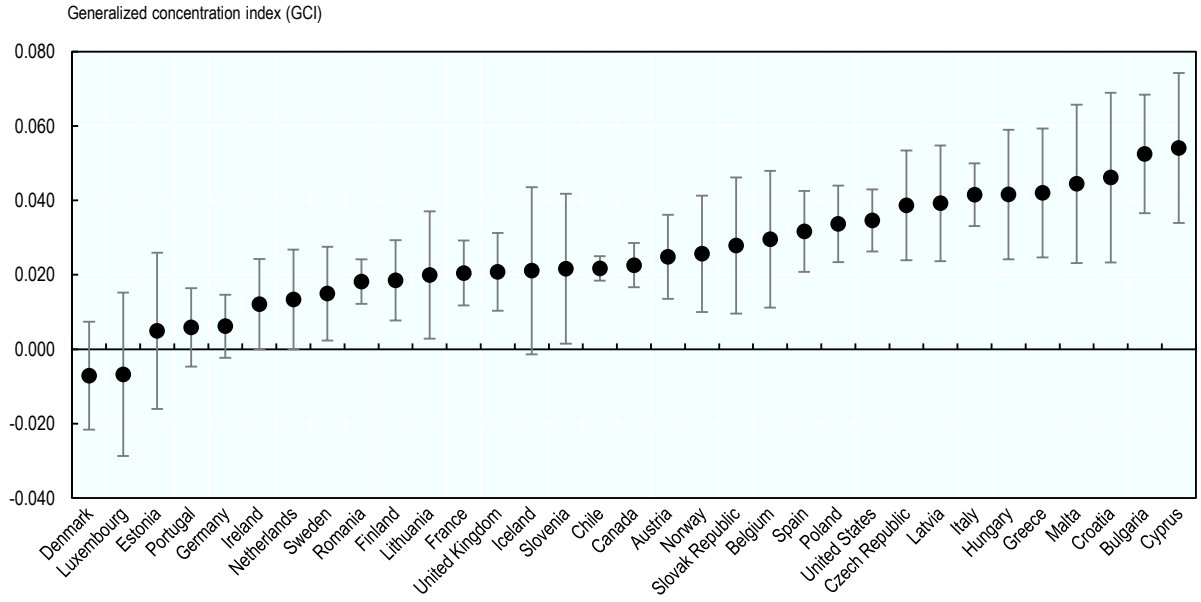

Note: The concentration index measures the degree of income-related inequalities in the probability of cervical cancer screening. The error bars represent the 95% confidence intervals. If the concentration index is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality.
Source: OECD calculations based on national health surveys.

## Annex Figure 3.A.10. Inequality index for the probability of colorectal cancer screening




Note: The concentration index measures the degree of income-related inequalities in the probability of colorectal cancer screening. The error bars represent the 95% confidence intervals. If the concentration index is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality.
Source: OECD calculations based on national health surveys.

## Annex Figure 3.A.11. Inequality index for the probability of breast cancer screening




Note: The concentration index measures the degree of income-related inequalities in the probability of breast cancer screening. The error bars represent the 95% confidence intervals. If the concentration index is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality.
Source: OECD calculations based on national health surveys.

## Notes

[1] In practice, the surveys do not allow for such a clear-cut distinction because the first visit in a year does not necessarily need to be a patient-initiated visit, and neither do we know whether subsequent visits in the same year are necessarily doctor-initiated (ibid).

[2] Change over time is measured by computing the difference between the concentration indexes in the present study and the concentration index in the 2012 study. An increase (decrease) in inequality is assumed to be meaningful if the difference is greater (lesser) than 0.02 (-0.02).

[3] For this discussion, countries were divided in 3 groups of relatively high/low and intermediate level of inequality based on the value of the GCI for each cancer separately.

[4] Numerous sensitivity analyses were carried out using in particular a range of Principal Component Analyses on different sets of variables (those listed above or subsets of them, as well as adding flu immunisation, the number of GP and specialists visits). Different ways of dealing with missing information (mainly the facts that the Unites States does not distinguish GP and specialist visits) were also tested to produce another range of groupings. Chile was excluded from the final analysis: the results across grouping methods were not very stable and the fact that the reporting period for services was very different from all other countries for all services probably limits comparability. The final grouping distinguishing relatively low, medium and large is based on the average rank. These “convenient thirtiles” are based on the level of this average with minor adjustment of the boundaries to ensure countries more systematically fall into the group other analyses suggested they should fit in.

[5] The OECD distinguishes three dimensions of quality: (a) effectiveness, which describes the health system’s ability to achieve clinically desirable outcomes; (b) safety, which is about avoiding adverse health outcomes due to health care; and (c) responsiveness, which refers to how a system treats people to meet their legitimate expectations (Carinci et al., 2015[24]).

# 4 Inequalities in unmet needs for health care

This chapter focuses on individuals who have faced barriers in accessing health care and as a result declare that their needs have not been met, and it assesses the extent to which the distribution of unmet needs is unequal across income groups. The chapter starts with a brief discussion of the unmet needs variable and how it relates to other access measures. Unmet needs across income groups are then analysed for 31 countries. Reasons for unmet needs which are more linked to the supply of services - distance and waiting time - are first reviewed, followed by affordability. Where possible, the analysis of unmet needs for financial reasons explores medical care, dental care and prescription drugs separately. The chapter concludes by analysing patterns of unmet needs across countries.

Note by Turkey:
The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

Note by all the European Union Member States of the OECD and the European Union:
The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

## 4.1. Introduction

The fact that people use health care services does not mean that their needs are systematically or adequately met. The report's introductory chapter identified a range of possible outcomes when people turn to the health system. In most cases, they will receive care, hopefully of appropriate quality, even if some may suffer from financial hardship in the process. However, for a range of reasons, their needs may not be (fully) met if they face some barriers in accessing specific services and, as a result, either postpone or give up on the idea of seeking out services they felt they needed.

This chapter examines unmet needs for medical care across EU and OECD countries. It starts with a short discussion of the unmet needs variable, which highlights in particular that results on levels of unmet needs in countries are sensitive to the precise nature of the question asked (4.2). Based on data from national health surveys, it then turns to an analysis of inequalities in access to care due to problems with long waiting times and distance (4.3) and for financial reasons (4.4) before concluding by assessing whether some countries systematically display larger inequalities in unmet needs (4.5).

## 4.2. Unmet needs for health care: a commonly used indicator of access

### *4.2.1. Unmet needs: a pragmatic but specification-sensitive indicator of access*

Asking people whether their needs for care have been met is a pragmatic way of capturing barriers in access to health services. Yet, measuring unmet needs for health care presents a number of methodological challenges (EXPH, 2017[1]). A comprehensive approach to the issue would require: (i) an understanding of the nature of a person's specific needs based on her/his health status, illness and preferences; and (ii) an assessment of whether these needs have been adequately met according to clinical standards factoring in options effectively available to patients. This type of exercise, which would already be challenging at a single disease level, does not lend itself to establishing a measure of (lack of) access at the level of a health system for an entire population. Thus, in most cases, unmet needs are simply measured based on people's perception collected in surveys, which also generally seek to concurrently identify the type of barriers people faced, for instance, cost, distance, or waiting time.

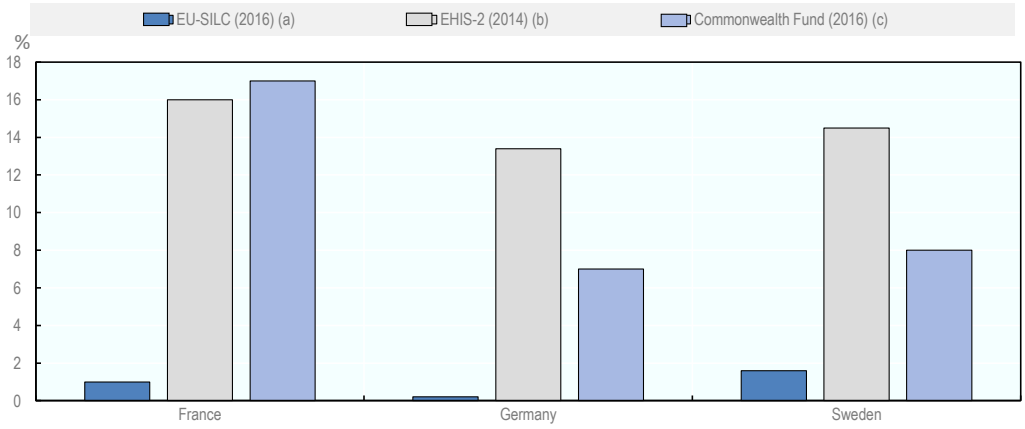
Unmet needs is a frequently used measure of access to health care in Europe and OECD countries. The European Commission most recently reaffirmed the importance of this indicator when it proclaimed the European Pillar of Social Rights in 2017 (Tajani and Juncker, 2017[2]) and chose a Social Scoreboard of 12 core indicators to monitor its implementation. For health, the declaration stipulates that "*everyone has the right to timely access to affordable, preventive and curative health care of good quality*" and the core indicator measuring achievements is "self-reported unmet needs for medical care". Within Europe, data on unmet needs is available from a variety of surveys, for example, the EU-Statistics on Income and Living Conditions (EU-SILC) undertaken annually since 2005, the European Community Household Panel (ECHP), the Survey on Health, Ageing and Retirement in Europe (SHARE), and the European Health Interview Surveys (EHIS) which covers 28 EU Member States, Iceland and Norway. Beyond Europe, countries asking respondents about unmet needs in national surveys include, for instance, Canada, the United States, Chile, Korea, New Zealand and Turkey. Finally, the International Health Policy survey carried out by the Commonwealth Fund in 11 industrialised countries also provides data for Australia and Switzerland (in addition to the previously listed countries).

Unfortunately, data on unmet needs are not always collected in a harmonised and consistent manner. Unmet needs measures suffer from comparability issues which may arise, even in seemingly comparable surveys from differences in sampling methods, translation of the question, and cultural biases (Ecorys Nederland B.V., Erasmus University Rotterdam and GfK Belgium, 2017[3]). The main concern is that levels of unmet needs may greatly vary within countries depending on the survey method used and the

formulation of the question. For example, the EU-SILC, EHIS, and the Commonwealth Fund surveys report different levels of unmet needs for financial reasons within countries (Figure 4.1). Despite these issues, results from 31 surveys were deemed sufficiently compatible to be considered for inclusion in the analysis presented in this chapter (see Box 4.1).

## Figure 4.1. The level of unmet needs due to financial costs varies across surveys

Share of unmet needs for medical care due to financial reasons in three countries, by different survey




Note: (a) Unmet need for medical examination due to financial reasons. (b) Unmet need due to financial reasons for medical care, dental care, medicines, and mental health problems. (c) Had a medical problem but –because of cost- did not visit doctor; skipped medical test, treatment or follow up recommended by doctor; and/or did not fill prescription or skipped doses.
Source: Commonwealth Fund International Health Policy Survey; Eurostat database for EU-SILC; Eurostat database for EHIS-2 for Germany and Sweden; OECD estimates based on EHIS-2 data for France.

## Box 4.1. Surveys and data used in this chapter

### European countries

Data from the European Health Interview Survey 2014 (EHIS wave 2) are used for European countries, including 27 EU Member States plus Norway and Iceland (29 European countries in total). Belgium did not ask respondents about unmet needs on the level of the individual.

The EHIS survey questionnaire (Eurostat, 2013[4]) appears more designed to prompt respondents to think about the barriers in access to care they face than to measure the overall level of unmet needs in health care systems. The first two questions on unmet needs enquire whether the person has “delayed health care” because of waiting times or distance/transport problems respectively. The instructions clarify that this should also cover instances when the people decided not to seek care for those reasons and that respondents should only mention instances where they felt these delays were detrimental to their health. The third question focuses only on situations where people decided to forgo care for financial reasons (as opposed to postpone or forgo in the first two questions) and enquires about specific types of care (medical, dental, prescription drugs, and mental health problems) in the past 12 months. Given the difference in formulation of the three questions, EHIS cannot be used to assess the relative importance of the three types of barriers in a given country.

An interesting feature of EHIS is that among people who do not declare having unmet needs, it distinguishes people whose needs were met from those who had ‘no need for health care’. In this chapter, by default, the proportion of people with unmet needs exclude people who answered having

'no need for health care', except in France and Sweden where the distinction was not made in the questionnaire. As a result, the proportion of the population declaring unmet needs for these two countries are underestimated when compared with the rest of Europe (since the denominator contains both people who are no sick and those sick without unmet needs).

**Canada (partially included)**

The Canadian Community Health Survey 2014-15 (CCHS) collects a range of individual information, including unmet needs due to waiting time, transport problems, and financial reasons in the past 12 months. The Canadian survey enquires about "difficulties experienced in obtaining care" which is broadly comparable with the EHIS questions asked in terms of "postponing or forgoing care" (for waiting times and transport problems). However, it is less comparable with the EHIS formulation of the question on unmet needs for financial reasons which only mentions forgoing care. Data for Canada is thus limited to unmet needs for transport and waiting times. Like EHIS, the CCHS identifies people with no need for care and they are excluded from the analysis making it directly comparable with EHIS results.

**United States (partially included)**

The Medical Expenditure Panel Survey 2016 (MEPS) is used for the United States. It collects information on unmet needs for medical care, dental care and prescription drugs. It enquires about delayed and forgone care in the past 12 months but does not distinguish people with no need for care (as in Sweden and France above). Furthermore, for those who had unmet need, only the main reason is identified (in the European surveys, reasons for unmet needs are not mutually exclusive). As 85% of those reporting unmet needs name cost as the main reason, the chapter only presents inequalities across income groups for unmet needs for financial reasons (for the three types of care available).

### *4.2.2. On average, more than one in four adults report facing barriers in access across EU and OECD countries*

Based on an analysis of the different surveys available, on average, around 28% of adults who felt they had a need for care in the past 12 months reported having either forgone care due to financial reasons, or delayed or forgone care due to long waiting times or distance to travel or transport problems. This proportion ranges from 10% in Norway to 47% in Ireland (see Annex Table 4.A.3). In Sweden and France, around 30% of adults declared unmet needs. In Canada, 19% of adults who had a need for care in the past 12 months reported these were not met due to waiting times or transport problems alone.

Data from the European surveys provide an opportunity to analyse simultaneously people's perception of unmet need and their actual needs and utilisation – questions seldom explored. The following sub-sections examine whether (i) people who declare experiencing unmet needs for medical care consume fewer services than those who do not and (ii) whether people with a chronic disease who have no contact with the system declare unmet needs.

*In many countries, people who experience barriers to care have a lower utilisation of health services than those who do not.*

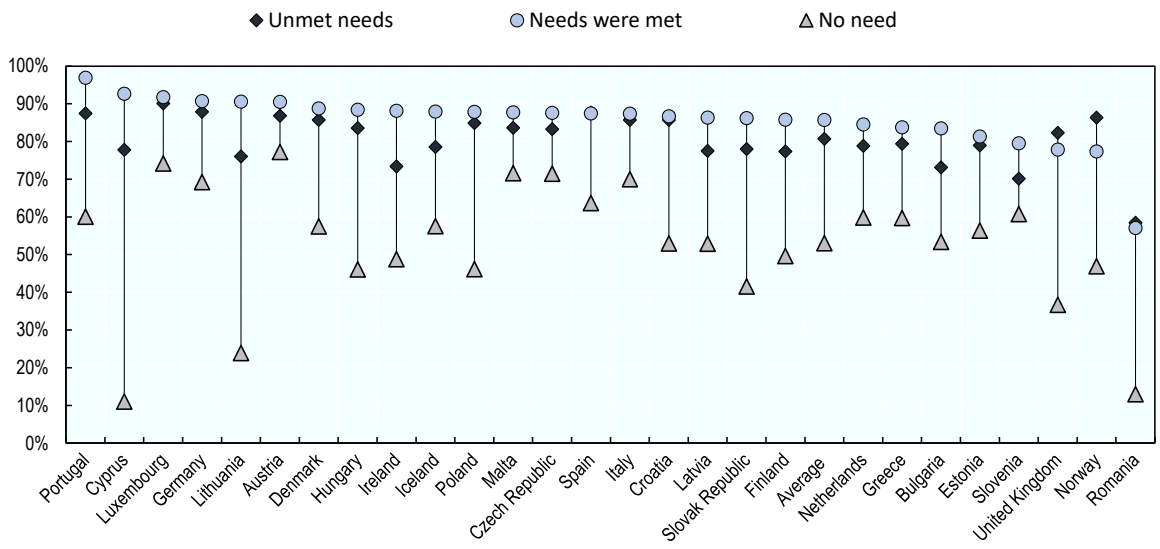
In general, actual patterns of utilisation are consistent with people's perception of their needs. More specifically, people who declare having 'no need for medical care' have far fewer visits to a doctor in the year than people who have needs – regardless of whether these were met or not. Among people who declare having needs, those who do not experience any barrier to access care, usually are more likely to have seen a physician than those who experienced such barriers. Figure 4.2 presents the needs-adjusted probabilities of seeing a doctor[1] for three groups of people: those declaring no needs for medical care, those whose needs for medical care were met, and those who declare having forgone medical care for

financial reasons[2]. In all countries, people without needs for care have a lower probability to see a doctor than those who do, which is consistent with expectations.

In most countries, among people who said they had a need for care, people who experienced no financial barrier to access medical care have a higher likelihood of doctor visits than those who experienced financial barriers[3]. This suggests that the financial barriers people express they have experienced do translate to an extent into lower access. The difference between the probabilities of these two groups is significant in 18 out of 27 countries. In seven countries (Croatia, Denmark, Estonia, Luxembourg, Malta, Romania and Spain), the difference is not significant, while in Norway and the United Kingdom, people who have 'unmet needs for financial reasons' have a significantly higher probability of doctor visit than those whose needs were met.

A similar but more marked pattern is observed for dental care. For this type of service, people who declare unmet needs are considerably less likely to have actually seen a dentist compared to those without unmet needs. In all but two countries, people with no need for dental care have a lower probability of visit than those with needs, regardless whether these were met or not. Denmark and Norway constitute an exception where people with unmet needs for dental care are significantly less likely to have visited a dentist than people who declared they had no need. Furthermore, in all but three countries (Romania, Slovenia and Hungary), people whose needs were met have a higher probability of having seen a dentist than those whose needs were not met; the difference in these probabilities is on average 24 percentage points – three times as high as the 8 percentage point difference for medical care.

## Figure 4.2. Needs-standardised probability of a doctor visit, in relation to perception of unmet needs



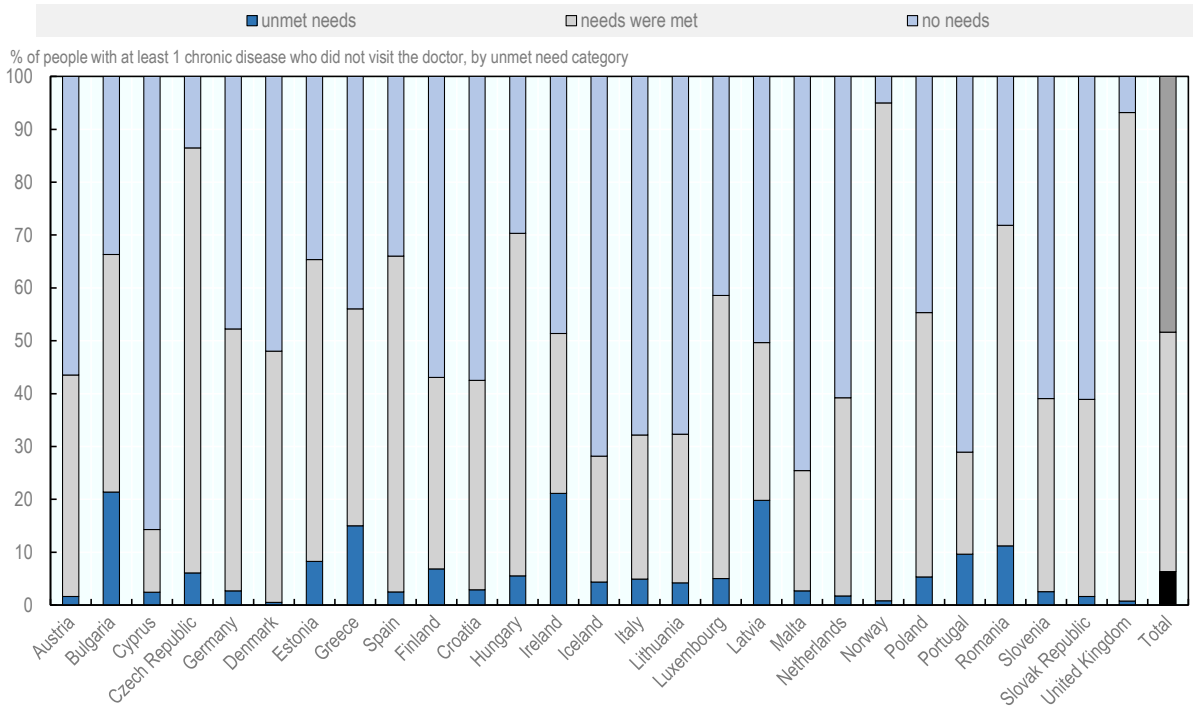

Note: People are categorised into three groups: those with needs who have forgone medical care due to financial reasons, those with needs who have not forgone medical needs due to financial reasons, and those who have no need for medical care. For each group, the mean of the needs-adjusted probability of doctor visits is calculated.
Source: OECD estimates based on EHIS-2 data.

*Some people who can be expected to have regular contacts with the system fail to do so but generally do not attribute this to barriers in access.*

Given the widespread use of self-declared unmet needs, it is interesting to explore whether people who might be objectively deemed in need for some level of medical care actually feel that way. Following a suggestion set out in a recent report (Ecorys Nederland B.V., Erasmus University Rotterdam and GfK Belgium, 2017[3]), data from the European survey was used to identify people who declare having a chronic disease but have not in fact seen a physician in the year prior to the survey. The broad-brush assumption is that given the importance of managing chronic conditions to avoid potential deteriorations, one would expect people who know they have a chronic disease to have at least one contact with the doctor in the year.

