

# Global monitoring report on financial protection in health 2019



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# Global Monitoring Report on Financial Protection in Health 2019



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# Contents

<b>Contributors</b>	<b>vi</b>
<b>Executive summary</b>	<b>Vii</b>
<b>Monitoring financial protection</b>	
Measures of financial protection	1
Data sources	4
Global and regional estimation methods	4
<b>Global and regional progress on catastrophic health spending (SDG 3.8.2 indicators) and impoverishment due to out-of-pocket health spending</b>	
Levels and trends in catastrophic health spending: the SDG 3.8.2 indicators	9
Levels and trends in impoverishment due to out-of-pocket health spending (SDG-related indicators)	12
<b>A deeper look</b>	
Rural–urban inequalities in catastrophic and impoverishing health spending	19
Gender inequalities in catastrophic health spending: case study from the WHO region of the Americas	21
Drivers of financial hardship in the WHO European Region and South-East Asia Region and selected countries mostly in Africa	22
<b>Limitations of the present report</b>	<b>25</b>
<b>Notes</b>	<b>47</b>
<b>References</b>	<b>49</b>
<b>Annexes</b>	
1 Sustainable Development Goal universal health care indicator 3.8.2: catastrophic health spending by country, most recent year available	29
2 Sustainable Development Goal–related indicators of impoverishment due to out-of-pocket health spending by country, most recent year available	34
3 World Health Organization European Region indicators of catastrophic and impoverishing health spending	38
4 Sensitivity of 2015 estimates to recency of the Indian and Chinese data and econometric modelling	39
5 List of countries by United Nations regions	41
6 Incidence of catastrophic health spending as tracked by SDG indicator 3.8.2, 10% of household spending threshold, by World Health Organization region, World Bank region and World Bank income group	42
7 Incidence of catastrophic health spending as tracked by SDG indicator 3.8.2, 25% of household spending threshold, by World Health Organization region, World Bank region and World Bank income group	43
8 Incidence of impoverishment due to out-of-pocket health spending at the \$1.90 per person per day poverty line (in 2011 PPP) by World Health Organization region, World Bank region and World Bank income group	44
9 Incidence of impoverishment due to out-of-pocket health spending at the \$3.20 per person per day poverty line (in 2011 PPP) by World Health Organization region, World Bank region and World Bank income group	45
10 Incidence of impoverishment due to out-of-pocket health spending at the relative poverty line of 60% of median daily per capita consumption by World Health Organization region, World Bank region and World Bank income group	46

## Boxes

1	Out-of-pocket health spending can be directly or indirectly related to using services, but the focus is on direct relationships when monitoring a health system's performance in providing financial protection	2
2	Ways to measure catastrophic health spending	3
3	Financial protection monitoring for 2019: what has changed since 2017?	5
4	Global and regional estimates of financial protection indicators combine survey-based estimates at the country level, with and without econometric modelling, and imputation of missing values	6
5	Breakdown of households with catastrophic health spending by risk of impoverishment in the WHO European Region	16
6	The incidence of catastrophic health spending as tracked by Sustainable Development Goal indicator 3.8.2 will continue to increase at the current pace of growth in out-of-pocket health spending as a share of household final consumption.	18
7	Acting on the evidence: better copayment policy is key in the World Health Organization European Region	26
8	Unmet needs are part of financial protection analysis in the World Health Organization European Region	27