The data suggests that 10% of people with at least one chronic condition have actually not seen a physician during the year prior to the survey[4]. Interestingly, more than half (53%) of these people report that their needs for medical care were met during the year and 43% said "they had no need for medical care" (Figure 4.3). Only 4% state that "they have unmet needs for medical care due to financial reasons". In other words, 96% of the adults with a chronic condition who have not seen a doctor for over a year report no needs for care or no unmet needs. Although not all people with chronic diseases may indeed need to see the doctor once a year, this finding highlights some potential biases of unmet needs variables: some people who declare no need may not realise they objectively need health care which suggests issues with properly understanding their condition; others may choose not to rely on physicians to manage their condition and may turn to nurses or other health professionals to carry out routine check-ups.

## Figure 4.3. People with at least one chronic disease who did not visit a doctor mostly reported their "medical needs were met"




Source: OECD estimates based on EHIS-2 data.

## 4.3. Lower income people are often less likely to find services readily available

People who have to travel far for care or cannot secure timely access may decide not to turn to the health system or postpone doing so. This section analyses unmet needs due to waiting times or distance and reviews whether they are more prevalent among the less well-off.

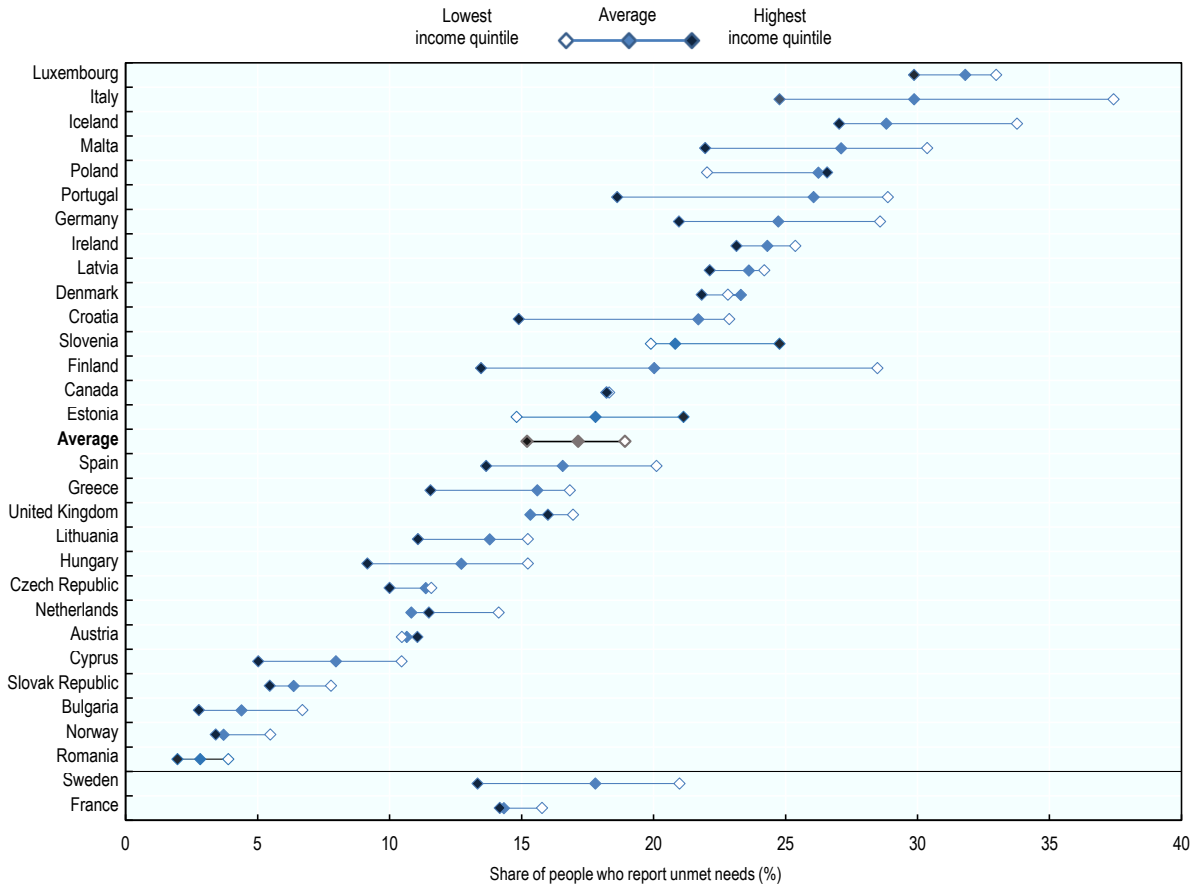
### *4.3.1. Delays in obtaining care due to waiting times are more frequent among low-income people in half of the countries studied*

The proportion of people declaring having delayed or forgone health care due to waiting time varies across health systems. On average in EU and OECD countries, 18% of adults report having delayed or forgone health care due to waiting times. Figure 4.4 presents the average levels of unmet needs for this reason, ranging from 3% in Romania to 32% in Luxembourg.

Problems with access due to waiting times are more common among people with low income in more than half of countries. Yet, across EU and OECD countries, the difference in the proportion of high- and low-income adults facing long delays is not very large: 20% of people with the lowest level of income are likely to report delayed or forgone care due to waiting times compared to 16% of the population in the highest income segment. However, these averages mask variable patterns across countries. The poor have a significantly higher probability than the rich of postponing care due to waiting times in 16 out of 30 countries and the gap is between 7 and 15 percentage points in Croatia, Italy, Malta, Sweden, Germany, Portugal and Finland. In Estonia, Slovenia and Poland, people with high income are more likely than those with low income to declare postponing or forgoing care due to waiting times (Annex Table 4.A.3).

This trend is also confirmed when the entire population is analysed, as opposed to limiting the analysis to a comparison of the two most extreme income groups' average view. In most countries, at population level, the higher people's income is, the less likely they are to delay or forgo care due to waiting times in half of the countries. The income-related gradient of inequality, measured with the generalised concentration index (GCI) (see Box 3.1 in Chapter 3) that takes into account the full distribution of unmet needs across income levels, is negative in all but 5 out of 30 studied countries, indicating the probability of foregoing care due to waiting time increases as income falls. However, the GCI is only significant in 16 countries (Annex Table 4.A.3 and Annex Figure 4.A.1). The gradient is reverse and significant in Estonia and Poland, where people declare more unmet needs due to waiting time when their income increases. The difference across the income distribution is not significant in twelve countries (Austria, Canada, the Czech Republic, Denmark, France, Iceland, Ireland, Latvia, Luxembourg, the Netherlands, Slovenia and the United Kingdom).

## Figure 4.4. Unmet needs due to waiting times, by income quintile



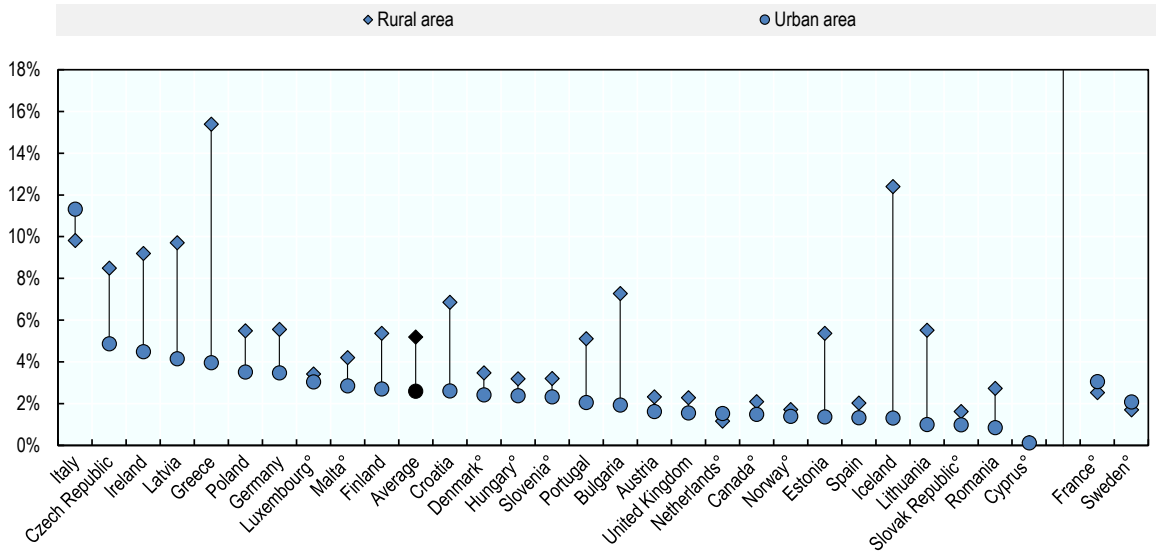

Note: Data from 29 European countries and Canada. The analysis is restricted to people who had needs for health care, except in France and Sweden where people with needs and those with no needs could not be distinguished. The average does not include these two countries.
Source: OECD estimates based on national health survey data.

### *4.3.2. In most countries, delayed or forgone care due to transport problems is concentrated among those with low income and people living in rural areas*

Problems to access health services caused by long travelling distance or transport issues vary across countries. Among people who have needs for health care, overall in EU and OECD countries, 4% of adults report having delayed or forgone care due to distance or transport, with this share ranging from 0% in Cyprus to 9% in Italy. Spain and Norway stand out as countries where landmass and geography could potentially undermine access and yet the proportion of people experiencing transport and distance problems are among the lowest of all 30 countries.

Virtually everywhere, people living in rural areas are more likely to delay or forgo care due to distance or transport problems than those in urban areas. Figure 4.5 displays the proportion of rural and urban dwellers encountering this type of issue. People living in rural areas have a higher proportion of unmet needs due to distance in nearly all countries, and this difference is significant in 18 countries. The largest gaps are observed in Iceland and Greece. Italy, which has the highest proportion of unmet needs due to distance, stands out as the only country where distance and transport issues are significantly (although not considerably) larger in urban than rural areas.

## Figure 4.5. Unmet needs due to distance or transport problems, by degree of urbanisation

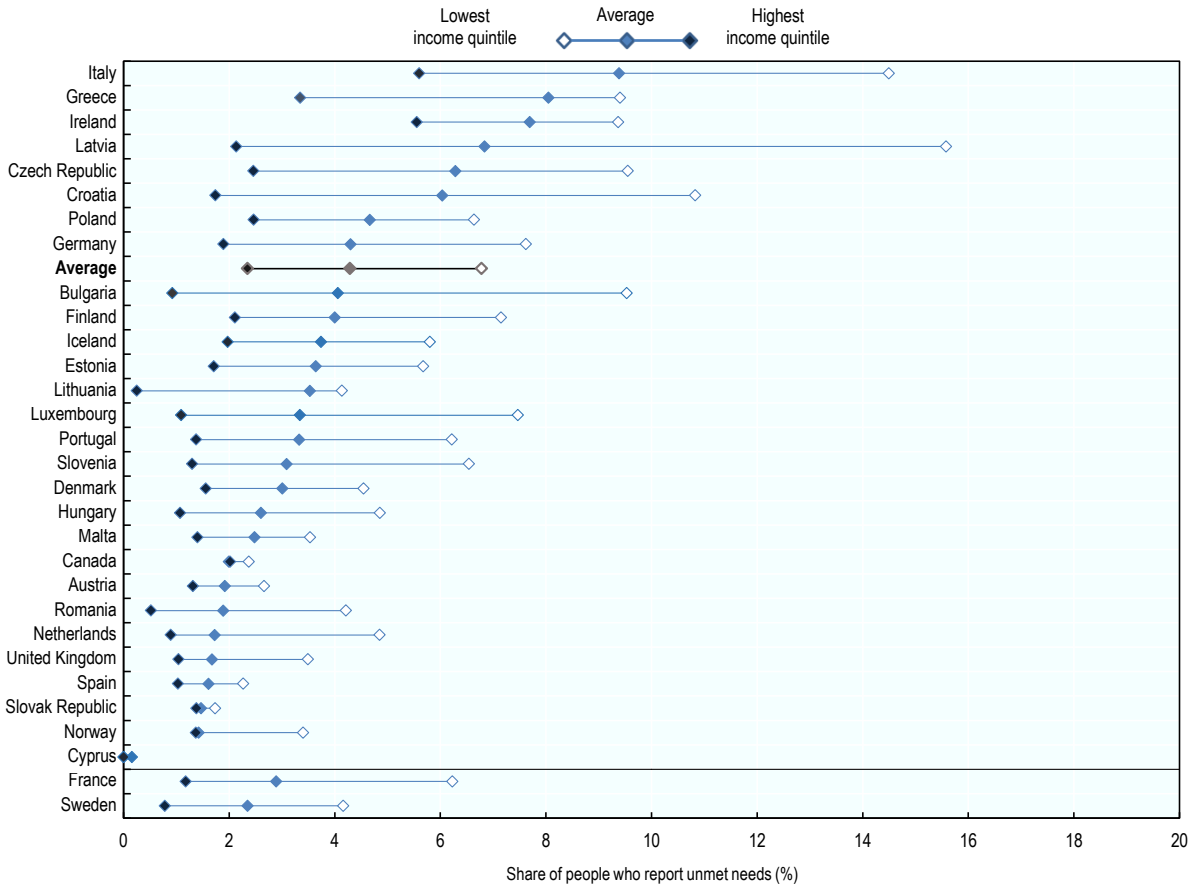



Note: The analysis includes 29 European countries and Canada. The analysis is restricted to people who had needs for health care, except in France and Sweden where people with needs and those with no needs could not be distinguished. The average does not include these two countries. ° indicates countries for which the difference is not significant.
Source: OECD estimates based on national health survey data.

The higher people's income is, the less likely they are to experience difficulties in accessing care due to long distance or transport problems. Figure 4.6 illustrates the gradient of inequalities, showing the level of delayed or forgone care due to distance or transport problems for the people in the highest and lowest income quintiles. On average in EU and OECD countries, 6% of people in the low-income segment have not received care soon enough or not at all, compared to 2% of the population group with high income. The largest differences are observed in Latvia, Croatia, and Italy which are also among the countries with the greatest level of unmet needs due to distance or transport, as well as Bulgaria which, with 4% of people experiencing distance or transport problems, is just below average.

Unmet needs due to transport problems and distance increase as income decreases in all but four countries. The overall gradient of income-related inequality (measured by the generalised concentration index) is negative and significant in 26 countries. In Cyprus, Ireland, Canada and the Slovak Republic, the GCI is close to zero and not significant, suggesting that there are no notable differences in unmet need due to distance and transport issues across income groups in those countries (see Annex Table 4.A.3 and Annex Figure 4.A.2).

## Figure 4.6. Unmet needs due to distance or transport problems, by income quintile




Note: The analysis is based on 29 European countries plus Canada. The analysis is restricted to people who had needs for health care, except in France and Sweden where people with needs and those with no needs could not be distinguished. See Annex Table 4.A.3 for detailed results.
Source: OECD estimates based on national health survey data.

### *4.3.3. Summary of inequalities in unmet needs due to problems of service availability*

Care that is not within physical reach or would take too long to obtain is *de facto* not readily available to the patient in need. Overall, in the vast majority of EU and OECD countries, these problems are not evenly distributed in the population and affect the poor more. Table 4.1 summarises the direction and level of inequalities (and also ranks countries by degree of inequality).

### Table 4.1. Summary of inequalities in unmet needs due to availability issues

| Looking at the following availability issues, ↓ | Increases as your income becomes higher | No significant difference across income groups | Decreases as your income becomes higher |
|---|---|---|---|
| Probability of delayed or forgone care due to waiting times… → | POL, EST | SVN, LVA, FRA♦, CAN, LUX, DNK, AUT, GBR, CZE, NLD, IRL, ISL | ROU, NOR, SVK, BGR, GRC, LTU, CYP, SWE♦, ESP, HUN, DEU, HRV, MLT, PRT, ITA, FIN |
| Probability of delayed or forgone care due to distance or transport… → | | CYP, CAN, SVK, IRL | ESP, NOR, AUT, GBR, MLT, ROU, NLD, DNK, HUN, SWE♦, POL, EST, ISL, PRT, FRA♦, DEU, FIN, LTU, GRC, SVN, CZE, LUX, HRV, BGR, ITA, LVA |

Note: Within each cell, countries are ranked from lowest to highest degree of inequality using the generalised concentration index. (♦) Data for France and Sweden are not strictly comparable.
Source: OECD estimates based on national health survey data.

The highest levels of inequalities for waiting times are found in countries where the total proportion of people declaring unmet needs is above average[5]. This is the case when inequalities are clearly detrimental to the poor (Finland, Italy, Portugal) as well as more widespread among the rich (Estonia and Poland). By contrast, in Canada, Denmark, Latvia and Luxembourg, the high levels of unmet needs due to waiting times affect people of all income to a comparable extent (the GCIs are low).

For unmet needs due to distance and transport, Italy and Latvia stand out as countries where the proportion of people affected is among the highest and the inequalities to the detriment of the poor are the largest. In Greece and Ireland, the problem is also common but somewhat more equally distributed in the population. Bulgaria is a particular case where despite having near average level of unmet needs, inequalities to the detriment of the poor are very high.

## 4.4. Everywhere lower-income people are more likely to delay or forgo care because of the cost

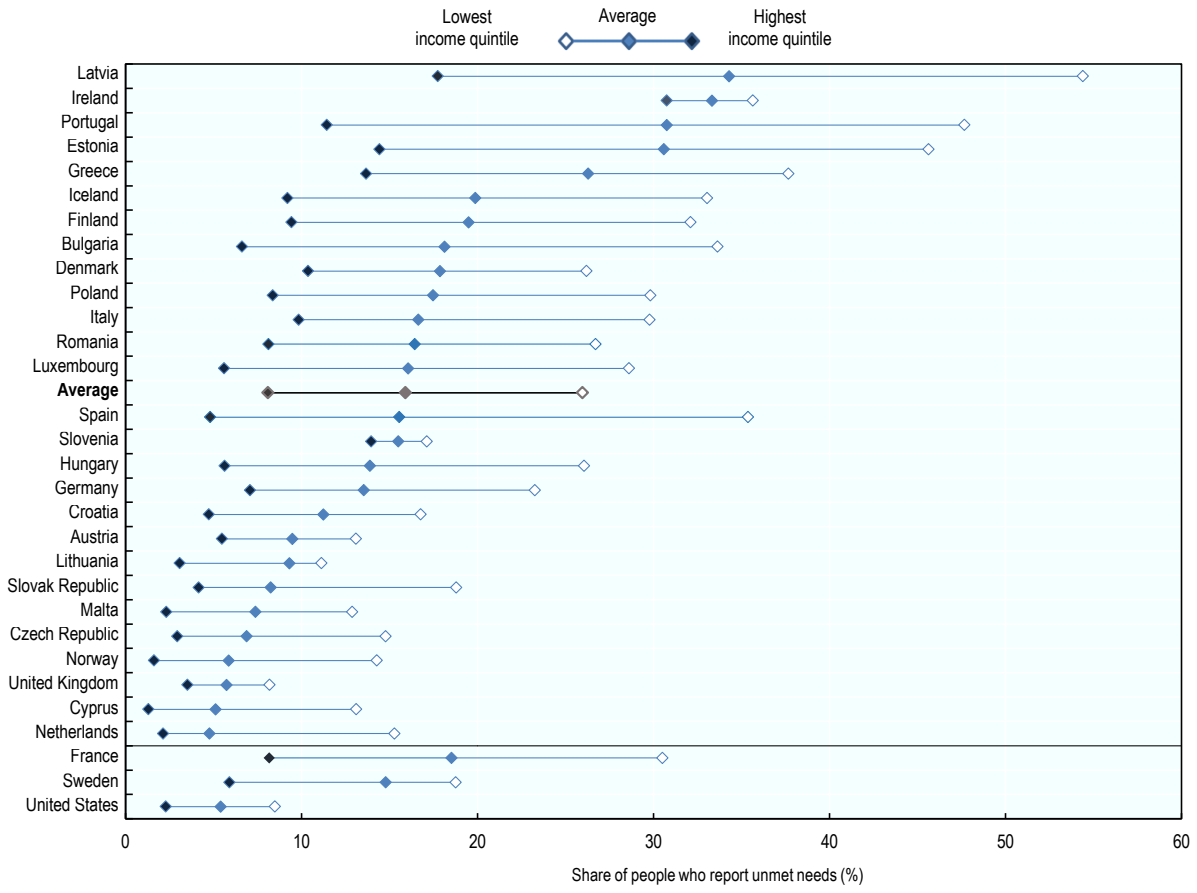
### *4.4.1. Affordability is more of a barrier to care among the poor*

On average in EU and OECD countries, in the year prior to the survey, 16% of adults decided not to seek care they feel they needed because they could not afford it. There are notable differences across countries with less than 6% of the population declaring unmet needs for financial reasons in the Netherlands, the United Kingdom, Cyprus and Norway and more than a quarter in Greece, Estonia, Portugal, Ireland and Latvia (Figure 4.7). Unsurprisingly, the less well-off are three times more likely to have unmet needs for financial reason than people with high income: across all countries, 26% of people in the lowest quintile forgo care for financial reasons compared to 8% of people in the highest income segment (Annex Table 4.A.3).

The proportion of people declaring unmet needs for financial reasons was only 5% in the United States, a surprisingly low figure, which suggests that despite asking seemingly comparable questions, when it comes to unmet needs, the American survey (MEPS) is of limited comparability with the European survey (EHIS)[6]. Indeed, the 2016 Commonwealth Fund Survey asked a question similar to the one from EHIS in six EHIS countries as well as the United States (see Annex Table 4.A.1). For EHIS countries, the percentage of people who responded having foregone care for financial reason was in the same range in

both surveys. In contrast, in the Commonwealth Fund Survey, 33% of adults in the United States responded having unmet needs for financial reason, nearly seven times more than in the MEPS.

## Figure 4.7. Proportion of the population forgoing care because of the cost, by income quintile




Note: Data from 29 European countries plus the United States. The analysis is restricted to people who had needs for health care, except in France, Sweden and the United States where people with needs and those with no needs could not be distinguished. These countries are excluded from the average.
Source: OECD estimates based on national health survey data.

The overall gradient of income-related inequality in unmet needs due to financial reasons is significant in all countries, and to the detriment of lower-income people (see generalised concentration index in Annex Table 4.A.3). Portugal, Latvia, Spain, Estonia and Iceland display the largest degrees of inequality, whereas Austria, Ireland, Slovenia and the United Kingdom have the lowest inequalities (Table 4.2).

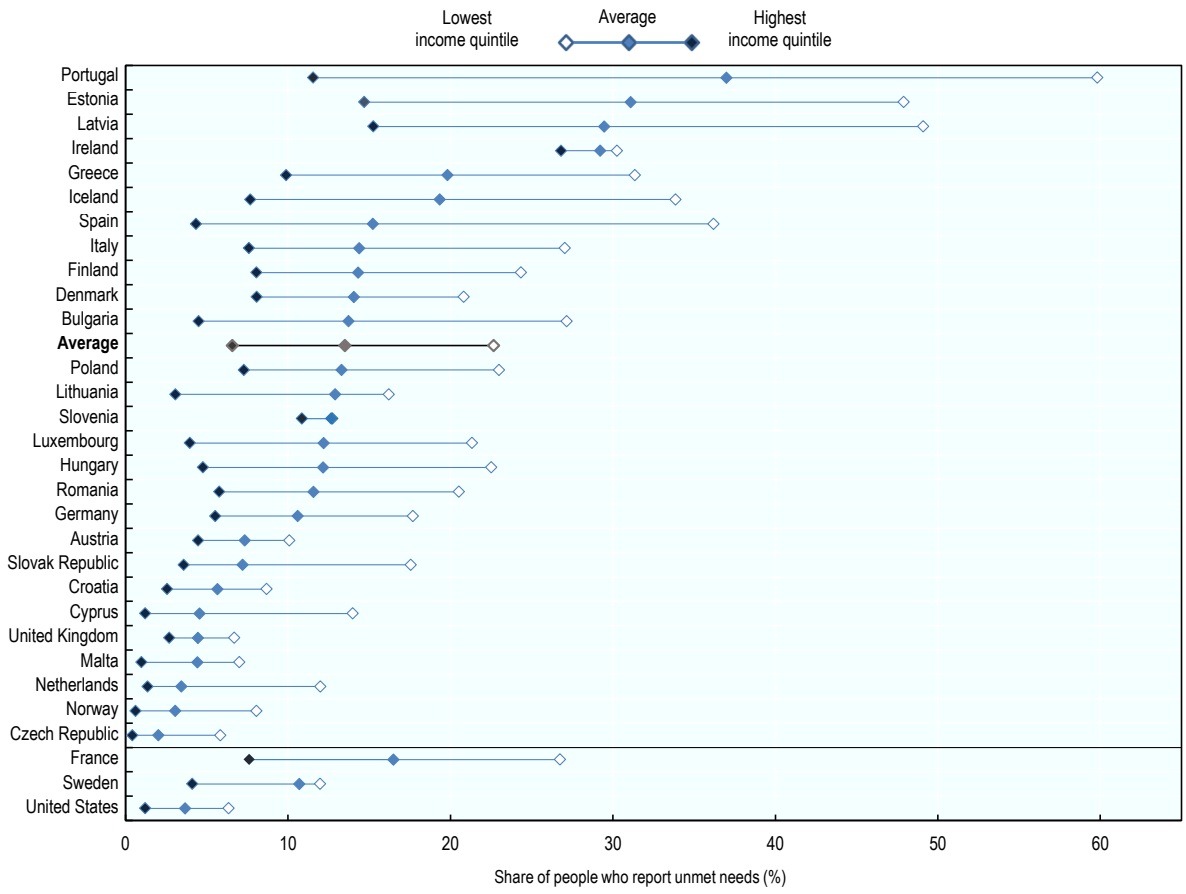
### *4.4.2. Dental care is more frequently forgone due to cost than medical care or prescribed medicines*

The remainder of this section looks at unmet needs due to financial reasons specifically for three types of care: medical care, dental care, and prescribed medicines. Information on forgone prescribed medicines is particularly interesting and can be construed as a more objective measure of unmet needs for financial reasons. Indeed, people not purchasing their prescribed medication chose not to follow a specific recommendation for treatment given by a professional because of the financial pressure.

Dental care is the most frequent type of care that people forgo because of financial issues. On average in EU and OECD countries, 14% of adults report unmet needs for dental care due to costs, compared to 8% for medical care and 7% for prescribed medicines. Variation across countries are large for these three types of care. Forgone dental care varies from 2% in Czech Republic to 37% in Portugal. Unmet need for medical care ranges from only 1% in Norway to 23% in Latvia, while forgone prescribed drugs stands between 1% in the United Kingdom and 18% in Latvia and Ireland.

People in the lowest income quintile have a higher proportion of unmet needs for financial reasons than those in the highest for medical, dental care and medicines in practically all countries. The largest gaps in unmet needs between the top and bottom quintile are found for dental care. Figure 4.8 shows that on average 7% of adults in the highest income group report foregoing dental care due to financial reasons, compared to 23% in the lowest income group. Similar patterns are seen for medical care and prescribed medicines. Regarding forgone medical care, the proportion is 4% in the highest income group versus 13% in the lowest income quintile, while it is 3% versus 13% for prescribed medicines (Annex Table 4.A.2).

## Figure 4.8. Proportion of the population with unmet needs for dental care due to financial reasons, by income quintile




Note: Data from 29 European countries plus the United States. The analysis is restricted to people who had needs for health care, except in France, Sweden and the United States where people with needs and those with no needs could not be distinguished. These countries are excluded from the average.
Source: OECD estimates based on national health survey data.

### *4.4.3. Summary of inequalities in unmet needs for financial reasons*

The higher people's income, the less likely they are to forgo care for financial reasons. The income-related gradient of inequality (measured with the generalised concentration index) is negative and significant in virtually all countries for all types of care, with varying degrees of inequality across countries (see Annex Figure 4.A.3-6). Table 4.2 summarises the degree of inequalities in unmet needs for financial reasons for the three types of care as well as overall.

**Table 4.2. Summary of inequalities in unmet needs due to financial reason**

| Looking at affordability, ↓ | No significant difference across income groups | Decreases as your income becomes higher |
|---|---|---|
| Probability of forgone care (medical, dental, mental, or prescribed drugs) due to cost… → | | GBR, SVN, USA♦, IRL, AUT, CZE, MLT, CYP, NOR, LTU, SWE♦, HRV, NLD, SVK, DEU, ROU, ITA, DNK, POL, HUN, GRC, LUX, FIN, BGR, ISL, FRA♦, EST, ESP, LVA, PRT |
| Probability of forgone medical care due to cost… → | SVN, IRL | GBR, USA♦, DNK, NOR, AUT, SWE♦, LTU, SVK, DEU, MLT, ESP, CZE, NLD, HRV, LUX, HUN, ROU, CYP, POL, FRA♦, EST, FIN, ISL, ITA, PRT, BGR, GRC, LVA |
| Probability of forgone dental care due to cost… → | SVN | CZE, GBR, HRV, AUT, IRL, MLT, USA♦, NOR, SWE♦, NLD, CYP, DEU, SVK, ROU, POL, FIN, DNK, LUX, HUN, ITA, BGR, GRC, FRA♦, ISL, EST, LVA, ESP, PRT |
| Probability of forgone prescribed drugs due to cost… → | IRL | USA♦, GBR, AUT, SWE♦, CYP, LTU, NLD, NOR, SVN, CZE, DEU, ESP, HRV, MLT, ITA, DNK, ROU, LUX, SVK, EST, HUN, FIN, ISL, POL, GRC, PRT, BGR, LVA |

Note: Countries are ranked from lowest to highest degree of inequality using the generalised concentration index. (♦) Data for France, Sweden, and the United States are not strictly comparable.
Source: OECD estimates based on national health survey data.

Taken at population level and measured with GCIs, inequalities are significant and detrimental to those with lower income for the three types of care nearly everywhere (as well as for the combination variable which, in addition, includes mental health[7]). Latvia and Portugal are among the countries displaying the highest inequality for all three types of care as well as overall. Greece and Bulgaria are in the top third of countries for inequalities in unmet need for financial reason overall and stand out as having particularly high inequalities for both prescription medicines and medical care. In Iceland, Finland and Poland, the proportion of people not filling a prescription because of the cost is well above average and inequalities to the detriment of the poor are particularly high.

Countries where inequalities in unmet needs due to costs are low generally have lower levels of unmet needs, with some exceptions. The United Kingdom, for example, displays low levels of inequalities for all four variables and indeed has overall low levels of unmet needs (around 6% of people foregoing any type of care). However, some countries with substantially higher overall levels of unmet needs, such as Austria (9%), Slovenia (15%) and Ireland (33%) also display very low levels of inequalities. On the other hand, Norway, the Netherlands, Cyprus and the Czech Republic have similar levels of overall unmet needs for financial reasons as the United Kingdom, but the inequalities across income groups are more pronounced.

## 4.5. Synthesis and conclusions

Asking people whether they faced barriers when trying to access care and the type of barrier they faced provides useful insights into how accessible a health system is, a key dimension of health system performance. The usefulness of this type of indicator is well understood in at least 35 of 41 EU and OECD

countries which inquire about unmet needs in national surveys. Unfortunately, the levels of unmet needs reported depend to a large extent on the way the questions are asked, limiting the comparability across countries. Looking forward, additional efforts should be made to harmonise questionnaires which could also include questions regarding cultural appropriateness of care.

This chapter provides new evidence on the level of unmet needs for health care and their degree of income-related inequalities across EU and OECD countries, based on national health survey data for 31 countries.

### *4.5.1. All types of unmet needs are more concentrated among the least well-off*

Delaying and forgoing care due to problems with availability or affordability is common in EU and OECD countries. In the year preceding the survey, more than a quarter of adults who felt they had a need for care had faced some barriers in accessing services. This proportion ranged from 10% in Norway to more than 40% in Estonia, Iceland, Latvia, Portugal, and Ireland.

In nearly all EU and OECD countries, there is a clear social gradient in unmet needs. The results presented in this chapter consistently show that lower-income people experience more barriers to accessing care than the better off, with variations across countries and across reasons for unmet needs. These findings are aligned with previous studies which indicate that low-income people concentrate more unmet needs for health care than high-income people (Eurostat, 2018[5]; Fjær et al., 2017[6]).

Turning to the different types of unmet needs:

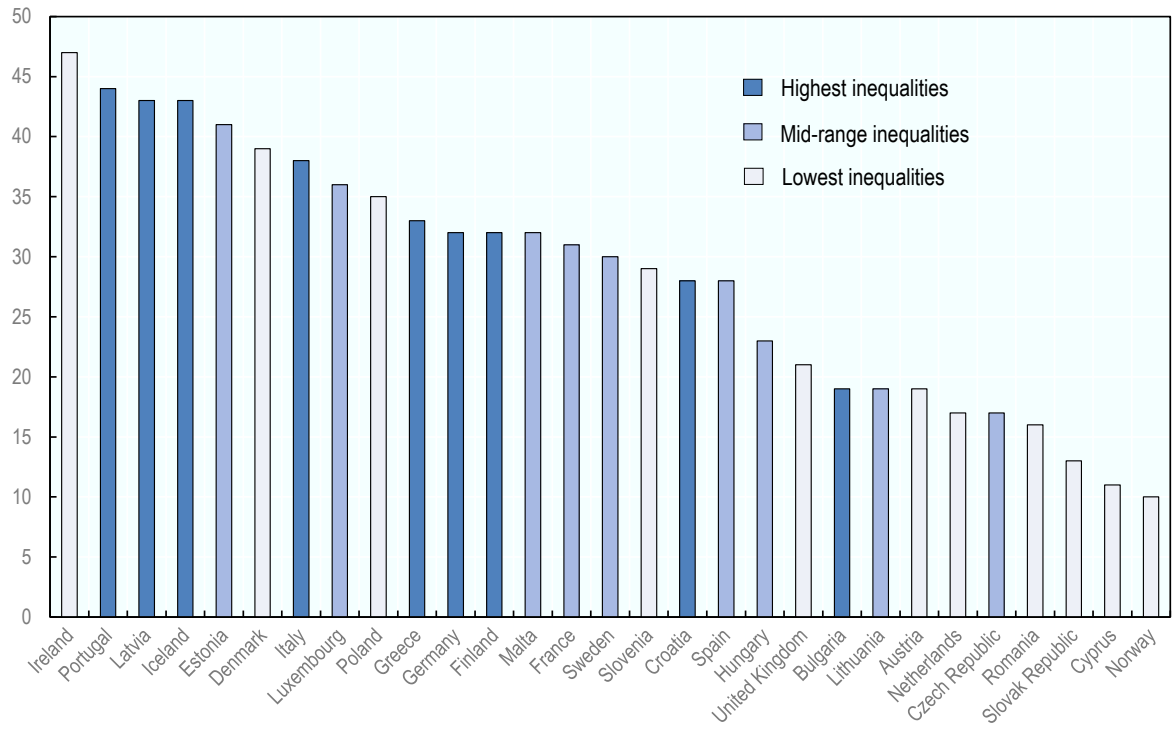
- Unmet needs due to long waiting times rise when households' income decreases in more than half of the countries. On average in EU and OECD countries, people in the lowest income quintile have a 20% chance of having postponed care versus 16% in the highest income quintile. This gap is between 7 and 15% in Croatia, Italy, Malta, Sweden, Portugal, Germany and Finland and inequalities significantly disadvantage the poor in 16 countries.
- Unmet needs due to long distance or transport problems also increase as income decreases in virtually all countries. On average in EU and OECD countries, 6% of people with low income have not received care soon enough or not at all for these reasons, compared to 2% in people with high income. The gradient of inequality to the disadvantage of the poor is significant in 26 countries. This type of unmet need is most common and very unequally distributed in Latvia, Croatia and Italy.
- The poor have more unmet care needs due to costs than the rich in all countries. 26% of people in the lowest income segment decided not to avail care they needed due to financial reasons (either medical care, dental care, a prescribed medicine, or mental health care) compared to 8% of people with the highest level of income. Portugal, Latvia, Spain, and Estonia display the largest degrees of inequality, whereas inequalities are smallest in Austria, Ireland, Slovenia and the United Kingdom.

### *4.5.2. Some countries concentrate inequalities in unmet needs*

The final question is whether patterns emerge for some countries when considering jointly the degree of inequality in the various types of unmet needs described above. The grouping presented in Figure 4.9 and further explained in Annex Table 4.A.4 results from ranking each countries' level of inequality for each unmet need reason separately (based on the GCIs). The sum of the three ranks is used to identify countries with overall higher, lower and intermediate levels of inequality in unmet needs. Figure 4.9 ranks countries by decreasing proportion of people who declared at least one unmet need of any type while the colour of the bar indicates the level of inequality based on the grouping explained above (darker shades correspond to more widespread inequalities to the detriment of the poor). This analysis shows:

- The highest income-related inequalities for unmet needs to the detriment of the poor are found in Portugal, Italy, Finland, Bulgaria, Croatia, Latvia, Iceland, Greece and Germany. In seven of these countries, the proportion of people with at least one unmet need is above or at the average of all countries considered (28%). Bulgaria stands out as having a relatively low level of unmet needs but very large inequalities to the detriment of the poor.
- In the Netherlands, Denmark, Poland, Romania, Ireland, the Slovak Republic, Slovenia, Cyprus, Norway, the United Kingdom and Austria, inequalities in unmet needs are the most evenly distributed across income groups. Unmet needs in seven of these countries are below average. Ireland, Denmark and Poland stand out in this group because their very high levels of unmet needs (above 35%) seems to affect all income groups in a similar fashion.
- Hungary, Spain, France, Luxembourg, Lithuania, Sweden, Estonia, Czech Republic and Malta have more intermediate levels of inequalities in unmet needs.

## Figure 4.9. Proportion of people with any unmet need and summary level of inequalities, European countries




Note: The date for Sweden and France are not strictly comparable (level of unmet need underestimated). The whole range of information used in the synthesis was not available for Canada and the United States and they are not included.
Source: OECD calculation based on national health survey data.

These results suggest that countries with lower (higher) levels of unmet needs generally also have lower (higher) levels of absolute inequalities, but the correlation is not very strong. There are in fact many exceptions. In Ireland, the country with the highest reported level of unmet needs in the survey, people from all levels of income are equally affected. It is possible that the entitlement criteria to obtain a Medical Card, which –with some exceptions- is only available for people below a certain income level-, plays a role in limiting inequalities, but the fact remains that a large proportion of adults feel constrained in their access to care.

Generally, the results in this chapter provide experts with information to refine their understanding of unmet needs and assess how important it is to design measures which more specifically target the least well-off if they are indeed more frequently facing access barriers.

### *4.5.3. Policy responses must be adapted to the barriers to care and target those most affected*

While inequalities in accessing health care to the detriment of the poor for reasons of availability as well as for affordability can be observed in nearly all EU and OECD countries, the policy options to address these issues may differ. Generally, these policies can also aim to reduce inequalities in the utilisation of services as indicated in Chapter 3.

One policy option to redress inequalities in unmet need or service utilisation is related to health literacy. As was shown in this chapter, a notable proportion of people with chronic conditions do not see the need for regular visits to a doctor. Some of this may be explainable by a lack of understanding of their condition. It also has an inequality aspect since health literacy is generally lower among socially disadvantaged people, creating a barrier in understanding and applying health information which results in problems navigating the health system effectively. Lack of health literacy can hence lead to a lower than appropriate utilisation of health care services. Policy responses to address the lack of health literacy include interventions aiming to develop individual's knowledge and empowerment to act on health information (e.g. counselling and training sessions at the community level), and to promote an enabling environment to ease understanding health information (e.g. ease access to information, improve professionals' communication skills) (Moreira, 2018[7]).

In some countries, particular minority groups of low socio-economic status, such as indigenous people or migrants may face additional barriers when accessing the health system related to language and cultural barriers but also discrimination exacerbating health inequalities. Policies to address these issues should aim at building capacity of health service providers to provide culturally safe and responsive services and by developing culturally appropriate resources to support health literacy for these population groups (e.g., interpretative services, awareness and understanding of different beliefs, values and lifestyle).

Improving the availability of services is for a large part a matter of working on service delivery – making sure that care is available near the place where people live and at times when people need to use the system. One issue impeding equal access in many OECD countries is the uneven geographic distribution of doctors and the difficulties in recruiting and retaining doctors in certain regions especially those in remote and sparsely populated areas. Generally, the density of physicians is consistently greater in urban regions, reflecting the concentration of specialised services such as surgery and physicians' preferences to practice in urban settings (OECD/EU, 2018[8]). A number of OECD countries have taken actions to improve service availability in underserved areas, either by targeting medical students early in their training to convince them to pursue a career in rural areas, by providing financial incentives to physicians to practice in remote areas or by re-orientation of service delivery models towards more team-based practice models including an expanded scope of practice by nurses (OECD, 2016[9]). A more widespread use of telemedicine solutions such as the remote patient monitoring in particular in rural areas could also help to reduce the urban-rural divide in service access. One particular issue limiting the availability of primary care services is related to the short opening hours of GP practices which may force patients to go to hospital emergency departments instead if community-based services are otherwise not available. Here, OECD countries implemented a range of solutions to improve access and quality of out-of-hours primary care including incentives to doctors to extend their normal office hours, organisational support to encourage the participation of primary care physicians to deliver out-of-hours primary care and making greater use of other health professionals (Berchet and Nader, 2016[10]).

Long-waiting times for inpatient and outpatient treatment can be related to lack of physical infrastructure and workforce shortages but, in some cases, may also be due to inefficiency in the care delivery process.

In some countries, people with complementary private health insurance (which is typically concentrated among the better-off) may be able to “jump the queue” and receive care quicker than those waiting on public waiting lists, adding a social dimension to this problem. For surgery, waiting time guarantees have become the most common and effective policy tool in OECD countries to tackle long waiting times (Siciliani, Borowitz and Moran, 2013[11]). These can be enforced either by setting waiting time targets and holding health providers to account for achieving the targets, or by allowing patients to choose alternate health providers, including the private sector, if patients have to wait beyond a maximum time.

Unmet need due to lack of affordability is strongly related to lack in coverage. Chapter 5 of this report focuses on this topic and explores this relationship in detail.