## Figures

1	Globally, financial protection against out-of-pocket health spending decreased continuously between 2000 and 2015, as tracked by Sustainable Development Goal indicator 3.8.2 on catastrophic health spending	viii
2	Globally, the population impoverished by out-of-pocket health spending is increasing at the relative poverty line of 60% of median daily per capita consumption or income although decreasing at the \$1.90 and \$3.20 a day absolute poverty lines	viii
3	Availability of Sustainable Development Goal and SDG-related estimates of financial protection in the global database assembled for this report varies by country, but a majority of countries have estimates for both 2000–2009 and 2010–2018	6
4	There are large variations within regions in the percentage of people with catastrophic health spending, as tracked by Sustainable Development Goal indicator 3.8.2	10
5	Progress on financial protection, as tracked by Sustainable Development Goal indicator 3.8.2, varies across country income groups, steadily declining only in low-income countries since 2005	11
6	Across countries, there are large variations in the percentage of the population impoverished by out-of-pocket health spending at all poverty lines	12
7	Across countries, there are also marked variations in the poverty gap increase attributable to out-of-pocket health spending at all poverty lines	13
8	The number and percentage of people impoverished by out-of-pocket health spending decreased sharply only in low-income countries since 2005	16
9	Rural–urban inequalities in the percentage of the population with catastrophic and impoverishing health spending, as tracked by Sustainable Development Goal and Sustainable Development Goal-related indicators, by country income group	20
10	In selected countries in the WHO Region of the Americas, female-headed households are not necessarily more likely than male-headed households to incur catastrophic health spending as tracked by Sustainable Development Goal indicator 3.8.2, when other characteristics were not controlled for	21
11	In six of eight countries in the World Health Organization South-East Asia Region, spending on medicines accounted for more than 75% of total out-of-pocket health spending among households incurring any out-of-pocket health spending	22
12	Poorer households in the WHO South-East Asia region usually spent disproportionately more on medicines than richer households	22
13	In the World Health Organization European Region, households with catastrophic health spending are spending mostly on outpatient medicines	24
14	Medicines and outpatient care are the main drivers of out-of-pocket expenditures in selected countries, mostly in Africa	24

**Tables**

1	Global and regional trends in catastrophic health spending, as tracked by Sustainable Development Goal indicator 3.8.2	10
2	Global and regional trends in impoverishment due to out-of-pocket health spending at the \$1.90 a day and \$3.20 a day absolute poverty lines and at the relative poverty line of 60% of median per capita daily consumption	14
3	People in rural areas do not necessarily experience a higher incidence of catastrophic health spending, but they tend to experience a higher incidence of impoverishing health spending	19

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## Executive summary

Financial protection in health means that everyone can obtain the health care services they need without experiencing financial hardship. It is a key health system objective and an important dimension of universal health coverage, a target (3.8) of Sustainable Development Goal (SDG) 3.

Over the past two decades, the World Health Organization (WHO) and the World Bank have been tracking financial protection using household survey data to compare how much people spend out of pocket on health care with their household's ability to pay. For the first time, this joint report establishes global and regional 2015 baselines for an SDG indicator of catastrophic health spending and infers from previous trends the challenges to come in protecting people from the financial consequences of paying out of pocket for the health services they need.

Evidence is presented on levels of and trends in two types of SDG and SDG-related indicators of financial protection at global and regional levels and across country income groups. Specifically, the report offers indicators of catastrophic health spending (SDG indicator 3.8.2, defined as out-of-pocket health spending exceeding 10% or 25% of total household consumption or income) and indicators of impoverishing health spending (capturing the impact of out-of-pocket health spending on poverty using various global poverty lines to demonstrate the implication of such expenditures on countries at all income levels).

To better understand who experiences financial hardship when paying out of pocket for health, the report presents a first set of findings on rural-urban inequalities to support discussions about the eradication of rural poverty under the SDGs and of gender inequalities from selected countries in the Americas. Evidence on which services drive financial hardship is available for the World Health Organization European Region and South-East Asia Region and selected countries in the African continent. This report offers only limited links to country policies drawing on key findings when available from regional monitoring. More in-depth discussion is also available from the WHO global monitoring report on universal health coverage published at the same time as this report (1).

### Levels and trends in financial protection: 2019 main findings

- In 2015, the year the SDGs were adopted, 926.6 million people incurred catastrophic health spending, defined as out-of-pocket health spending (out-of-pocket payments) exceeding 10% of the household budget (total consumption or income), and 208.7 million people incurred out-of-pocket health spending exceeding 25% of the household budget.
- In 2015, the UN Asia Region<sup>1</sup> and middle-income countries had the largest number of people and highest percentage of

the population facing catastrophic health spending, with out-of-pocket health spending exceeding 10% and 25% of their household budget.