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# Annex 4.A. Additional results on unmet needs

## Description of variables

### Annex Table 4.A.1. Unmet needs variables in different surveys

| | Variable specification |
|---|---|
| EHIS | **Forgone or delayed care due to waiting times**: Dummy variable with people who reported having forgone or delayed care due to long waiting times, versus those who have no forgone or delayed care for this same reason in the past 12 months. Excludes people who reported they had no need for health care, except in France and Sweden. |
| | **Forgone or delayed care due to distance or transports**: Dummy variable with people who reported having forgone or delayed care due to distance or transports problems, versus those who have no forgone or delayed care for this same reason in the past 12 months. Excludes people who reported they had no need for health care, except in France and Sweden. |
| | **Unmet needs for medical care due to financial reasons**: Dummy variable with people who reported having forgone medical care due to financial reasons, versus those who have no forgone medical care for this same reason in the past 12 months. Excludes people who reported they had no need for health care, except in France and Sweden. |
| | **Unmet needs for dental care due to financial reasons**: Dummy variable with people who reported having forgone dental care due to financial reasons, versus those who have no forgone dental care for this same reason in the past 12 months. Excludes people who reported they had no need for health care, except in France and Sweden. |
| | **Unmet needs for prescribed medicines due to financial reasons**: Dummy variable with people who reported having forgone prescribed medicines due to financial reasons, versus those who have no forgone prescribed medicines for this same reason in the past 12 months. Excludes people who reported they had no need for health care, except in France and Sweden. |
| | **Forgone care due to financial reasons**: Dummy variable with people who reported having forgone either medical care, dental care, mental care or prescription drugs to financial reasons, versus those who have not forgone care for any of these reason in the past 12 months. Excludes people who reported they had no need for health care, except in France and Sweden. |
| MEPS 2016, USA | **Unmet needs for medical care due to financial reasons:** Dummy variable with people who reported having forgone medical care because they could not afford it or because the insurance company would not approve/cover/pay, versus those who have no forgone medical care for these reasons in the past 12 months. Does not exclude people who reported they had no need for health care.<br>**Unmet needs for dental care due to financial reasons**: Dummy variable with people who reported having forgone dental care because they could not afford it or because the insurance company would not approve/cover/pay, versus those who have no forgone medical care for these reasons in the past 12 months. Does not exclude people who reported they had no need for health care. |
| | **Unmet needs for prescribed medicines due to financial reasons:** Dummy variable with people who reported having forgone prescribed medicines because they could not afford it or because the insurance company would not approve/cover/pay, versus those who have no forgone medical care for these reasons in the past 12 months. Does not exclude people who reported they had no need for health care. |
| | **Foregone care due to financial reasons**: Dummy variable with people who reported having forgone either medical care, dental care or prescription drugs due to financial reasons, versus those who have not forgone care for any of these reason in the past 12 months. Does not exclude people who reported they had no need for health care. |
| CCHS 2017, Canada | **Forgone or delayed care due to waiting lists**: Dummy variable with people who reported having difficulties getting an appointment or long waiting times, versus those who have not experienced these difficulties in the past 12 months. Considers the following 5 types of care: routine, specialist, immediate care, non-emergency surgery and non-emergency tests (MRI, CT scan, and angiography). Excludes people who reported they did not require any of these types of care.<br>**Forgone or delayed care due to distance or transports:** Dummy variable with people who reported having difficulties to access care due to transportation problems, versus those who have not experienced these difficulties in the past 12 months. Considers the following 5 types of care: routine, specialist, immediate care, non-emergency surgery and non-emergency tests (MRI, CT scan, and angiography). Excludes people who reported they did not require any of these types of care. |
| Commonwealth Fund survey 2016 | Proportion of adults who a medical problem but did not visit doctor; skipped medical test, treatment or follow up recommended by doctor; and/or did not fill prescription or skipped doses |

Note: Chile was excluded as the reporting period is only 3 months.

## Numerical results

### Annex Table 4.A.2. Descriptive statistics and generalised concentration indices: unmet needs for financial reasons for medical care, dental care and prescription drugs

| | Unmet needs for medical care | | | | Unmet needs for dental care | | | | Unmet needs for prescription drugs | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Mean | Q5 | GCI | Q1 | Mean | Q5 | GCI | Q1 | Mean | Q5 | GCI |
| EU25 | 14% | 8% | 4% | | 23% | 14% | 7% | | 13% | 7% | 3% | |
| OECD | 13% | 8% | 4% | | 24% | 15% | 7% | | 13% | 7% | 3% | |
| Total | 13% | 8% | 4% | | 23% | 14% | 7% | | 13% | 7% | 3% | |
| Austria | 5% | 3% | 1% | -0.006* | 10% | 7% | 4% | -0.010* | 4% | 2% | 1% | -0.005* |
| Bulgaria | 23% | 11% | 4% | -0.035* | 27% | 14% | 5% | -0.039* | 20% | 10% | 3% | -0.033* |
| Croatia | 11% | 8% | 2% | -0.015* | 9% | 6% | 3% | -0.009* | 9% | 6% | 1% | -0.014* |
| Cyprus | 11% | 4% | 1% | -0.019* | 14% | 5% | 1% | -0.020* | 5% | 2% | 1% | -0.009* |
| Czech Republic | 11% | 5% | 2% | -0.012* | 6% | 2% | 0% | -0.007* | 10% | 4% | 1% | -0.013* |
| Denmark | 3% | 2% | 1% | -0.004* | 21% | 14% | 8% | -0.031* | 8% | 4% | 1% | -0.015* |
| Estonia | 17% | 10% | 4% | -0.020* | 48% | 31% | 15% | -0.056* | 12% | 6% | 1% | -0.021* |
| Finland | 19% | 12% | 5% | -0.026* | 24% | 14% | 8% | -0.031* | 19% | 11% | 5% | -0.028* |
| Germany | 8% | 4% | 2% | -0.010* | 18% | 11% | 6% | -0.021* | 8% | 4% | 1% | -0.013* |
| Greece | 30% | 19% | 10% | -0.035* | 31% | 20% | 10% | -0.040* | 24% | 16% | 7% | -0.032* |
| Hungary | 11% | 5% | 2% | -0.016* | 23% | 12% | 5% | -0.035* | 15% | 6% | 1% | -0.027* |
| Iceland | 16% | 8% | 3% | -0.030* | 34% | 19% | 8% | -0.053* | 16% | 9% | 3% | -0.030* |
| Ireland | 22% | 21% | 19% | -0.007 | 30% | 29% | 27% | -0.011* | 19% | 18% | 18% | -0.006 |
| Italy | 23% | 12% | 7% | -0.032* | 27% | 14% | 8% | -0.036* | 12% | 7% | 5% | -0.014* |
| Latvia | 39% | 23% | 10% | -0.051* | 49% | 29% | 15% | -0.059* | 35% | 18% | 6% | -0.050* |
| Lithuania | 4% | 3% | 1% | -0.007* | 16% | 13% | 3% | -0.032* | 4% | 4% | 1% | -0.009* |
| Luxembourg | 12% | 6% | 2% | -0.016* | 21% | 12% | 4% | -0.031* | 12% | 7% | 2% | -0.017* |
| Malta | 7% | 5% | 3% | -0.011* | 7% | 4% | 1% | -0.011* | 9% | 4% | 1% | -0.014* |
| Netherlands | 10% | 3% | 1% | -0.014* | 12% | 3% | 1% | -0.018* | 7% | 1% | 1% | -0.010* |
| Norway | 3% | 1% | 0% | -0.005* | 8% | 3% | 1% | -0.012* | 7% | 3% | 1% | -0.011* |
| Poland | 15% | 9% | 4% | -0.019* | 23% | 13% | 7% | -0.029* | 22% | 10% | 3% | -0.032* |
| Portugal | 25% | 15% | 6% | -0.034* | 60% | 37% | 12% | -0.088* | 21% | 11% | 3% | -0.033* |
| Romania | 13% | 9% | 5% | -0.017* | 21% | 12% | 6% | -0.028* | 12% | 8% | 4% | -0.016* |
| Slovak Republic | 5% | 2% | 1% | -0.007* | 18% | 7% | 4% | -0.022* | 12% | 5% | 2% | -0.017* |
| Slovenia | 6% | 4% | 6% | -0.003 | 13% | 13% | 11% | -0.007 | 9% | 6% | 4% | -0.011* |
| Spain | 8% | 3% | 1% | -0.011* | 36% | 15% | 4% | -0.064* | 8% | 3% | 1% | -0.013* |
| United Kingdom | 2% | 1% | 1% | -0.002* | 7% | 4% | 3% | -0.008* | 1% | 1% | 0% | -0.003* |
| France♦ | 9% | 4% | 1% | -0.020* | 27% | 16% | 8% | -0.043* | - | - | - | - |
| Sweden♦ | 5% | 3% | 1% | -0.007* | 12% | 11% | 4% | -0.014* | 6% | 4% | 2% | -0.008* |
| United States♦ | 3% | 1% | 1% | -0.003* | 7% | 3% | 1% | -0.011* | 3% | 2% | 1% | -0.003* |

Note: Proportion of adults who had unmet needs in the past 12 months. Q1 is the lowest income quintile and Q5 the highest. (♦) In France, Sweden and the US, the proportions are calculated over the total adult population (including both people who have needs for care and those who have no needs), while in the other countries, the proportions are over adult population who has needs.
Source: OECD calculations based on EHIS 2, MEPS and CCHS.

## Annex Table 4.A.3. Descriptive statistics and generalised concentration indices: Unmet needs for financial reasons, due to waiting times, transport and overall

| | Unmet needs for financial reasons | | | | Unmet needs due to waiting times | | | | Unmet needs due to distance or transports | | | | All (either of the 3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 | Mean | Q5 | GCI | Q1 | Mean | Q5 | GCI | Q1 | Mean | Q5 | GCI | Mean |
| EU25 | 26% | 16% | 8% | | 20% | 18% | 16% | | 6% | 4% | 2% | | 28% |
| OECD | 27% | 17% | 9% | | 21% | 19% | 17% | | 6% | 4% | 2% | | 28% |
| Total | 26% | 16% | 8% | | 20% | 18% | 16% | | 6% | 4% | 2% | | 28% |
| Austria | 13% | 9% | 5% | -0.013* | 10% | 11% | 11% | -0.002 | 3% | 2% | 1% | -0.003* | 19% |
| Bulgaria | 34% | 18% | 7% | -0.047* | 7% | 4% | 3% | -0.008* | 10% | 4% | 1% | -0.016* | 19% |
| Canada | - | - | - | - | 19% | 19% | 19% | 0.001 | 2% | 2% | 2% | 0.000 | 19% |
| Croatia | 17% | 11% | 5% | -0.022* | 23% | 22% | 15% | -0.013* | 11% | 6% | 2% | -0.012* | 28% |
| Cyprus | 13% | 5% | 1% | -0.020* | 10% | 8% | 5% | -0.010* | 0% | 0% | 0% | 0.000 | 11% |
| Czech Republic | 15% | 7% | 3% | -0.018* | 12% | 11% | 10% | -0.004 | 10% | 6% | 2% | -0.010* | 17% |
| Denmark | 26% | 18% | 10% | -0.038* | 23% | 23% | 22% | -0.002 | 5% | 3% | 2% | -0.006* | 39% |
| Estonia | 46% | 31% | 14% | -0.054* | 15% | 18% | 21% | 0.013* | 6% | 4% | 2% | -0.008* | 41% |
| Finland | 32% | 19% | 9% | -0.043* | 28% | 20% | 13% | -0.024* | 7% | 4% | 2% | -0.009* | 32% |
| Germany | 23% | 14% | 7% | -0.028* | 29% | 25% | 21% | -0.011* | 8% | 4% | 2% | -0.009* | 32% |
| Greece | 38% | 26% | 14% | -0.042* | 17% | 16% | 12% | -0.008* | 9% | 8% | 3% | -0.010* | 33% |
| Hungary | 26% | 14% | 6% | -0.040* | 15% | 13% | 9% | -0.011* | 5% | 3% | 1% | -0.006* | 23% |
| Iceland | 33% | 20% | 9% | -0.050* | 34% | 29% | 27% | -0.010 | 6% | 4% | 2% | -0.008* | 43% |
| Ireland | 36% | 33% | 31% | -0.013* | 25% | 24% | 23% | -0.005 | 9% | 8% | 6% | -0.007 | 47% |
| Italy | 30% | 17% | 10% | -0.038* | 37% | 30% | 25% | -0.022* | 14% | 9% | 6% | -0.016* | 38% |
| Latvia | 54% | 34% | 18% | -0.063* | 24% | 24% | 22% | 0.002 | 16% | 7% | 2% | -0.023* | 43% |
| Lithuania | 11% | 9% | 3% | -0.021* | 15% | 14% | 11% | -0.009* | 4% | 4% | 0% | -0.009* | 19% |
| Luxembourg | 29% | 16% | 6% | -0.043* | 33% | 32% | 30% | -0.001 | 7% | 3% | 1% | -0.012* | 36% |
| Malta | 13% | 7% | 2% | -0.019* | 30% | 27% | 22% | -0.015* | 4% | 2% | 1% | -0.004* | 32% |
| Netherlands | 15% | 5% | 2% | -0.022* | 14% | 11% | 11% | -0.004 | 5% | 2% | 1% | -0.005* | 17% |
| Norway | 14% | 6% | 2% | -0.020* | 5% | 4% | 3% | -0.004* | 3% | 1% | 1% | -0.002* | 10% |
| Poland | 30% | 17% | 8% | -0.039* | 22% | 26% | 27% | 0.012* | 7% | 5% | 2% | -0.007* | 35% |
| Portugal | 48% | 31% | 11% | -0.070* | 29% | 26% | 19% | -0.019* | 6% | 3% | 1% | -0.009* | 44% |
| Romania | 27% | 16% | 8% | -0.036* | 4% | 3% | 2% | -0.003* | 4% | 2% | 1% | -0.005* | 16% |
| Slovak Republic | 19% | 8% | 4% | -0.025* | 8% | 6% | 5% | -0.005* | 2% | 1% | 1% | -0.002 | 13% |
| Slovenia | 17% | 15% | 14% | -0.011* | 20% | 21% | 25% | 0.007 | 7% | 3% | 1% | -0.010* | 29% |
| Spain | 35% | 16% | 5% | -0.061* | 20% | 17% | 14% | -0.011* | 2% | 2% | 1% | -0.002* | 28% |
| United Kingdom | 8% | 6% | 4% | -0.010* | 17% | 15% | 16% | -0.003 | 3% | 2% | 1% | -0.004* | 21% |
| France♦ | 31% | 19% | 8% | -0.051* | 16% | 14% | 14% | -0.003 | 6% | 3% | 1% | -0.009* | 31% |
| Sweden♦ | 19% | 15% | 6% | -0.021* | 21% | 18% | 13% | -0.011* | 4% | 2% | 1% | -0.007* | 30% |
| United States♦ | 10% | 5% | 2% | -0.013* | - | - | - | - | - | - | - | - | - |

Note: Proportion of adults who had unmet needs in the past 12 months. Q1 is the lowest income quintile and Q5 the highest. (♦) In France, Sweden and the US, the proportions are calculated over the total adult population (including both people who have needs for care and those who have no needs), while in the other countries, the proportions are over adult population who has needs.
Source: OECD calculations based on EHIS 2, MEPS and CCHS.

## Annex Table 4.A.4. Summary of inequalities: Detailed results and discussion

| | Overall inequalities rank (1) | Rank inequalities of unmet needs for financial reason | % unmet needs for financial reasons | Rank inequalities of unmet needs for waiting times | % unmet needs for waiting list | Rank inequalities of unmet needs for transport | % unmet needs for transport | % of population with any unmet need |
|---|---|---|---|---|---|---|---|---|
| Portugal | 1 | 1 | 31 | 3 | 26 | 13 | 3 | 44 |
| Italy | 2 | 14 | 17 | 2 | 30 | 2 | 9 | 38 |
| Finland | 3 | 8 | 19 | 1 | 20 | 10 | 4 | 32 |
| Bulgaria | 4 | 7 | 18 | 14 | 4 | 3 | 4 | 19 |
| Croatia | 5 | 19 | 11 | 5 | 22 | 4 | 6 | 28 |
| Latvia | 6 | 2 | 34 | 26 | 24 | 1 | 7 | 43 |
| Iceland | 7 | 6 | 20 | 10 | 29 | 14 | 4 | 43 |
| Greece | 8 | 10 | 26 | 13 | 16 | 8 | 8 | 33 |
| Germany | 9 | 16 | 14 | 6 | 25 | 11 | 4 | 32 |
| Hungary | 10 | 11 | 14 | 7 | 13 | 19 | 3 | 23 |
| Spain | 11 | 3 | 16 | 8 | 17 | 27 | 2 | 28 |
| France♦ | 12 | 5 | 19 | 22 | 14 | 12 | 3 | 31 |
| Luxembourg | 12 | 9 | 16 | 25 | 32 | 5 | 3 | 36 |
| Lithuania | 14 | 21 | 9 | 12 | 14 | 9 | 4 | 19 |
| Sweden♦ | 15 | 20 | 15 | 9 | 18 | 18 | 2 | 30 |
| Estonia | 16 | 4 | 31 | 29 | 18 | 15 | 4 | 41 |
| Czech Republic | 17 | 25 | 7 | 18 | 11 | 6 | 6 | 17 |
| Malta | 18 | 24 | 7 | 4 | 27 | 23 | 2 | 32 |
| Netherlands | 19 | 18 | 5 | 17 | 11 | 21 | 2 | 17 |
| Denmark | 20 | 13 | 18 | 24 | 23 | 20 | 3 | 39 |
| Poland | 20 | 12 | 17 | 28 | 26 | 17 | 5 | 35 |
| Romania | 22 | 15 | 16 | 21 | 3 | 22 | 2 | 16 |
| Ireland | 23 | 27 | 33 | 16 | 24 | 16 | 8 | 47 |
| Slovak Republic | 24 | 17 | 8 | 15 | 6 | 28 | 1 | 13 |
| Slovenia | 25 | 28 | 15 | 27 | 21 | 7 | 3 | 29 |
| Cyprus | 26 | 23 | 5 | 11 | 8 | 29 | 0 | 11 |
| Norway | 27 | 22 | 6 | 19 | 4 | 26 | 1 | 10 |
| United Kingdom | 28 | 29 | 6 | 20 | 15 | 24 | 2 | 21 |
| Austria | 29 | 26 | 9 | 23 | 11 | 25 | 2 | 19 |

Note: The rank of inequalities for unmet needs variables is derived from data in previous tables and 1 denotes the highest inequalities detrimental to the poor.
(♦) In France, Sweden and the US, the proportions are calculated over the total adult population (including both people who have needs for care and those who have no needs), while in the other countries, the proportions are over adult population who has needs.
Source: OECD calculations based on EHIS 2, MEPS and CCHS.

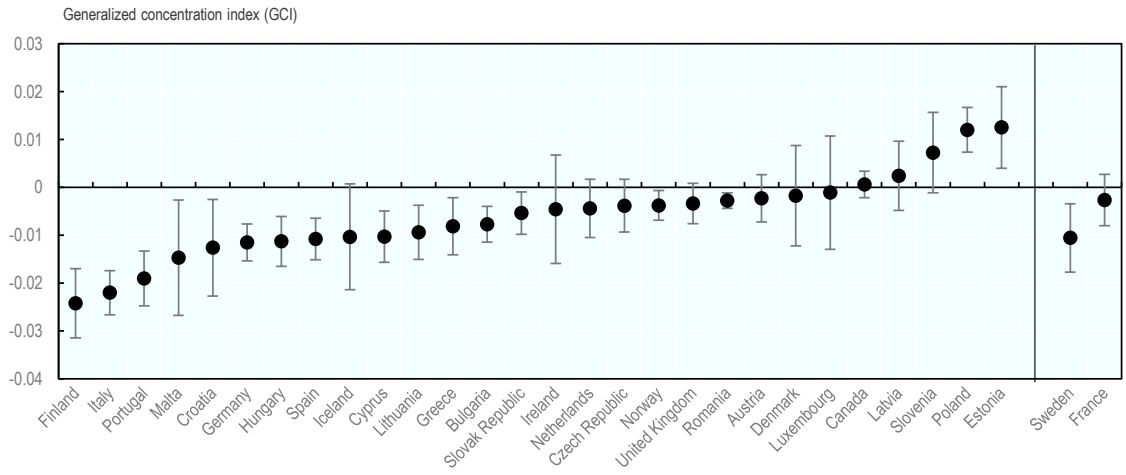
## Explanation and Sensitivity analysis

The analysis presented above results from first attributing a rank to each country for its level of inequality (measured by the GCIs sorted from the highest inequality detrimental to the poor up). A separate ranking is produced for each unmet need reason. The sum of the ranks for 3 reasons leads to the summary ranking (1) and subsequent grouping. Broadly speaking, countries in the high inequalities group rank in the top third of highest inequalities for at least 2 types of unmet needs (rank below 10). Countries in the low inequality group, tend to rank in the bottom third of inequalities for at least 2 types of unmet needs (rank 20 or above).

Separately, a set of PCAs were also undertaken including: (i) on GCIs for 3 types of unmet needs (financial, transport, waiting times), (ii) on GCIs for all types of unmet need including unmet costs for various types of care, and (iii) on the GCIs combined with levels of unmet needs. The correlations of the various unmet needs CGIs were generally low and the first axis of the PCA tended to explain only half of the information. Nevertheless, all PCAs led to groupings which were broadly similar to the one presented above. In fact, the correlation between the value of the country rank derived from the GCI PCA and the one above was more than 90%. Finally, additional ranking were elaborated on the sum of GCIs, on the sum of the absolute values of GCIs, again leading to similar groupings.

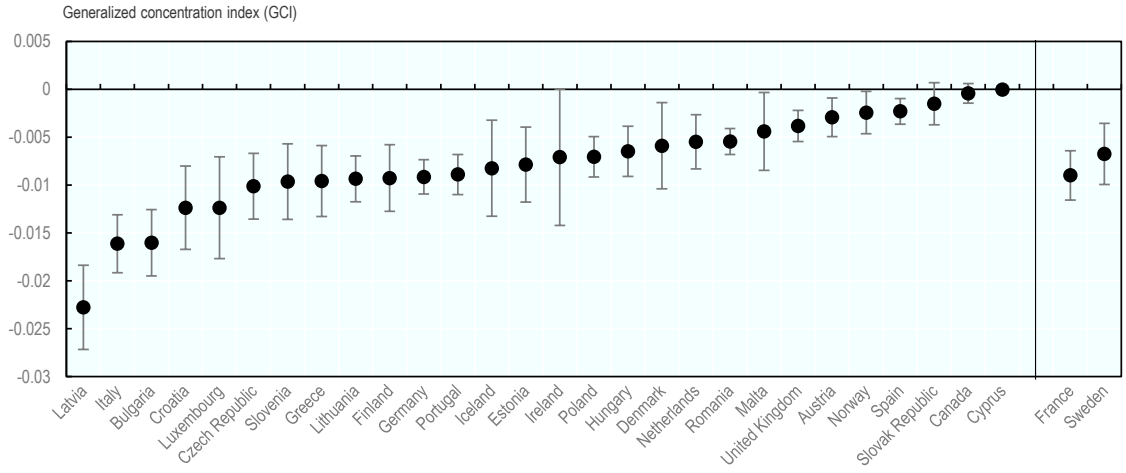
## Graphs of generalised concentration indexes

### Annex Figure 4.A.1. Inequality index for the probability of delayed or forgone care due to waiting times (GCI)



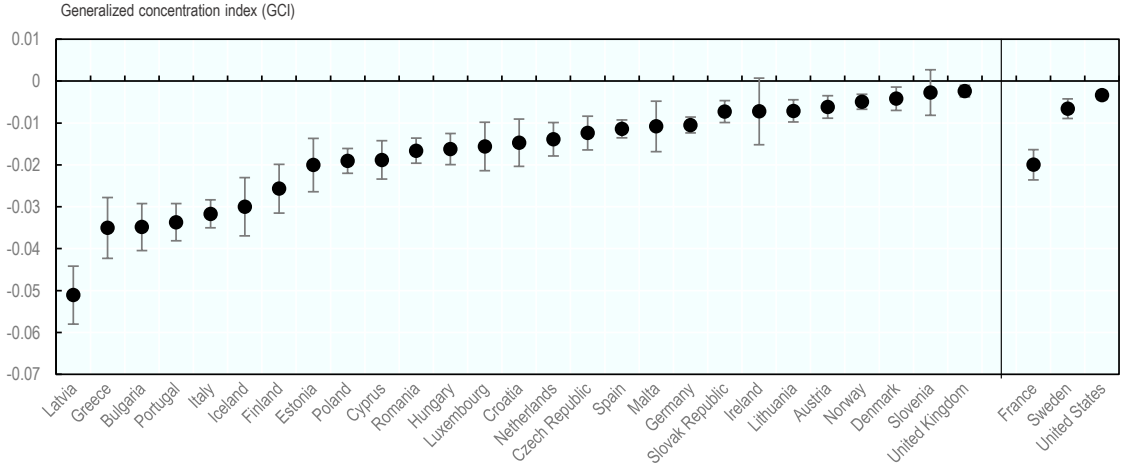

Notes: The generalised concentration index measures the degree of income-related inequalities in the probability of delayed or foregone care due to waiting lists. The error bars represent the 95% confidence intervals. If the GCI is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality. Data for the United States, Sweden and France are not strictly comparable.
Source: OECD calculations based on national health survey data.

## Annex Figure 4.A.2. Inequality index for the probability of delayed or forgone care due to distance/transport problems (GCI)



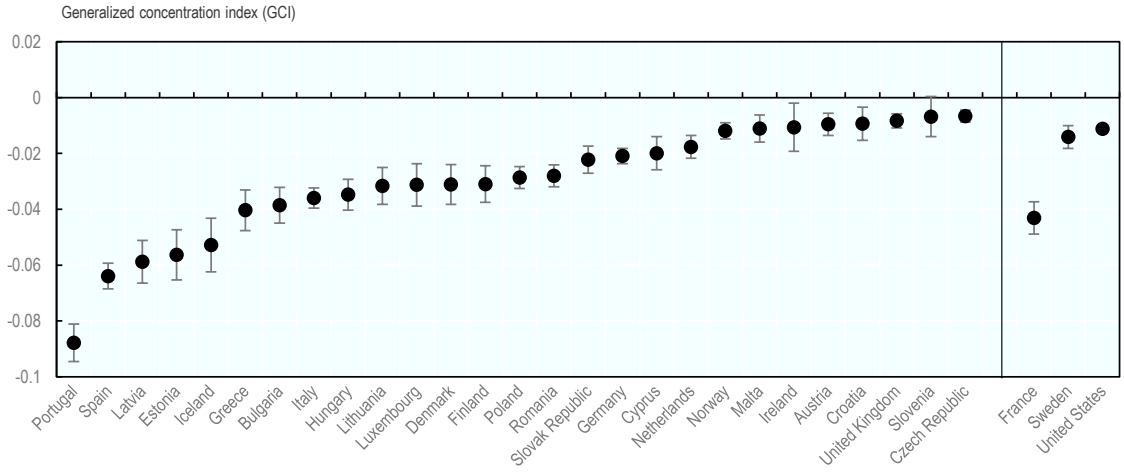

Notes: The generalised concentration index measures the degree of income-related inequalities in the probability of delayed or forgone care due to distance or transport problems. The error bars represent the 95% confidence intervals. If the GCI is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality. Data for the United States, Sweden and France are not strictly comparable.
Source: OECD calculations based on national health survey data.

## Annex Figure 4.A.3. Inequality index for the probability of forgone medical care due to financial reasons (GCI)



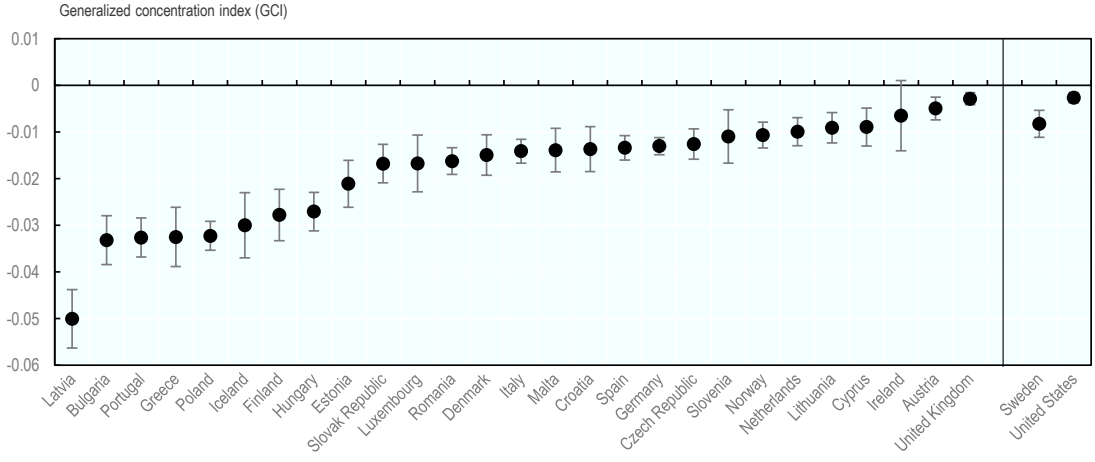

Notes: The generalised concentration index measures the degree of income-related inequalities in the probability of forgone medical care due to financial reasons. The error bars represent the 95% confidence intervals. If the GCI is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality. Data for the United States, Sweden and France are not strictly comparable.
Source: OECD calculations based on national health survey data.

## Annex Figure 4.A.4. Inequality index for the probability of forgone dental care due to financial reasons (GCI)



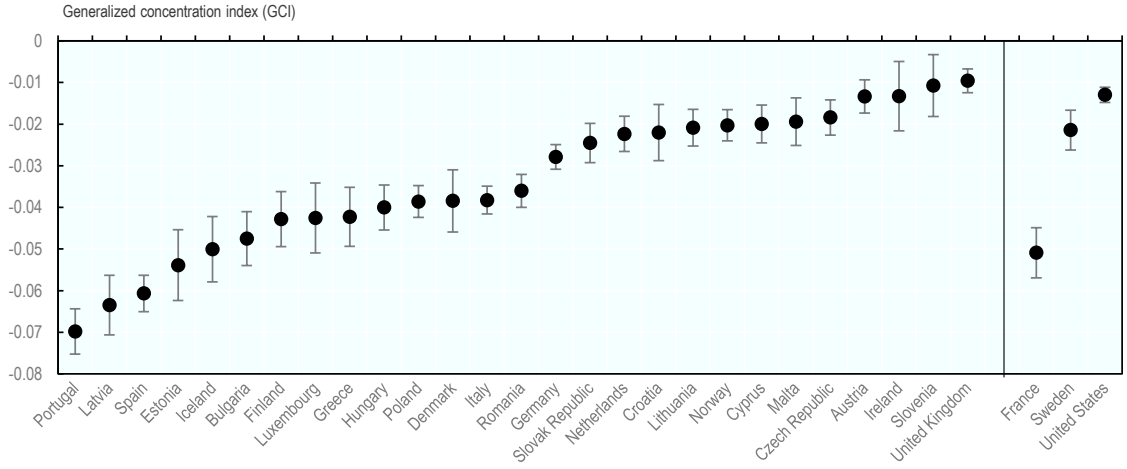

Notes: The generalised concentration index measures the degree of income-related inequalities in the probability of forgone dental care due to financial reasons. The error bars represent the 95% confidence intervals. If the GCI is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality. Data for the United States, Sweden and France are not strictly comparable.
Source: OECD calculations based on national health survey data.

## Annex Figure 4.A.5. Inequality index for the probability of forgone prescription drugs due to financial reasons (GCI)




Notes: The generalised concentration index measures the degree of income-related inequalities in the probability of forgone prescription drugs due to financial reasons. The error bars represent the 95% confidence intervals. If the GCI is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality. Data for the United States, Sweden and France are not strictly comparable.
Source: OECD calculations based on national health survey data.

## Annex Figure 4.A.6. Inequality index for the probability of forgone care (any type) due to financial reasons, inequality index (GCI)




Notes: The generalised concentration index measures the degree of income-related inequalities in the probability of delayed or forgone care (any type) due to financial reasons. The error bars represent the 95% confidence intervals. If the GCI is significantly above (below) 0, inequalities are in favour of the rich (the poor). If the error bars cross the 0 line, there is no significant inequality. Data for the United States, Sweden and France are not strictly comparable.
Source: OECD calculations based on national health survey data.

## Notes

[1] Per the methodology described in the previous chapter.

[2] In EHIS, the questions on unmet needs only specify the type of care for unmet needs for financial reasons. The comparison between perceived need and actual utilisation is thus only possible for medical and dental care.

[3] Few studies have analysed the relationship between unmet needs and utilisation. Allin, Grignon and Legrand (2010[12]) are an exception in that regard. Using data from the 2003 Canadian Community Health Survey, the authors find that having taken into account differences in health status and socio-economic characteristics, people with unmet need due to waiting time have a 22% higher probability of visiting a GP within the last 12 month (and more visits) than those who do not. However, the study does not differentiate between people with no need and people with no unmet needs – and their results cannot be compared with those presented here.

[4] They represent more than 5% of the adult population.

[5] The correlation in part reflects by the nature of the inequality indicator selected: by construction, if the average proportion of people with a given characteristic in a population is very high or very low, the difference between high and low income people cannot be very high, an thus the GCI which is linked to these absolute inequalities also tends to be lower.

[6] Part of this may be attributed to the fact that the MEPS does not distinguish people with no need from those with no unmet needs but the gap with other surveys remains too large to dispel doubts about the reliability of a comparison between MEPS and EHIS on unmet needs for financial reasons.

[7] The proportion of people reporting unmet need for mental care for financial reason were generally too low to be analysed separately. They are however included in the aggregate variable of unmet need for financial reason.

# 5 Affordability and financial protection: Insights from Europe

High out-of-pocket payments for health care services can prevent patients from seeking needed care or can cause financial hardship among those who do. This chapter analyses the affordability of health care services in European countries and explores the extent to which poorer households are more likely to face financial hardship when seeking care. The chapter analyses possible gaps in coverage in EU and OECD countries that can lead to financial hardship and explores whether voluntary health insurance can compensate for gaps in publicly financed coverage. Gaps in coverage are explored from different dimensions, first looking into population groups that may go without coverage before comparing the scope and depth of coverage for different types of care across countries. This discussion will help to identify some key features of coverage that contribute to explaining differences in financial protection across different population groups and countries.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Note by Turkey:
The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

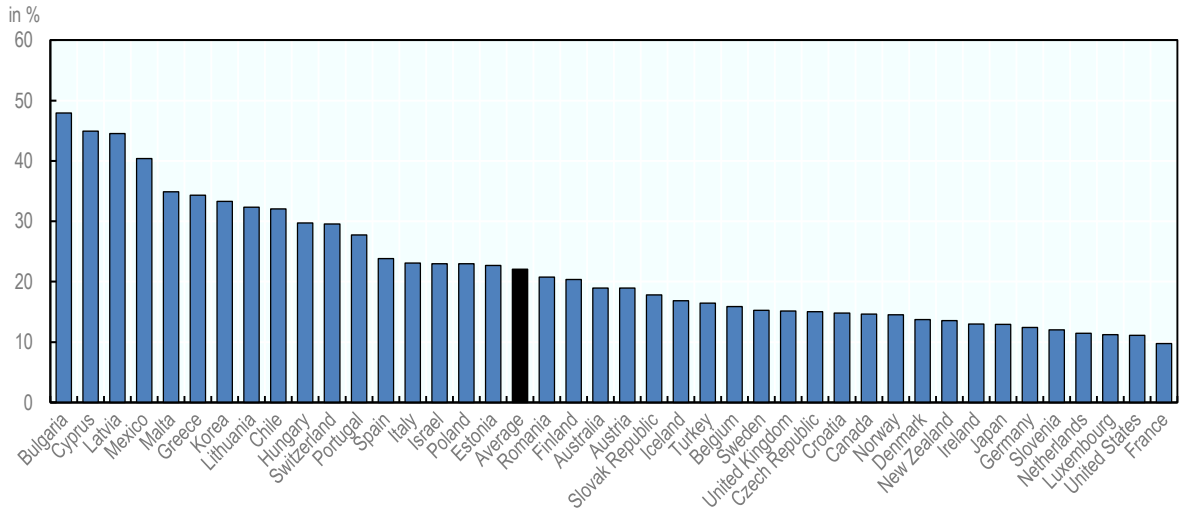
Note by all the European Union Member States of the OECD and the European Union:
The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

## 5.1. Introduction

Direct payments by patients for health –out-of-pocket payments– occur in all health systems. It is also the case in EU and OECD countries that all finance a range of health care goods and services collectively, available to the entire population or large parts thereof. With any form of collective coverage, a basket of health care goods and services is defined for which patients do not bear the cost fully at the point of care. These services can be availed free of charge or subject to compulsory user charges. Out-of-pocket payments can also be required to obtain care excluded from the benefit basket. Finally, some of these payments may be related to patients' choice for example if they want to benefit from a private room in a hospital or other complementary amenities.

The amount and nature of out-of-pocket spending varies considerably across health systems and households and largely depend on the way the collectively financed benefit basket is designed in a country. Across the EU and OECD, around a fifth of all health spending (22%) is borne directly by private households (Figure 5.1). This figure ranges from around 10% in France, the United States, Luxembourg or the Netherlands to 40% or more in Mexico, Latvia, Cyprus and Bulgaria.

### Figure 5.1. Out-of-pocket spending as share of total health expenditure, 2016 or latest year




Source: OECD Health Statistics 2018; Eurostat Database.

Out-of-pocket spending for health weighs more on those with lower income. Faced with the need to pay, some patients may simply forgo needed care if costs are too high as shown in Chapter 4. Others may pay but suffer financial hardship as a result. Everything else being equal, and almost by definition, both scenarios are more likely to unfold in households with limited resources. The fact that people with lower income are generally in poorer health and have higher health care needs further reinforces the regressive nature of out-of-pocket payments.

High out-of-pocket payments have far-ranging societal implications. First, out-of-pocket payments can contribute to the less advantaged not having the same access as the better-offs which limits the ability of health systems to redress inequalities in outcomes. Additionally, as payments for care reduce disposable household income, they may force people to make choices between health and other important consumptions and investments and can even push households into poverty.

The fact that health systems, in addition to providing access to care, intrinsically contribute to households' social protection has gained increasing attention. The provision of financial protection for everyone, regardless of income, is a distinct health system goal and a dimension of universal health coverage, which is widely monitored, including within the framework of the Sustainable Development Goals (SDGs) of the United Nation. This commitment has been renewed recently in Europe: the European Commission has explicitly committed to mainstreaming SDGs into EU policies and initiatives. In 2018, the countries of the European region of the World Health Organisation (WHO) renewed their commitment to promoting shared values of solidarity, equity and participation through health policies with a specific focus on poor and vulnerable groups. In particular, they highlighted the importance of moving towards universal health coverage for a Europe free of impoverishing payments for health, and of specifying ways of improving coverage, access and financial protection for everyone (WHO/Regional Office for Europe, 2018[1]).

This final chapter explicitly turns to the financial angle of the access equation. Section 5.2 reviews the information available on the affordability of health care, mainly in European countries. It combines various approaches to determine the extent to which having to pay for care creates financial hardship and the extent to which this burden is higher on the poor. Section 5.3 analyses possible gaps in population coverage that can lead to financial hardship and explores how voluntary health insurance can compensate for lacks in coverage. Section 5.4 nuances the analysis by type of care, summarises some key features of coverage in EU and OECD countries and discusses how they contribute to these results. Section 5.5 concludes the findings of this chapter.

The chapter highlights the importance of monitoring indicators on the financial burden of health care costs to evaluate access to services. It makes the case that providing health care coverage and protecting people against high health care costs have far-reaching poverty-reducing implications that go beyond health systems. Discussions how to strengthen financial protection in health care should hence be on the agenda of all policy-makers who try to reduce poverty and social disparities in countries promoting a more integrative society and a well-functioning economy.

## 5.2. Affordability and financial protection are concerns in Europe, especially for the poor

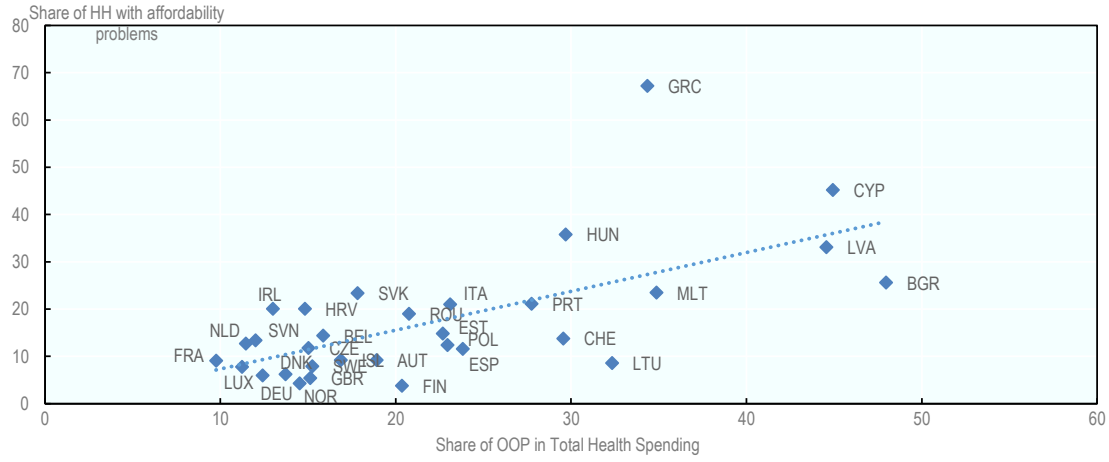
The extent to which accessing care creates a financial burden depends on the level of costs for care but also on household income. Different methods exist to evaluate this financial burden. A first one, somewhat subjective, is to elicit the views of patients on this issue. Household budget surveys can also provide more refined and objective results on the extent to which households face financial hardship.

### *5.2.1. On average thirty percent of households below the poverty line in Europe find it difficult to afford health services*

One approach to assess the financial burden of health spending is to ask people whether out-of-pocket payments are affordable or not. This method was used in the one-off EU-SILC ad-hoc module of 2016. Within this module, people who had incurred payments for health care services were asked to assess whether these services were affordable with great difficulties, moderate difficulties, some difficulties, fairly easily, easily or very easily. On average across Europe, around 17% of all households were only able to make health care payments with moderate or great difficulties. This share varies between 67% in Greece and 4% in Finland and Norway. A correlation between the average share of households facing problems to afford health care and the share of out-of-pocket spending in total health spending in country can be observed (Figure 5.2).

## Figure 5.2. Affordability of health care services and its relationship to out-of-pocket spending

Share of households that responded being able to afford health care services only with moderate difficulties or with great difficulties and the share of out-of-pocket spending in total health spending per country

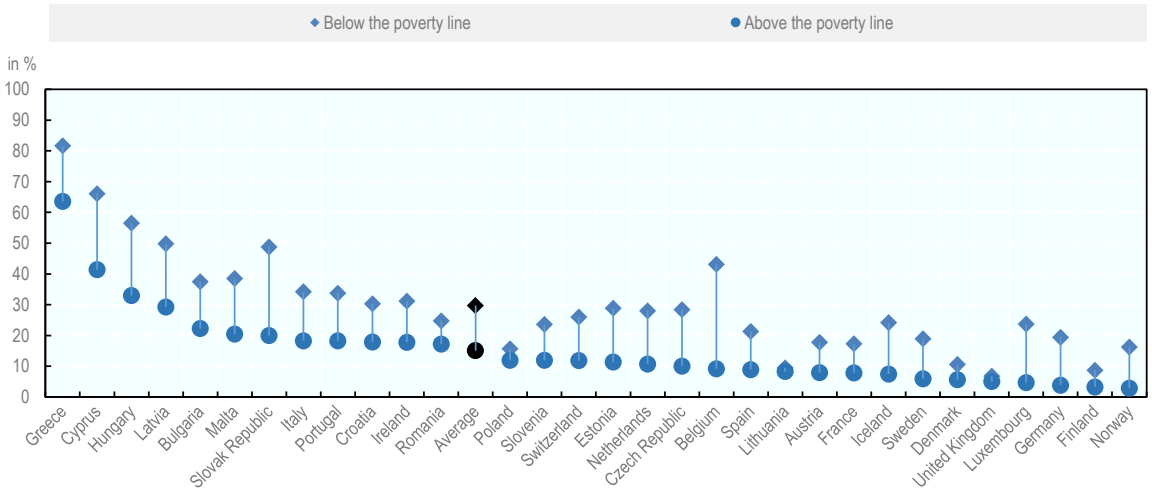



Source: EU-SILC ad-hoc module 2016; OECD Health Statistics 2018; Eurostat Database.

As expected, a clear social gradient is observable when analysing the households reporting affordability issues with health care costs. In all countries, households with low income systematically have more problems to afford health care than those with higher income (Figure 5.3). On average, 30% of households below the poverty line were facing these problems compared to 15% of households with income above that line. The probability that the poor will find care unaffordable is at least 20 percentage points higher than that of the rest of the population in Belgium, the Slovak Republic, Cyprus, Hungary and Latvia. On the other hand, differences are comparably small in Lithuania, the United Kingdom and Poland.