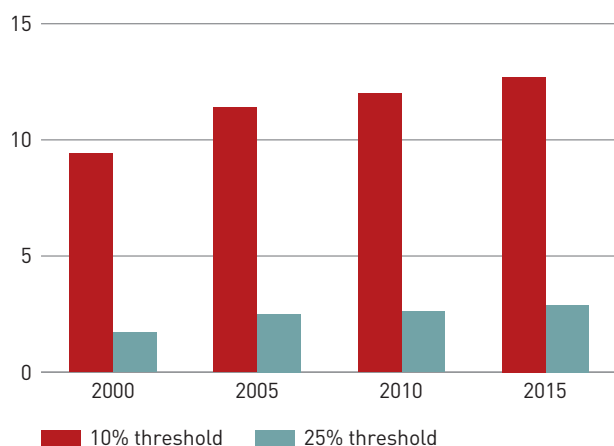
- Globally, financial hardship due to out-of-pocket health spending increased continuously between 2000 and 2015, as tracked by SDG indicator 3.8.2 on catastrophic health spending (Figure 1). The global population incurring catastrophic health spending increased by 3.6% a year between 2000 and 2015 at the 10% threshold, from about 571 million people to about 927 million, and by 5.3% a year at the 25% threshold, from about 100 million people to about 200 million people.
- The rate of increase in the number of people and percentage of the population with catastrophic health spending between 2010 and 2015 was similar or worse than between 2005 and 2010. The worldwide population with out-of-pocket health spending exceeding the 10% threshold increased on average by 2.4% a year between 2010 and 2015, similar to the average increase between 2005 and 2010. The population with out-of-pocket health spending exceeding the 25% threshold increased faster between 2010 and 2015 – at 3.2% a year – than between 2005 and 2010 – at 2.4% a year.
- North America is the only UN region where the number of people and the percentage of

population with catastrophic health spending fell between 2000 and 2015.

- Between 2000 and 2015, the largest concentration of the world population with catastrophic health spending (as tracked by SDG indicator 3.8.2) shifted from low-income countries to middle-income countries. The gap between high- and low-income countries in the incidence of catastrophic health spending narrowed.
- In 2015, out-of-pocket health spending contributed to pushing more people below the poverty line: 89.7 million people (1.2%) were pushed into extreme poverty (below \$1.90 per person per day in 2011 purchasing power parity terms), while 98.8 million (1.4%) were pushed below \$3.20 per person per day and 183.2 million were pushed into poverty defined in relative terms (below 60% of median daily per capita consumption or income in their country). At all these poverty lines, the largest number and percentage of world population impoverished by out-of-pocket health spending was found in Asia or in middle-income countries.
- Between 2000 and 2015, out-of-pocket health spending continuously contributed to increasing global poverty (Figure 2). The pace varied, depending on the poverty line:
  - The decline from 2% to 1.2% in impoverishment at the \$1.90 a day threshold due to out-of-pocket health spending

**FIGURE 1** Globally, financial protection against out-of-pocket health spending decreased continuously between 2000 and 2015, as tracked by Sustainable Development Goal indicator 3.8.2 on catastrophic health spending

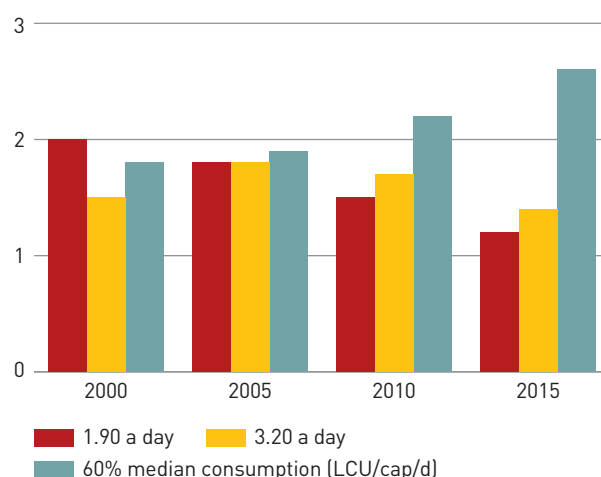
Percentage of the population (SDG indicator 3.8.2) with out-of-pocket health spending exceeding 10% or 25% of the household budget



Source: Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

**FIGURE 2** Globally, the population impoverished by out-of-pocket health spending is increasing at the relative poverty line of 60% of median daily per capita consumption or income although decreasing at the \$1.90 and \$3.20 a day absolute poverty lines

Percentage of the population



Source: Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

coincides with a major drop in the world's population living in extreme poverty.