## Figure 5.3. Share of households with difficulties to afford health care services, 2016

Share of households that responded being able to afford health care services only with moderate or great difficulties



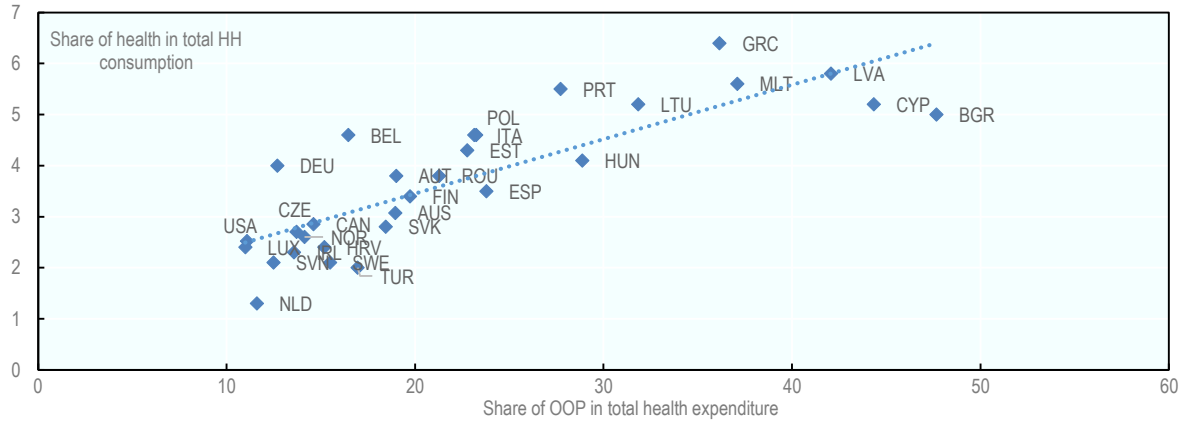

Note: Below the poverty line refers to households with 60% or less of median equalised income.
Source: EU-SILC ad-hoc module 2016.

### *5.2.2. In countries with high out-of-pocket spending, lower-income people spend a higher share of their household budget on health*

More informative approaches to assess the financial burden that out-of-pocket spending for health can represent to people relate it either to their consumption expenditure or to income. The risk of incurring unsustainably high health care bills naturally depends on households' income and wealth. Capturing the impact of health spending at household level requires information from household budget surveys (HBS), regularly undertaken in all European and OECD countries.

Aggregate data confirm that the share of their budget people spend on health is higher in countries that display high levels of OOP[1] (Figure 5.4). The six countries (Bulgaria, Cyprus, Latvia, Malta, Greece and Lithuania) that record the highest shares of out-of-pocket spending (>30%) are also among those where the average share of household consumption dedicated to health care is the highest. In the six countries, this share stands at least at 5%. In many countries where out-of-pocket payments represents only a small fraction of health financing, the share of household consumption used for health care is substantially lower-for example, only slightly above 1% in the Netherlands.

**Figure 5.4. Health care as a share in total household consumption compared to the share of out-of-pocket spending in total health spending**

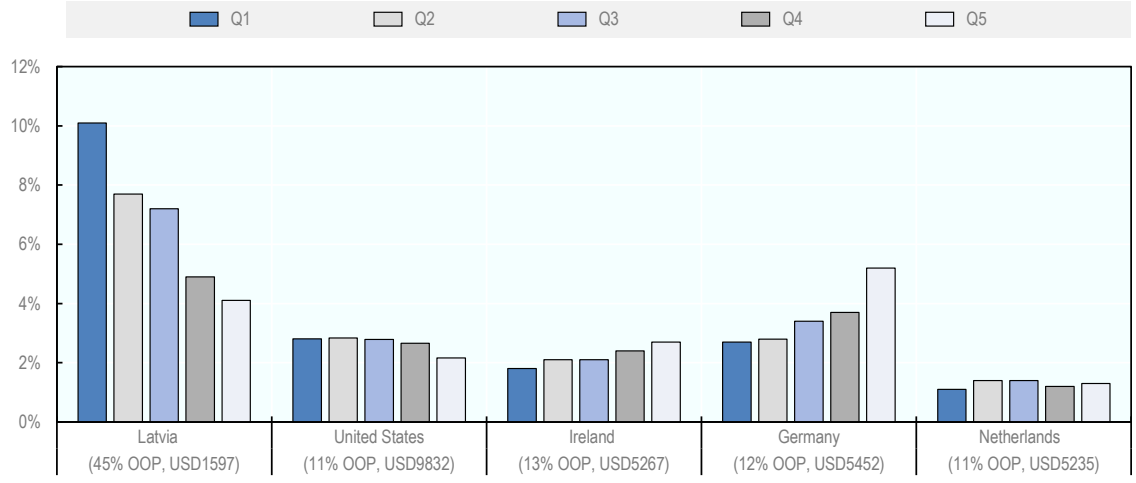



Note: For European countries, shares are measured with Household Budget Surveys using the COICOP classification. Health spending refers to class 06; total household consumption is the sum of classes 01 to 12. This does not include spending for long-care term services and also excludes premium payments for health insurance coverage. For the US, it refers to spending on healthcare (without insurance) as share of average annual expenditure. For Canada, it refers to direct health care costs to household as share of total current consumption. For Australia, it refers to medical care and health expenses (without insurance) as share of total goods and services expenditure.
Source: Eurostat Database; U.S. Bureau of Labor Statistics, Consumption Expenditure Survey 2017; Statistics Canada, Household spending by household income quintile 2017; Australian Bureau of Statistics; Household Expenditure Survey 2015-16; OECD Health Statistics 2018.

Countries do not only vary in the average proportions of household budgets used for health care, they also display different consumption patterns among groups with different socio-economic background. Figure 5.5 displays the share health spending represents by consumption quintile in selected EU and OECD countries. In Latvia, a country where overall spending is low and the share of out-of-pocket very high, the gradient is clear: as income rises, health represents a lower share of household spending. People in the lowest consumption quintile spend proportionally more on health than those in the highest consumption quintile (the share is at least twice as high for the former group). In the United States, the highest income group also spends less than the other population groups but differences are far less pronounced. In that country, the social disparities for premium payments are more explicit than for direct payments[2]. In Ireland and Germany,

health care consumption increases with rising income. Some features of the benefit baskets of collectively financed good may explain parts of the phenomenon: in Ireland, entitlement to free GP care is means-tested and accessible to only around 50% of the population. The better-off have to foot the bills themselves. In Germany, all co-payments in the social health insurance scheme are generally capped at 2% of gross income. This helps ensure the burden is proportionally distributed, all the more as co-payments are reduced for chronic or disabled patients (to 1% of gross income) – groups of people that typically have a lower income. Additionally, people who can opt out of social health insurance coverage in Germany (and who are then required to obtain private insurance coverage) typically have a higher income. Private insurance schemes do not cap out-of-pocket payments. The Netherlands stands out as being a country where all income groups spend the same share of their budget on health. In these three countries (Germany, Ireland, the Netherlands), the share funded out-of-pocket is relatively small and spending on health high.

**Figure 5.5. Health spending as share of total household consumption by consumption quintile, selected countries**




Note: For European countries, the bars represent the shares measured with Household Budget Surveys using the COICOP classification. Health spending refers to class 06; total household consumption is the sum of classes 01 to 12. For the US, it refers to spending on healthcare (without insurance) as share of average annual expenditure. The numbers in parenthesis indicate the 2016 country's share of health spending financed out-of-pocket and total spending per capita in USD PPP.
Source: Eurostat Database 2018; U.S. Bureau of Labor Statistics, Consumption Expenditure Survey 2017; OECD Health Statistics 2018.

### *5.2.3. Catastrophic and impoverishing health spending are issues in some European countries*

With household budget survey micro-data, financial hardship is measured using the two indicators of "catastrophic health spending" and "impoverishing health spending". Spending is said to be catastrophic for households which spend more than a given proportion of their available resources on health. Spending is deemed impoverishing for households whose total consumption drops below the poverty line after they have paid for health care.

Methodologies to estimate the share of the population facing catastrophic health spending or impoverished by it have been developed over the past 20 years (Xu et al., 2003[2]; Wagstaff et al., 2018[3]; Cylus, Thomson and Evetovits, 2018[4]), but they vary in the ways they calculate both indicators (Box 5.1). A recent and in-depth body of work led by the WHO Barcelona Office for Health Systems Strengthening has yielded detailed results for many European countries, and the relevant key findings for EU Member States and Turkey are presented here (WHO Regional Office for Europe, 2019[5]).

### Box 5.1. Impoverishing and catastrophic health expenditure : main approaches

Two main indicators are used to calculate the proportion of the population that experiences financial hardship due to health care costs:

- The first one identifies households that are pushed below the poverty line as a result of having incurred health expenses,
- The second identifies households who incur a level of health expenditure that is considered to be high (catastrophic) compared to their available resources.

Both indicators can be calculated in different ways.

A range of approaches can be used to determine who is facing catastrophic spending:

- In the budget share approach, household out-of-pocket spending on health is typically related to household consumption. If the share of consumption spent on out of pocket exceeds a certain threshold, the household is considered to incur catastrophic health spending.
- The capacity to pay approach acknowledges that households also need to spend money on other necessities, which reduces their capacity to pay for health care. To measure the share of the population incurring catastrophic payments, expenditure for basic needs are deducted from consumption, and the share spent on health is computed with that denominator. Different approaches to computing expenditure on basic needs have been used in previous studies: (i) they can reflect actual spending on food; (ii) they can reflect a standard amount to represent basic spending on food; (iii) they can reflect a standard allowance for all basic needs represented by the poverty line or for a specific set of basic needs, e.g. as food, housing and utilities.

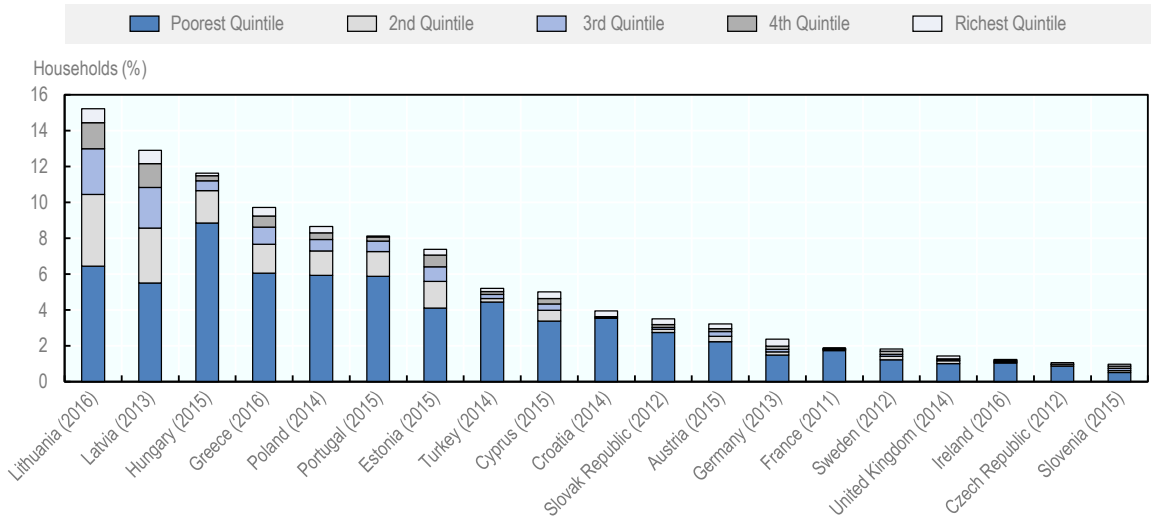
Global monitoring in the context of the SDGs uses the budget share approach to measure catastrophic spending, with a 10% and 25% threshold. It measures impoverishing spending using two absolute poverty lines of USD 1.90 and USD 3.10 in 2011 PPP per person per day, respectively (see Annex Table 5.A.1 for results for EU and OECD countries).

A recent study by the WHO Regional Office for Europe applies the capacity to pay approach to estimate the incidence of catastrophic spending, which it defines as out-of-pocket payments greater than 40% of household capacity to pay for health care. Capacity to pay for health care refers to total household consumption minus a standard amount representing basic needs for food, housing (rent) and utilities.

Source: WHO/World Bank (2017[6]), WHO Regional Office for Europe (2019[5]), Cylus, Thomson and Evetovits (2018[4]).

According to the WHO study, 5.5% of households face catastrophic health spending on average in 18 EU countries and Turkey. In the study, catastrophic spending on health is defined as out-of-pocket payments that exceed 40% of a household's capacity to pay for health care, with the latter, in turns, being measured as what is left of a household's budget after deducting a standard amount deemed necessary to meet basic needs (food, housing and utilities). There are large differences in the share of households facing catastrophically high costs across countries. This number is below 2% in six countries (Slovenia, Czech Republic, Ireland, United Kingdom, Sweden and France) but around 10% or above in Greece, Hungary, Latvia and Lithuania where it reaches 15% of the population. The incidence of catastrophic spending on health is much higher among the poor (Figure 5.6). In all countries, catastrophic spending is heavily concentrated among the lowest consumption quintiles.

**Figure 5.6. Share of households with catastrophic out-of-pocket spending by consumption quintile, latest year available**



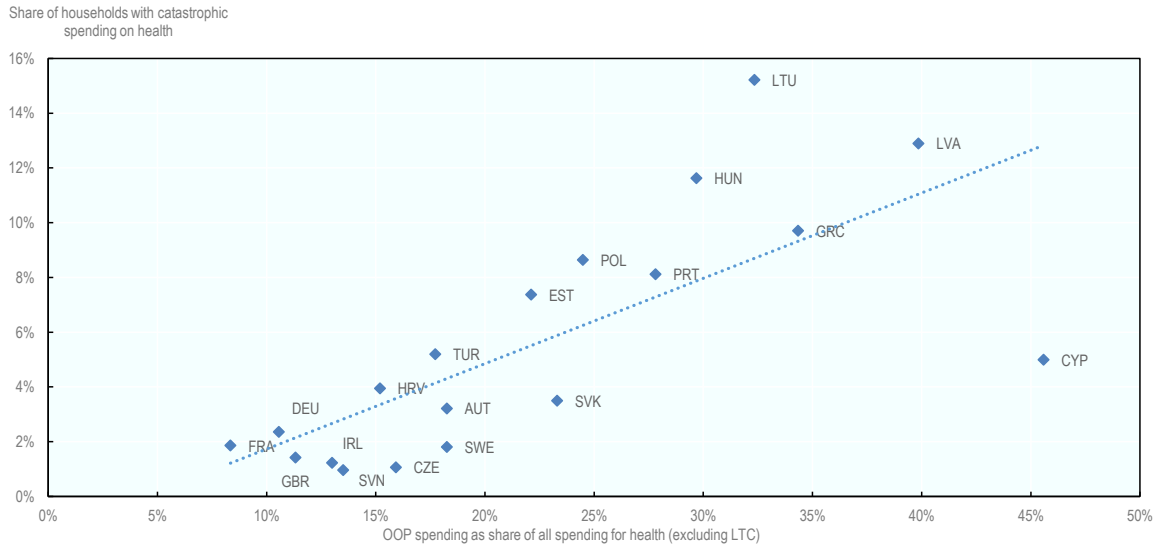

Source: WHO Regional Office for Europe 2019.

The population affected by catastrophic spending tends to be larger in countries where a high share of spending is financed out-of-pocket. Figure 5.7 shows the positive correlation between the share of out-of-pocket spending in overall health expenditure and the proportion of the population facing catastrophic health spending – across Europe. This is consistent with previous findings using data from around the world (Xu et al., 2003[2]). Despite this strong overall correlation, it is important to highlight that for a given level of out-of-pocket spending, some countries (e.g. Slovakia) are able to achieve much better results than others (e.g. Estonia). Cyprus also stands out as a country where high out-of-pocket spending does not translate into as high levels of catastrophic spending as could be anticipated. This indicates that the way the coverage of collectively financed health care goods and services is designed in a country has an impact on the share of households that have to incur catastrophic health expenditure (an issue further discussed below).

Out-of-pocket health spending can also have an impoverishing impact. The concept of “impoverishing health spending” highlights even more clearly the social dimension of financial protection in health care. The WHO Europe study estimated the proportion of households pushed into poverty because of out-of-pocket payments as well as households further impoverished by those payments. The latter group comprises households with resources below the poverty line which still incurred out-of-pocket payments for health services. According to the data of WHO Europe the share of households that are impoverished or further impoverished after out-of-pocket payments range from 0.3% to 6% across the EU and Turkey (Figure 5.8).

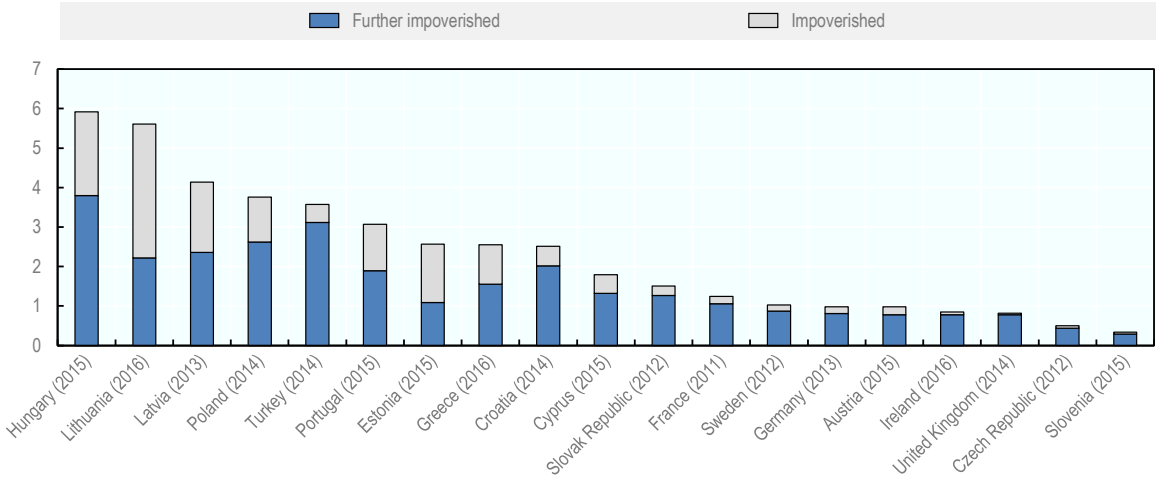
This highlights that beyond access to care, the lack of financial protection against health care costs can have a strong impact on the lives of people. It also shows that financial protection should be a concern to policy makers beyond health ministries and should be considered as one element in a wider agenda to tackle poverty in EU countries and beyond.

## Figure 5.7. Incidence of catastrophic health spending and the share of out-of-pocket in total health spending, latest available year




Note: Long-term care services are excluded from the OOP share to better correspond to the concept of catastrophic spending on health (where they are also excluded).
Source: WHO Regional Office for Europe 2019; OECD Health Statistics 2018; Eurostat Database.

## Figure 5.8. Share of households impoverished or further impoverished after out-of-pocket payments, latest year available



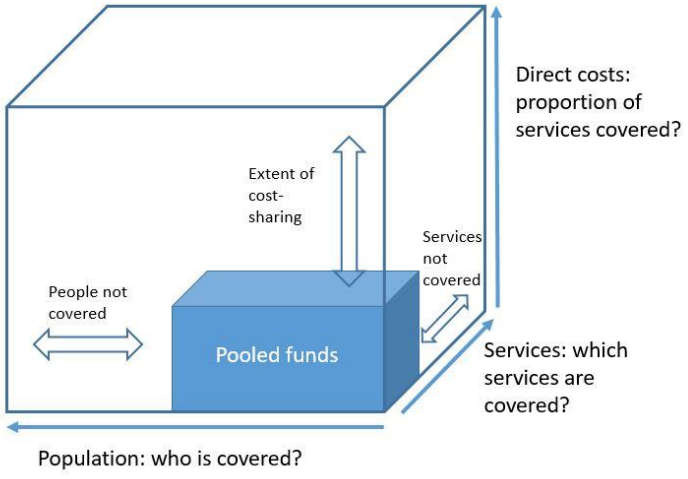

Source: WHO Regional Office for Europe 2019.

## 5.3. Most people in OECD and EU countries have access to publicly financed coverage

Financing schemes which cover people against the costs of health care are the alternative funding mechanisms to out-of-pocket payments. Prepayments – made in advance of illness – and pooling – the sharing of these prepayments among large segments of the population – are the fundamental mechanisms of these schemes which ensure people can access care when in need. The schemes providing coverage can be public or private, compulsory or voluntary, funded by tax contribution or premiums. In all of these cases, coverage can be characterised along three dimensions (Figure 5.9):

- the share of the population entitled to it;
- the range of goods and services covered; and
- the proportion of costs covered.

### Figure 5.9. Three dimensions of health care coverage




Source: Adapted from WHO (2010[7]).

The size of the "cube" of health coverage defined by these three dimensions is the result of health policy choices in a country. In order to ensure that people access health care without enduring excessive financial hardship, OECD and EU countries publicly finance a range of health care goods and services. The more expansive this public coverage is, the less costs have to be borne by patients and other payers. Additionally, in most countries, households can supplement their public coverage by purchasing voluntary insurance limiting the health care costs they pay out-of-pocket.

At an aggregate level, the share of out-of-pocket spending in total health spending represents the share of spending which is not pooled in a country along the three dimensions of coverage. In other words, it measures the part of the cube which is not blue in Figure 5.9 and thus mirrors the degree of financial protection along the three dimensions above. The share of out-of-pocket payments is higher in those countries where significant groups of the population are excluded from collective coverage, important health services not included in the collectively-financed benefit package or where substantial cost-sharing with third-party payers exist for some services. In essence, the analysis presented in the previous section reviewed the extent to which people in Europe are not covered and its implications for affordability of care on a high level. The rest of the chapter delves into how this is mirrored by the different kinds of gaps in coverage. It discusses how the different dimensions of public coverage are organised in countries and highlights some design features

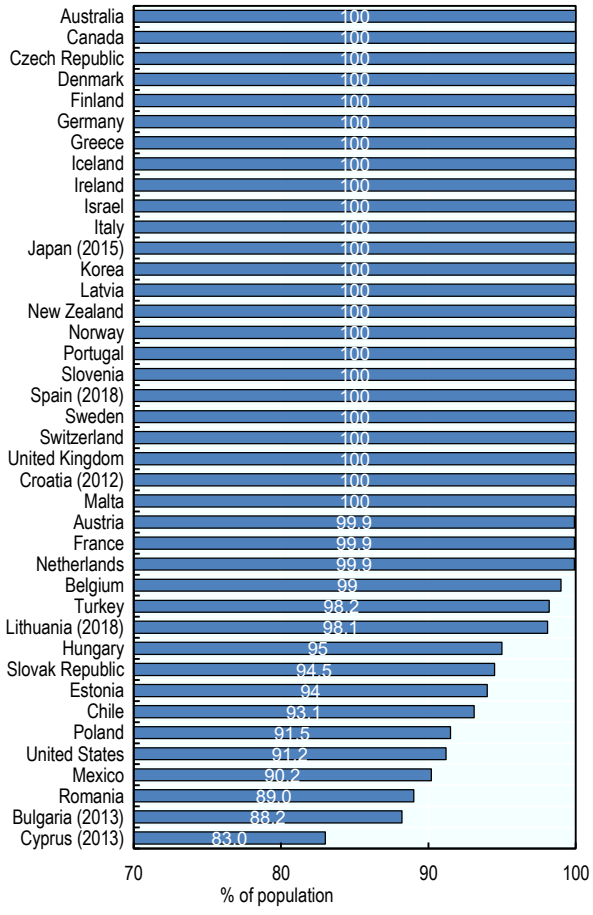
which appear to contribute to ensuring better affordability and financial protection overall. It will also discuss the role voluntary health insurance plays in filling public coverage gaps.

### *5.3.1. Access to publicly financed coverage is near-universal in many European and OECD countries*

The first reason which might explain a high share of out-of-pocket payments in total health spending in a country is the absence of access to the basket of health goods and services financed collectively. All OECD and EU countries provide financial coverage for some key health services – financed either from government schemes or compulsory health insurance schemes (collectively called "public schemes" in the rest of this section) – but there is some variation in the extent to which this coverage spreads across the population (Figure 5.10).

### Figure 5.10. Population coverage for a core set of services, 2016 (or latest year)

Share of the population covered by either government schemes, social health insurance or compulsory private health insurance or a combination thereof.




Note: This includes public coverage and compulsory private health coverage. Data for Luxembourg are not available.
Source: OECD Health Statistics 2018; Spanish Ministry of Health, Consumer Affairs and Social Welfare; Lithuanian Ministry of Health; European Observatory Health Systems in Transition (HiT) Series for non-OECD countries.

While population coverage is universal or near-universal in the majority of EU and OECD countries, a number of countries display substantial gaps. Cyprus, for example, has a tax-based system where coverage is currently linked to residency but from which people above a certain income threshold are excluded (Theodorou et al., 2012[8]). Legislation was passed in 2017 to transform the health system into one based on contributory payments providing access to services to everyone by 2020. In Bulgaria, around 12% of the population did not have coverage provided by the social health insurance scheme in 2013. In this country, people lose coverage it they fail to make three contribution payments in the previous 36 month which puts vulnerable groups such as long-term unemployed and the poor at risk (OECD/European Observatory on Health Systems and Policies, 2017[9]). Coverage rates are also low among ethnic minorities. Lack of coverage for parts of the Roma population is similarly problematic in Romania where in total only around 89% of the population are covered for the costs of health care. Other groups that may have to go without coverage are those that do not contribute to the social health insurance funds, such as people working in agriculture, "unofficial" workers in the private sector, the self-employed and unemployed persons not registered for benefits (OECD/European Observatory on Health Systems and Policies, 2017[10]).

Outside of the EU, coverage is only around 90% in Mexico, the United States and Chile. In the United States, the Patient Protection and Affordable Care Act included an "individual mandate" that required –with some exceptions- all residents from 2014 on to get insurance coverage if they are not covered by another scheme. Yet, people could also opt to pay a penalty if they preferred to stay uninsured. In 2016, more than 8% of the population still remained without coverage. The individual mandate was repealed in the Tax Cuts and Jobs Act of 2017 taking effect in 2019.

But even in those countries where coverage is near-universal, specific population groups may fall through the "cracks" of the social security nets or deliberately choose to remain uninsured. Table 5.1 shows how access to the key health financing scheme is attained in EU and OECD countries. In this regard countries can be roughly split in two groups:

- countries where coverage is automatic for the entire population based on residence;
- countries where coverage is based on payment of mandatory contributions to social or private health insurance schemes, frequently based on employment status.

A number of countries automatically cover the entire population. Among them, the majority do so by providing the entire resident population with access to public services financed out of taxations, following the tradition of the National Health Service in the United Kingdom. Many other countries such as the Scandinavian countries or Italy were inspired by this approach to coverage in the development of their health systems. The only persons in systems with residence-based coverage that may remain without protection typically are undocumented migrants – but they may still have access to emergency care services.

The second archetype of model is based on social health insurance principles, where health care coverage is typically linked to the employment status of the person or grounded on clearly delineated entitlements rules. Coverage is for instance typically extended to non-working family members. Other groups such as the unemployed, students, disabled and other people with low-income may be either automatically covered or exempted from making contributions payments to social health insurance funds with various government agencies sometimes contributing on their behalf. Countries that implemented a social health insurance system include Germany, Austria, Belgium, France, the Czech Republic, Slovenia, Chile, Japan, Korea and others. In such an "employment-focused" coverage model, some people may fall through the "cracks" and lack coverage: these are for example people with irregular employment status or those who work too few hours per week to be entitled to coverage (e.g., Poland and Estonia). In some countries, although entitlement for coverage is universal, some population groups are not automatically covered but have to opt-in – if they do not exercise this right they remain uncovered (e.g., Austria, Luxembourg). Finally, in Germany, where the purchase of private health insurance is compulsory for some population groups some people may not be able to afford this or default on their premium payments which may lead to a (temporary) loss of full coverage.

Some countries that adopted a social health insurance model nevertheless base coverage on residency, including Croatia, the Czech Republic and France. In countries where population groups are not explicitly covered, they may still get access to a limited service package including emergency care.

## Table 5.1. How is coverage attained in EU countries?

| | Who is the key payer in the system? | Is coverage (beyond emergency care) automatic for the entire population? |
|---|---|---|
| Australia | Government scheme | yes |
| Austria | Health Insurance | no |
| Belgium | Health Insurance | no |
| Bulgaria | Health Insurance | no |
| Canada | Government scheme | yes |
| Chile | Health Insurance | no |
| Croatia | Health Insurance | yes |
| Cyprus | Government scheme | no |
| Czech Republic | Health Insurance | yes |
| Denmark | Government scheme | yes |
| Estonia | Health Insurance | no |
| Finland | Government scheme | yes |
| France | Health Insurance | yes |
| Germany | Health Insurance | no |
| Greece | Government scheme | no |
| Hungary | Health Insurance | no |
| Iceland | Government scheme | yes |
| Ireland | Government scheme | yes |
| Israel | Health Insurance | yes |
| Italy | Government scheme | yes |
| Japan | Health Insurance | no |
| Korea | Health Insurance | no |
| Latvia | Government scheme | yes |
| Lithuania | Health Insurance | no |
| Luxembourg | Health Insurance | no |
| Malta | Government scheme | yes |
| Mexico | Health Insurance | no |
| Netherlands | Health Insurance | no |
| New Zealand | Government scheme | yes |
| Norway | Government scheme | yes |
| Poland | Health Insurance | no |
| Portugal | Government scheme | yes |
| Romania | Health Insurance | no |
| Slovak Republic | Health Insurance | no |
| Slovenia | Health Insurance | no |
| Spain | Government scheme | yes |
| Sweden | Government scheme | yes |
| Switzerland | Health Insurance | no |
| Turkey | Health Insurance | no |
| United Kingdom | Government scheme | yes |
| United States | Health Insurance | no |

Note: Information on the key payer refers to the financing scheme paying for most health services.
Source: OECD Health Statistics 2018 and authors' assessment on coverage based on various information sources.

### *5.3.2. Voluntary health insurance plays a marginal role except in a handful of countries*

In addition to public schemes which provide automatic or mandatory coverage for all or large parts of the population, people can also benefit from voluntary coverage schemes[3] which contribute to increasing pooling at the level of a country (Box 5.2). The role that voluntary health insurance (VHI) plays in OECD and EU health systems varies greatly, in terms of the functions it performs (Sagan and Thomson, 2016[11]), the share of people covered by it and its importance in overall health financing.

#### Box 5.2. Voluntary health insurance vs private health insurance

This section does only consider voluntary health insurance schemes, typically provided by private health insurers. It does not consider compulsory private health insurance coverage as it exists, for example, in the Netherlands, Switzerland and the United States (before the repeal of the individual mandate stipulated in the Affordable Care Act) as well as in Germany and Chile where private health insurance coverage is required for those that opt out of public health insurance. In France, complementary private health insurance has become compulsory for some population groups in 2016, however the data for France provided in Figure 5.11 precedes this development and hence all private insurance is still considered as voluntary in that chart.

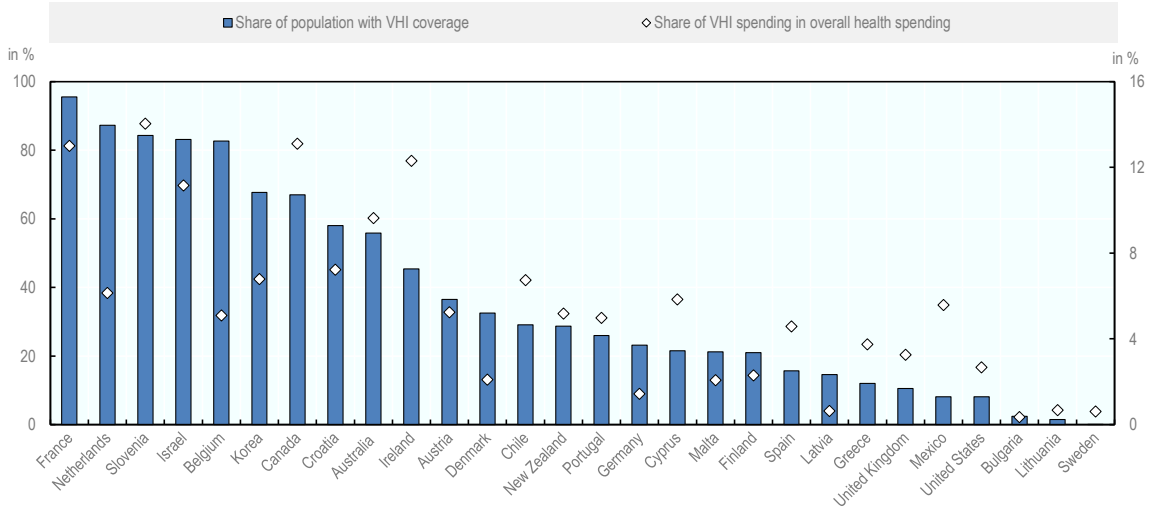
Figure 5.11 combines the latter two pieces of information. While in France, the Netherlands, Slovenia, Israel and Belgium large proportions of the population have VHI coverage to pay some health care costs, this share is much smaller in most other countries. Slovenia, France and Israel are also on top when analysing the overall share of spending pooled though VHI. In those three countries, VHI spending represents 11-14% of overall health spending, much more than in many other countries (4% on average across OECD and EU countries). In Canada, Ireland and Australia (10-13%) VHI is equally important. On the other hand, VHI plays virtually no role in some EU countries, including Sweden, Lithuania and Bulgaria.

While the existence of VHI in a country can reduce the financial burden of out-of-pocket payments for health it may come with its own equity issues, depending how VHI is designed and regulated in a country. In general, the purchase of voluntary coverage requires additional premium payments that can represent an extra burden to poorer households. As a result, access to VHI is often concentrated among the better-off.

Governments can subsidise the uptake of VHI among disadvantaged groups to address the fact that they would be less likely to afford additional coverage. This happens, for example, in France, where poor households obtain VHI coverage for free and other households with modest income receive a voucher (Chevreul, Berg Brigham and Perronnin, 2016[12]). In Croatia, some population groups such as people with a physical or mental disability, dependent people, organ donors, some blood donors, students and people with low income also have free VHI coverage (Lončarek, 2016[13]).

### Figure 5.11. Voluntary health insurance in EU and OECD countries, 2016 or latest year

Share of population with additional health care coverage from voluntary health insurance and share of voluntary health insurance spending in overall health spending




Note: These data exclude compulsory PHI.
Source: OECD Health Statistics 2018; Eurostat Database; and Sagan and Thomson (2016) for non-OECD countries.

On the other hand, if governments promote the uptake of VHI coverage by providing financial incentives to purchase insurance via the tax system, then this will most likely benefit population groups with higher income more. As a result, VHI coverage will be concentrated among the better-off. To a certain extent this is the case in Ireland, where the purchase of duplicate VHI for quicker access for hospital treatment is concentrated among the better-off and take-up is incentivised by an income tax relief for premium payments (Turner, 2016[14]). Consequently, people with the resources to pay for VHI have more timely access to treatment.

In sum, whether VHI helps to reduce financial hardship due to health care costs or exacerbates existing inequalities in access to care depends how it is implemented in a country. Yet, public financing remains the main lever through which health systems facilitate access to care, particularly for the segments of the population which are not rich.

## 5.4. The design of coverage, particularly public, can improve affordability

Out-of-pocket payments, especially for the poor, most likely reflect gaps in the heights and depth of public coverage. Public population coverage is quasi-universal in most EU and OECD countries; private coverage is for the most part limited and typically concentrated among the better-offs. It is thus likely that the direct payments people (especially with low income) have to face, for the most part, reflect the exclusion of some services from public coverage (depth of the cube in Figure 5.9) and co-payments for services whose costs are not entirely covered (height).

This final section takes a closer lens to the question of affordability by type of service. The objectives are (i) to determine whether affordability issues are generally more prominent for certain types of services especially for the poor and (ii) whether country-level characteristics of coverage appear to improve the ability of the system to protect the population better.

Before that, it is important to recognise that there are gaps in the knowledge about the exact nature of the out-of-pocket payments households face. A comprehensive analysis of the financial burden of health care costs should ideally distinguish "necessary" out-of-pocket spending (e.g. a co-payment to access a physician if one is ill) from more "discretionary" costs related to "choice" (e.g. better amenities such as a single room in hospital). From an equity perspective, the absence of public coverage of the latter type of out-of-pocket spending may not be problematic. In reality, the extent to which out-of-pocket payments are discretionary is difficult to assess. Nevertheless, based on country-level information, health financing experts would probably agree that in most health systems, especially when overall spending on health is low and the out-of-pocket share high, discretionary out-of-pocket spending is considerably less prevalent than necessary out-of-pocket spending. Furthermore, discretionary out-of-pocket spending would probably be concentrated among well-off households. The examples presented in Figure 5.5 on how the burden is shared across households of varying income in different countries generally support these assumptions.

### *5.4.1. Across the EU and OECD, hospital and outpatient care is better covered than pharmaceuticals and dental care*

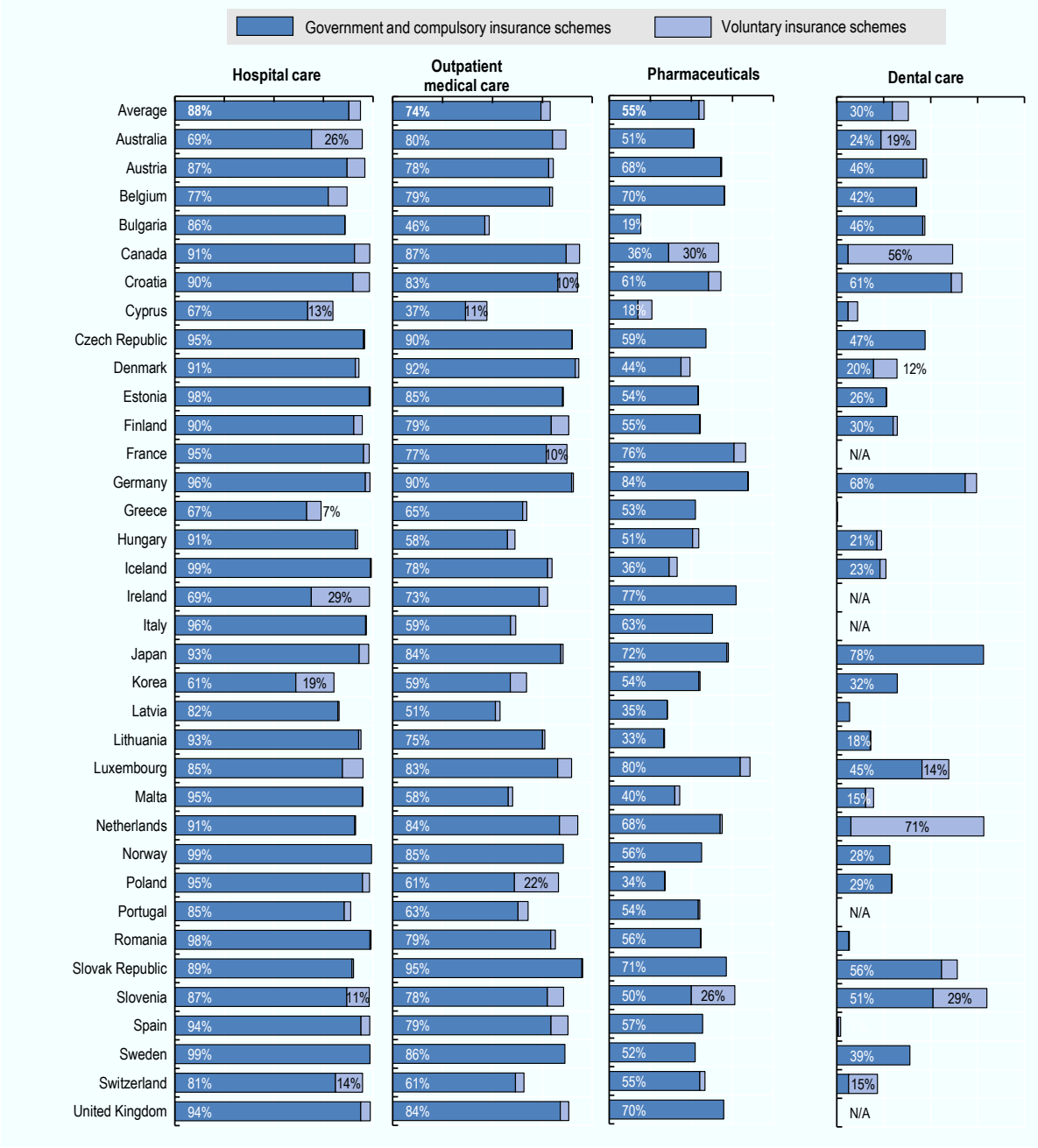
Breaking-down data on health spending for particular services according to who finances them provides some valuable insights into the extent to which service and cost coverage differs across countries. Figure 5.12 presents, for most EU and OECD countries and key categories of services, the share of spending pooled though public and private coverage. It highlights large differences:

- in the share of the total costs covered for similar services by public schemes and voluntary insurance schemes across countries; and
- in the share of total costs covered by third-party payers for different types of services within countries.

At a high level, across EU and OECD countries, hospital services is the category least likely to lead to financial hardship: 94% of all hospital spending is financed by third-party payers. These are mainly public schemes (with a small share of voluntary health insurance in some countries). For outpatient medical services, which generally refer to visits to general practitioners (GPs) or specialists, coverage by third party-payers is less comprehensive (79%). Coverage by third party-payers is even more limited for other goods and services: only around three-fifths (58%) of the costs of pharmaceuticals and 38% of dental care costs are covered by public or private prepayment schemes. The data also show that, on average across European and OECD countries, third-party coverage for key services is predominantly provided by public schemes with voluntary health insurance only playing an important role in a small number of countries for some services. As a result, in many countries a substantial fraction of the costs needs to be covered by patients themselves, particularly for pharmaceuticals and dental care.

## Figure 5.12. Health care coverage for selected goods and services, 2016 or latest year

Government/compulsory insurance spending and spending by voluntary schemes as proportion of total health spending by type of service.




Note: Hospital care refers to inpatient or day care in hospitals. Outpatient medical services mainly refer to services provided by generalists and specialists in the outpatient sector. Pharmaceuticals include prescribed and over-the-counter medicines as well as medical non-durables. Spending by voluntary insurance schemes also includes direct health spending by employers and charities, which is negligible in most EU and OECD countries.

Source: OECD Health Statistics 2018; Eurostat Database.

### *5.4.2. Variation in the financial protection at service level can explain differences in the financial burden of health care costs*

The extent to which high out-of-pocket payments may limit access and translate into unmet needs or catastrophic spending differs across income group. It also depends on the type of service considered, the organisation of public coverage, and the role private insurance plays in a given country. Systematically assessing these different factors goes beyond the scope of this report and is precisely the subject of the country-based studies included in the study by WHO Europe – see for example Estonia (Võrk and Habicht, 2018[15]) or Germany (Siegel and Busse, 2018[16]). Building on this work and the data presented in this report, some summary messages by type of service can nevertheless be drawn and examples presented which further illustrate the importance of (i) approaching the notion of access comprehensively and (ii) combining information on utilisation, unmet needs and financial hardship. To that effect, additional data showing which services drive catastrophic spending for different segments of the population are presented in Box 5.3 and discussed through this section.