- The share impoverished at the \$3.20 a day threshold increased from 1.5% in 2000 to 1.8% in 2005 but decreased marginally to 1.7% in 2010 and to 1.4% in 2015. This slower reduction than at the \$1.90 a day threshold coincides with the slower decrease in the global population living on less than \$3.20 per person per day estimated over the same period.
- It is not possible to eliminate impoverishment due to out-of-pocket health spending using a relative poverty line, but it is possible to reduce it. To this end, out-of-pocket health expenditures should not be a major driver of economic disadvantage compared with other drivers in the society. The increasing rate of impoverishment at the relative poverty line from 1.8% in 2000 to 2.5% in 2015 suggests that this did not happen: on the contrary, out-of-pocket health spending contributed to the deteriorating welfare of the less well-off in each country.
- The pace of reduction in impoverishment due to out-of-pocket health spending at the \$1.90 and \$3.20 a day poverty lines is driven by the Asia Region.
- Between 2000 and 2015, the largest concentration of the world population impoverished by out-of-pocket health spending shifted from low-income to lower-middle-income countries at both the \$1.90 and \$3.20 a day poverty lines and to upper-middle-income countries at the relative poverty line of 60% of median per capita consumption. The gap between low- and high-income countries in the population impoverished by out-of-pocket health spending at the relative poverty line narrowed, both having a similar percentage of people and high-income countries having almost twice the number of people.
- At the current pace of increase in the national share of out-of-pocket health spending in household final consumption, catastrophic health spending as measured by SDG indicator 3.8.2 will continue to increase until 2030.
- Rural–urban gaps in the percentage of the population with out-of-pocket health spending exceeding 10% of household consumption or income are widest in low- and high-income countries, while rural–urban gaps in the percentage with out-of-pocket health spending exceeding 25% of household consumption or income are widest in low- and lower-middle-income countries. At the \$1.90 a day and \$3.20 a day absolute poverty lines, rural–urban gaps in impoverishing health spending are greatest in lower-middle-income countries.
- A study from the World Health Organization (WHO) Region of the Americas on gender inequalities suggests that women tend to have higher out-of-pocket health spending than men, individually and when they are the household's head. But this does not always lead to a higher incidence of catastrophic health spending as tracked by SDG indicator 3.8.2 for households headed by women, even when controlling for the poverty status and geographic location of the household.
- Evidence from the WHO European Region and South-East Asia Region and selected countries mostly on the African continent suggests that out-of-pocket spending on medicines is a leading cause of catastrophic and impoverishing health spending.
- Global analysis has shown that greater reliance on public spending on health (defined as the share of total health spending channelled through social security funds and other government agencies) tends to be negatively correlated with the incidence of catastrophic and impoverishing health spending (pointing to better financial protection outcomes) and has found no significant association between the indicators of financial protection and the share of total health spending channelled through private voluntary insurance (suggesting no significant effect on financial protection outcomes). Increases in public spending on health or reductions in out-of-pocket spending are not enough to improve financial protection in all contexts, however. For instance, evidence from the WHO European Region shows that coverage policy – the way in which coverage is designed, implemented and governed – plays a key role in determining financial hardship, not just patterns of health spending.
- In summary, indicators of financial protection point to mixed improvements between 2000 and 2015 in protecting people from incurring financial hardship when spending out of pocket on health. The number of people and percentage of the population impoverished by out-of-pocket health spending at the \$1.90 and \$3.20 per person per day thresholds has been decreasing at different rates. At the same time, there have been a growing number of people and

percentage of the population incurring catastrophic health spending as tracked by SDG indicator 3.8.2, along with an increase in impoverishment due to out-of-pocket health spending using a relative poverty line. Previous global analysis showed that these indicators are correlated with GDP per capita, suggesting that as countries

become richer, people may face greater financial hardship due to increased exposure to out-of-pocket payments. The challenge for policy is to ensure that additional resources for health care are channelled through compulsory pooled prepayment mechanisms rather than through out-of-pocket spending.

# Monitoring financial protection

## Measures of financial protection

### **OUT-OF-POCKET HEALTH SPENDING (OUT-OF-POCKET PAYMENTS) IS A SOURCE OF FINANCIAL HARDSHIP**

Out-of-pocket health spending is defined as household spending incurred when using a service to get any type of health care (promotive, preventive, curative, rehabilitative, palliative or long-term) and to receive any supporting service (such as laboratory services), medicine or health product needed to get such care. The type of health care provider is irrelevant if the spending is directly related to a health need (Box 1).

Out-of-pocket health spending is typically financed by a household's income (including remittances), savings or loans, but it excludes any third-party payer reimbursement (such as the government, a health insurance fund or a private insurance company) (2). Because such spending leads to service delivery only if the individual pays, it is a source of socioeconomic inequality in health care access. Because out-of-pocket health spending is directly related to the underlying severity of the health condition (sicker people spend more) and is based solely on the household's ability to pay (only within-household resource pooling is possible), it can also be a source of financial hardship. Whether this happens is assessed by

comparing a household's out-of-pocket health spending to its ability to pay.

### **DEFINING CATASTROPHIC HEALTH SPENDING AND IMPOVERISHMENT DUE TO OUT-OF-POCKET HEALTH SPENDING**

**When a household's out-of-pocket health spending exceeds a given percentage of its ability to pay, it is labelled catastrophic – that is, likely to reduce the household's consumption of other basic needs**

Within the Sustainable Development Goal (SDG) monitoring framework, catastrophic health spending is defined as out-of-pocket health spending exceeding 10% or 25% of the household's total consumption or income (budget) (4,5,6). Richer households might be spending more than a quarter of their budget on health care, which might lead to cutting consumption of other needs but not necessarily to below-subsistence levels. Less wealthy households might be spending less than 10% of their budget on health and yet struggle to reach a decent living standard. There are different ways to monitor catastrophic health spending, with the metrics varying according to how ability to pay is defined to take into account that the poorest population groups have fewer economic resources available to spend on health out of their own pocket (Box 2) (7,13).



**BOX 1****Out-of-pocket health spending can be directly or indirectly related to using services, but the focus is on direct relationships when monitoring a health system's performance in providing financial protection**

The use of health services potentially entails two types of expenditures: those that are related to the direct cost of treatment, such as expenditures on medicines, medical laboratory services and doctor's fees, and those related to indirect costs, such as transportation.

The components of the expenditures on direct costs are defined in division 06 of the UN classification of individual consumption according to purpose (COICOP 2018) (3). They include expenditures on medicines and medical products (06.1), outpatient care services, including dental care (06.2), inpatient care services, including inpatient

dental care (06.3), and other health services (06.4). Financial protection indicators focus on the overall consequences of such expenditures for the household's ability to spend on other needs and living standards.

The opportunity cost of seeking care can also represent a substantial burden (for example, lost income) but providing protection against such cost is beyond the scope of the health system. In addition, reliable data on this is not available across countries, so it is not included in the estimates of SDG and SDG-related indicators of financial protection.

**Global indicators of impoverishment due to out-of-pocket health spending focus on expenditures that leave household non-medical consumption below or further below subsistence levels, as identified by a poverty line (14)**

The incidence of impoverishment due to out-of-pocket health spending is an estimate of the number of people or percentage of the population living in households in which this spending leaves non-medical consumption below subsistence levels as identified by a poverty line. It is measured as the change in the poverty headcount ratio due to out-of-pocket health spending being included or excluded from the measure of household welfare, which can be either consumption or income, though consumption is the preferred measure (5,14–16). All headcount measures based on a single cut-off suffer from the same limitation: once the threshold is crossed, no other changes can be captured. Over time or across countries, the number or the percentage of the population impoverished by out-of-pocket health spending might be stable, but the gap between their non-medical consumption and the poverty line might be increasing as a result of their out-of-pocket health expenditures.

The poverty gap increase due to out-of-pocket health spending is one way to measure how much out-of-pocket health spending pushes people below or further below the poverty line (the difference in the poverty gap due to out-of-pocket health spending being included or excluded from the measure of household welfare) (5,7,14,17). This difference

corresponds to the total out-of-pocket health spending for households that are already below the poverty line, to the amount that exceeds the shortfall between the poverty line and total consumption for households that are impoverished by out-of-pocket health spending and to zero for households whose consumption is above the poverty line after accounting for out-of-pocket health spending. These amounts can be expressed in 2011 purchasing power parity (PPP) terms for cross-country comparability, or as a percentage of the poverty line.