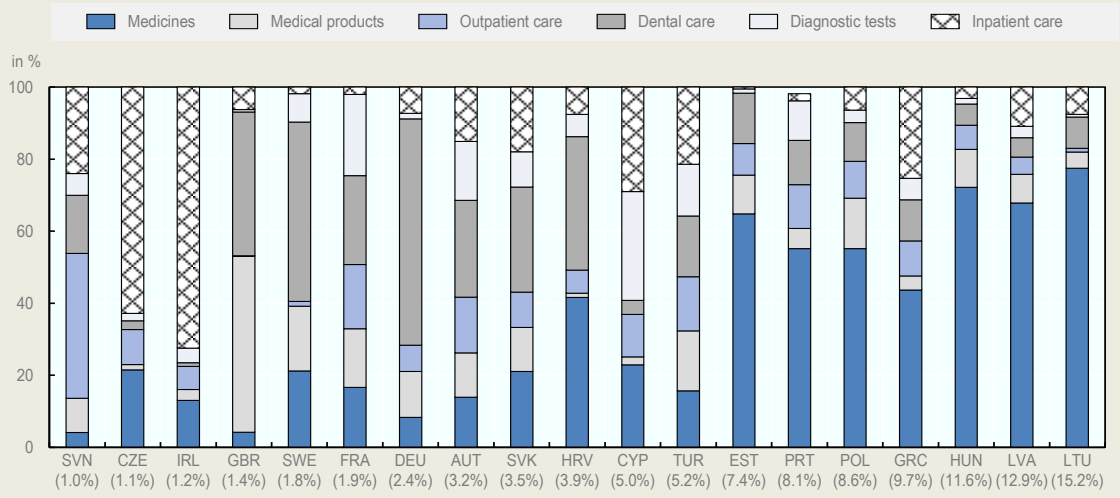
For ***hospital treatment***, financial coverage from public schemes is very comprehensive in most countries (as shown in Figure 5.12). Australia, Cyprus, Greece, Korea and Ireland stand out as having relatively low public coverage (below 70%). These countries are also among those for which the share of hospital costs covered by voluntary health insurance is the highest[4]. In Ireland, VHI facilitates access to private care in hospitals to avoid public waiting lists for diagnostic services or surgery. Since not everyone is privately covered, at population level, hospital care accounts for nearly three quarters of catastrophic spending in Ireland (see Box 5.3). The fact that hospital care only represents 7% of catastrophic spending in the first quintile probably means that, unlike people who are better-off, people in the lower income quintile do not exert the option to use private services and instead use the public services everyone is entitled to. Similarly, in Greece and Cyprus, hospital services represent a larger share of catastrophic spending at population level, but not for the people in the bottom quintile. Overall though, as seen in chapter 4, hospital service use does not appear to be differentiated across income in the EU.

For ***outpatient medical care***, third-party coverage which averages at 79% across EU and OECD countries is particularly low in Bulgaria, Latvia and Cyprus, at around 50% (see Figure 5.12). As seen in Chapter 4, Latvia has the highest proportion of people declaring forgoing medical care for financial reasons in Europe (around 23%, 37% among the poor). Although still high (11%), the proportion of people in the first quintile who forgo medical care for financial reason in Cyprus is much less worrying. In that country, for people below a certain level of income access to care in the public sector is either free or subject to co-payments which increase with income. Overall though, and despite being less comprehensively covered than inpatient care, outpatient care is a relatively modest contributor to catastrophic payments in EU countries, either at population level or among the poor (Box 5.3).

## Box 5.3. Which goods and services drive catastrophic spending?

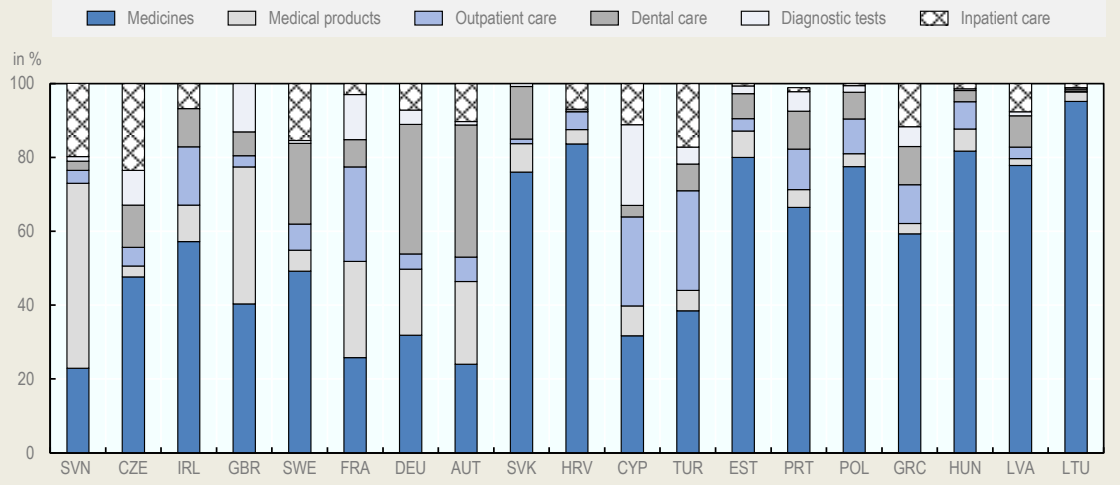
The two charts below break down out-of-pocket payments in households with catastrophic health spending by type of health care in 19 European countries for two different population groups. The upper chart displays the average composition for all households with catastrophic spending in each country. The lower chart shows the average composition for households with catastrophic spending in the lowest consumption quintile.

### Figure 5.13. Breakdown of spending among households with catastrophic spending, all households




Note: Percentage in brackets indicates the share of households incurring catastrophic spending in a country. Countries are thus ranked by increasing share of households with catastrophic spending.
Source: WHO Regional Office for Europe 2019.

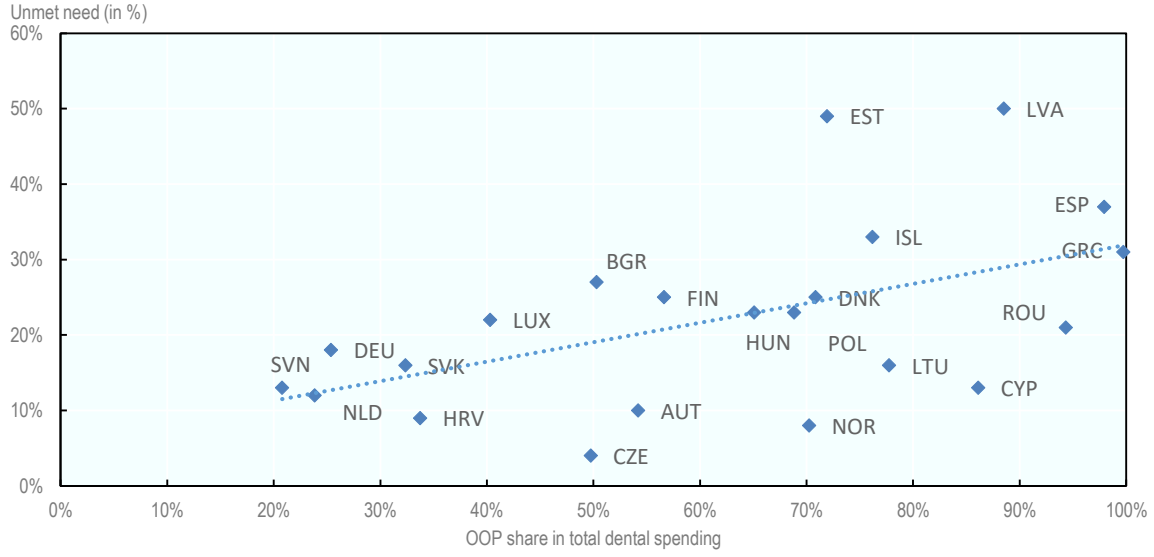
### Figure 5.14. Breakdown of spending among households with catastrophic spending, lowest consumption quintile




*Source*: WHO Regional Office for Europe 2019.

The variation in the share of ***pharmaceutical*** spending covered publicly in EU and OECD countries is particularly large: it ranges between less than 20% in Cyprus and Bulgaria to 80% or more in Luxembourg and Germany (see Figure 5.12). In many countries, the market for over-the-counter (OTC) medicines is an important factor explaining lower coverage shares (in Poland, for example, half of pharmaceutical expenditure are due to OTC medicines). In Canada (30%) and Slovenia (26%), voluntary health insurance finances more than a quarter of the entire medicines bill. VHI also plays a role in covering pharmaceuticals in Cyprus (8%), France (7%), Luxembourg and Denmark (both 6%). Nevertheless, across the EU and OECD, co-payments for pharmaceuticals are generally more substantial than for acute inpatient and primary care (OECD, 2016[17]; Paris et al., 2016[18]). Unsurprising, pharmaceutical spending is the key contributor to catastrophic out-of-pocket payments at population level in all EU countries where catastrophic spending affects more than 5% of the population (Estonia, Portugal, Poland, Greece, Hungary, Latvia and Lithuania) (see Box 5.3). The costs of medicines is the single-most important driver of catastrophic spending among the poor in most (15 out of 19) countries.

## Figure 5.15. Unmet needs for dental care due to cost in the first quintile compared to the share of out-of-pocket spending in dental spending




Note: In this chart unmet need is only displayed for the 1st income quintile.
Source: EHIS-2; Eurostat Database; OECD Health Statistics 2018.

Finally, there are important differences in coverage for ***dental care*** across EU and OECD countries (Paris et al., 2016[18]; Auraaen et al., 2016[19]). In some countries, such as Canada, Cyprus, Greece, Latvia, the Netherlands, Romania, Spain and Switzerland, less than 10% of total costs are covered by public schemes (see Figure 5.12). In those countries, dental care is generally not included in the benefit package but some dental services for particular groups of patients might be. In countries with low public coverage for dental care, supplementary insurance to cover dental costs can play a big role, as can be seen in the Netherlands, where voluntary health insurance covers more than 70% of all dental costs, or in Canada (56%), Slovenia (29%) and Australia (19%). Yet, third-party financing for dental consultations and dental prosthesis is relatively limited in many European countries. As a consequence, out-of-pocket payments for dental care can cause financial hardship. Indeed, across all population groups, spending for dental care is the main contributor of catastrophic health spending in five countries where the prevalence of catastrophic spending is otherwise moderate (Sweden, France, Germany, Austria, and the Slovak Republic) (see Box 5.3). In the lowest income quintile, dental spending is much less likely to drive catastrophic spending. However, this does not mean that the poor are better protected against the cost of dental services. The more reasonable

assumption is that they forgo care. In fact, Figure 5.15 shows that the higher the share of out-of-pocket spending for dental care in overall dental costs is, the higher is the share of people with unmet needs for dental care due to financial reasons among the population with the lowest income.

In sum, in most EU countries, pharmaceuticals are the single largest driver of catastrophic spending for people in the lowest income quintile as well as for the entire population in most countries where catastrophic spending affects more than 5% of households (WHO Regional Office for Europe, 2019[5]). When it comes to dental care, coverage by third-party payers is much lower (around 30% public and 8% private) and unmet needs for financial reasons are generally higher, especially among the poor, but for those who seek care in the general population, dental spending can still be a source of financial hardship.

### *5.4.3. Policy levers can help reduce financial hardship of households, especially for the poor*

The previous section showcases a large variation in the share of costs covered for a number of key health services across EU and OECD countries. In general, the higher the share of all costs left for patients to pay the more likely it is that it causes financial hardship or represent a barrier to access to care leading to unmet needs, and countries where out-of-pocket represent less than 15% of the total cost have much lower levels of financial hardship. But the data also show that given comparable levels of out-of-pocket spending some countries fare better than others in avoiding financial hardship for their populations, especially the poor. One core element explaining the difference in the financial protection in EU countries is related to coverage design (WHO Regional Office for Europe, 2019[5]).

First and foremost, ensuring the entire population has access to public coverage is a prerequisite to guaranteeing they can turn to the health system when in need. While this is the case in many EU and OECD countries, pockets of populations remain uncovered in some countries, even among legal residents. Those excluded are generally more vulnerable and although they may have access to emergency services, it would be preferable to ensure they are covered and have more options to access care regularly.

Beyond that, there are ways in which public coverage can be organised to limit financial hardship, especially among the poor.

- Co-payment design: countries where co-payments are fixed rather than set as a percentage of the cost generally have lower levels of co-payments overall which translates into better financial protection.
- Another way to reduce the level of catastrophically high out-of-pocket spending is to exempt vulnerable population groups from having to make co-payments. Based on the information for 21 EU countries participating in the 2016 OECD Health System Characteristics Survey, all countries exempt children from cost-sharing and the vast majority extend this (total or partial) exemption to disabled people and those with certain medical conditions. Yet, only around half of the countries make total or partial co-payment exemptions for people with low income, beneficiaries of social benefits and senior citizens (OECD, 2016[17]).
- Another effective tool to limit co-payments is to define a co-payment ceiling either for specific services or for all co-payments. Such instruments are in place in many countries, with the ceiling being defined either as a nominal amount (e.g. Denmark, Sweden) or as a share of annual income as seen, for example, in Austria, Germany or Luxembourg (Paris et al., 2016[18]).

The examples of Croatia, France and Slovenia suggest that voluntary health insurance can be leveraged to reduce the impact of out-of-pocket payments on access and financial hardship if it explicitly covers co-payments. This requires widespread access to private coverage, however, and extensive measures to ensure it is accessible and affordable for low-income groups (WHO Regional Office for Europe, 2019[5]).

The importance of pharmaceutical spending in explaining financial hardship and the fact that more than 7% of adults across the EU decide not to purchase the medicines prescribed by physicians because of the cost (see chapter 4) warrants more attention from policy makers. Pharmacotherapies play a key role in both primary and secondary prevention of many diseases. Several studies have also shown that financial barriers to accessing necessary medicines are strongly correlated not only with poorer health outcomes but also increased use and cost of other health services (Kesselheim et al., 2015[20]). Coverage policies clearly have a role to play in improving access and reducing financial hardship, in tandem with policy levers to improve the take-up of generics and biosimilars, reduce the overall costs of medicines and promote their rational prescribing, dispensing and use – by working with physicians and pharmacists as well as patients.

## 5.5. Conclusion

The first chapter of this report highlighted the importance of combining different approaches to assess a health system's ability to provide affordable access to quality care. The two previous chapters (Chapter 3 and Chapter 4) showed that in most countries the poorer citizens are less likely to use care and more likely to face barriers and delay or forgo care. Having to pay for care out-of-pocket is one of the main reasons why this happens. But when turning to the health system it can also put an excessive strain on their budget and generate financial hardship. This chapter turns more explicitly to the affordability angle of the access equation.

Key findings include:

- Health care is less affordable for households with low income than those with higher income. On average, 17% of European households are only able to make health care payments under difficulties or great difficulties. For households below the poverty line this share is 30%.
- Across the EU, around 5.5% of households on average face catastrophically high out-of-pocket spending for health, which is concentrated among the poor in all countries.
- There is a strong correlation between the share of households with catastrophic health spending and the share of out-of-pocket spending in total health spending in a country.
- Hospital care and medical outpatient care are covered relatively well in most EU and OECD countries. This is not necessarily the case for pharmaceuticals and dental care. High out-of-pocket costs for pharmaceuticals is the main reason why poor people face catastrophically high health care costs. Faced with high costs of dental treatment, people with low income may forego care altogether because they cannot afford it in countries with low coverage for this type of care.
- The design of collectively financed health coverage affects the level of spending left for the patients to pay and can reduce or exacerbate inequalities in the financial protection against the costs of health care.

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# Annex 5.A. Data on financial protection using indicators for global monitoring

The following table presents data on financial protection for EU Member States and OECD countries using global indicators defined by WHO and the World Bank in the context of the Sustainable Development Goals (SDGs).

## Annex Table 5.A.1. Data on financial protection using indicators for global monitoring in the context of the SDGs

| | SDG-UHC indicator 3.8.2: Incidence of catastrophic expenditure (%) | | | Incidence of impoverishment due to out-of-pocket health spending (%) | | |
|---|---|---|---|---|---|---|
| | data year | at 10% of households total consumption or income | at 25% of households total consumption or income | data available | Poverty line: at 2011 PPP USD 1.90-a-day | Poverty line: at 2011 PPP USD 3.10-a-day |
| Australia | 2010 | 3.71 | 0.50 | yes | 0.00 | 0.00 |
| Austria | 1999 | 4.31 | 0.66 | no | --- | --- |
| Belgium | 2010 | 11.45 | 1.39 | yes | 0.00 | 0.00 |
| Bulgaria | 2010 | 12.84 | 0.76 | yes | 0.00 | 0.13 |
| Canada | 2010 | 2.64 | 0.51 | yes | 0.03 | 0.03 |
| Chile | 2006 | 33.07 | 11.52 | yes | 0.65 | 2.59 |
| Croatia | 2010 | 2.80 | 0.26 | yes | 0.00 | 0.00 |
| Cyprus | 2010 | 16.07 | 1.50 | yes | 0.00 | 0.00 |
| Czech Republic | 2010 | 2.22 | 0.05 | yes | 0.00 | 0.00 |
| Denmark | 2010 | 2.93 | 0.49 | yes | 0.00 | 0.00 |
| Estonia | 2010 | 8.79 | 1.19 | yes | 0.00 | 0.08 |
| Finland | 2010 | 6.35 | 0.97 | yes | 0.00 | 0.00 |
| France | -- | -- | -- | no | --- | --- |
| Germany | 1993 | 1.41 | 0.07 | yes | 0.00 | 0.00 |
| Greece | 2010 | 14.64 | 1.78 | yes | 0.00 | 0.00 |
| Hungary | 2010 | 7.38 | 0.31 | yes | 0.00 | 0.03 |
| Iceland | 1995 | 6.90 | 0.94 | yes | 0.00 | 0.00 |
| Ireland | 2010 | 6.40 | 0.69 | yes | 0.00 | 0.00 |
| Israel | 2012 | 6.72 | 0.95 | yes | 0.00 | 0.00 |
| Italy | 2010 | 9.29 | 1.08 | yes | 0.00 | 0.00 |
| Japan | 2008 | 6.17 | 2.01 | no | --- | --- |
| Korea | 2008 | 13.53 | 4.01 | yes | 0.00 | 0.04 |
| Latvia | 2006 | 10.91 | 1.83 | yes | 0.04 | 0.11 |
| Lithuania | 2010 | 9.79 | 1.64 | yes | 0.00 | 0.01 |
| Luxembourg | 2010 | 3.38 | 0.15 | yes | 0.00 | 0.00 |
| Malta | 2010 | 15.93 | 2.81 | yes | 0.00 | 0.00 |
| Mexico | 2012 | 7.13 | 1.91 | yes | 0.28 | 0.69 |
| Netherlands | -- | -- | -- | no | --- | --- |
| New Zealand | -- | -- | -- | no | --- | --- |
| Norway | 1998 | 5.09 | 0.50 | yes | 0.00 | 0.00 |
| Poland | 2012 | 13.93 | 1.61 | yes | 0.00 | 0.09 |
| Portugal | 2010 | 18.38 | 3.31 | yes | 0.00 | 0.00 |

| | SDG-UHC indicator 3.8.2: Incidence of catastrophic expenditure (%) | | | Incidence of impoverishment due to out-of-pocket health spending (%) | | |
|---|---|---|---|---|---|---|
| | data year | at 10% of households total consumption or income | at 25% of households total consumption or income | data available | Poverty line: at 2011 PPP USD 1.90-a-day | Poverty line: at 2011 PPP USD 3.10-a-day |
| Romania | 2012 | 11.99 | 2.29 | yes | 0.00 | 0.30 |
| Slovak Republic | 2010 | 3.77 | 0.44 | yes | 0.00 | 0.02 |
| Slovenia | 2012 | 2.90 | 0.26 | yes | 0.00 | 0.00 |
| Spain | 2010 | 5.73 | 1.21 | yes | 0.00 | 0.00 |
| Sweden | 1996 | 5.53 | 0.69 | yes | 0.00 | 0.00 |
| Switzerland | -- | -- | -- | no | -- | -- |
| Turkey | 2012 | 3.10 | 0.32 | yes | 0.09 | 0.20 |
| United Kingdom | 2013 | 1.64 | 0.48 | yes | 0.00 | 0.00 |
| United States | 2013 | 4.77 | 0.78 | yes | 0.00 | 0.00 |

Source: WHO/World Bank (2017[6]).

## Notes

[1] On an aggregate level, data on OOP spending as a share of total health spending are based on the System of Health Accounts (SHA) accounting framework. Depending how countries have implemented this framework HBS can be a data source to measure aggregate OOP spending but other data sources, e.g. administrative records or provider statistics, also exist. However, HBS need to be used to distinguish household spending on health by different household characteristics, for example income

[2] In the US, costs for health insurance represents 6.8% of average annual expenditure for people in the lowest income quintile while they only account for 4.6% for people in the highest income quintile.

[3] Voluntary coverage most typically refers to private insurance, but also includes employer-based financing schemes or charities whose role is negligible in most European and OECD countries.

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OECD Health Policy Studies

# Health for Everyone?

## SOCIAL INEQUALITIES IN HEALTH AND HEALTH SYSTEMS

Good health is a key component of people's well-being. It is a value in itself but – through its influence on social, education and labour market outcomes – being in good or bad health has also wider implications on people's chances of leading a fulfilling and productive life. Yet, even in the OECD countries, health inequality persists with severe consequences on the goal of promoting inclusive growth. This report documents a comprehensive range of inequalities in health and health systems to the detriment of disadvantaged population groups in a large set of OECD and EU countries. It assesses the gaps in health outcomes and risk factors between different socio-economic groups. When it comes to health systems, the report measures inequalities in health care utilisation, unmet needs and the affordability of health care services. For each of these different domains, the report identifies groups of countries that display higher, intermediate, and low levels of inequality. The report makes a strong case for addressing health-related inequalities as a key component of a policy strategy to promote inclusive growth and reduce social inequalities. It also provides a framework for more in-depth analyses on how to address these inequalities at country level.

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