**For global monitoring, three poverty lines are used to demonstrate the interdependence between the eradication of poverty and universal health coverage:**

- An absolute poverty line of extreme poverty, defined as living on \$1.90 a day (in 2011 PPP terms<sup>2</sup>), which corresponds to the median national poverty line of low-income countries (18,20).
- A higher poverty line of \$3.20 a day (in 2011 PPP terms), which corresponds to the typical standard used to assess national poverty levels by lower-middle-income countries (18).
- A relative poverty line of 60% of median daily per capita consumption or income, which comes closest to the relative poverty line used by Eurostat to monitor poverty in the European Union. This relative poverty line captures the impact of out-of-pocket health spending on poverty across all countries, at all income group levels.

**To ensure cross-country comparability and because consumption is the preferred**

## BOX 2

## Ways to measure catastrophic health spending

Some studies define out-of-pocket health spending as catastrophic when it exceeds a given percentage (for example, 10% or 25%) of consumption or income. This so-called “budget share” approach is adopted in SDG 3.8.2 (4). Empirically, when the budget share approach is used, catastrophic spending is usually less concentrated among “poor people” (or more concentrated among “rich people”). Some households may appear to be richer than they are because they have borrowed money to finance spending on health (or other items), but it can be safely assumed that households in the poorest quintile are genuinely poor.

Other studies relate health spending to consumption or income less a deduction for necessities, rather than to total consumption or income. The argument is that everyone needs to spend at least some minimum amount on basic needs such as food and housing, and that these expenses absorb a larger share of a poor household’s consumption or income than of a rich household’s. As a result, a poor household may not be able to spend much, if anything, on health care. By contrast, a rich household may spend 10% or 25% of its budget on health care and still have enough resources left over to meet its basic needs.

There are different approaches to deducting expenditures for basic needs (7–11). The main differences between them concern the amount deducted (actual spending or a standard amount), the item or items included as basic needs, the method used to derive the standard amount and the treatment of households whose actual spending is below the standard amount.

Some studies deduct all of a household’s actual spending on food (7). Although poor households often devote a higher share of their budget to food, the share may not be a sufficient proxy for nondiscretionary consumption. Also, spending on food reflects preferences as well as factors linked to health spending: for example, households that spend less on food because they need to spend more on health care will appear to have greater capacity to pay than households that spend more on food.

To address the role of preferences in food spending, other studies deduct a standard amount from a household’s total resources to represent basic spending on food (7,11). In practice, this second approach is a partial adjustment to the actual food spending approach because the standard amount is used only for households whose actual food expenditure exceeds the standard amount. For all other households, actual food spending is deducted instead of the higher, standard amount. Both approaches therefore treat households whose actual food spending is below the standard amount in the same way. Nevertheless, catastrophic health spending may be less concentrated among rich households with the standard food approach than with the actual food spending approach.

Still other studies deduct the prevailing poverty line, essentially an allowance for all basic needs (12). Depending on the poverty line used, this approach is likely to result in a greater concentration of catastrophic spending among poor households than among rich ones compared with the budget share approach. It also links catastrophic health spending and impoverishment: households with a negative capacity to pay start off below the poverty line, even before paying for health care, and are pushed even further into poverty by any health spending. By contrast, those with out-of-pocket health spending exceeding the gap between the poverty line and their household total consumption are pushed into poverty by their health spending.

Building on the second and third approaches, an amount representing spending on three basic needs (food, housing [rent] and utilities) is deducted consistently for all households in the WHO European Region (21). As a result, catastrophic expenditure is more likely to be concentrated among poor households with this approach than with the budget share approach. This approach also links catastrophic health spending and impoverishment (see Box 5).

Source: Adapted from Box 2.2 in WHO and World Bank, *Tracking universal health coverage: 2017 global monitoring report* (5).

**welfare measure, this report uses consumption gross of out-of-pocket health spending as the measure of household welfare;** income is used only where WHO and the World Bank do not have access to consumption data for global monitoring (mostly for high-income countries). For a more detailed

discussion about the sensitivity of financial protection estimates to the choice of welfare measure, see *Tracking universal health coverage: 2017 global monitoring report* (5) and “Out-of-pocket expenditures on health: a global stocktake,” by Wagstaff, Eozenou and Smits (19).

**The main findings of this report focus on the SDG 3.8.2 indicator of catastrophic health spending (SDG financial protection indicator) and on indicators of impoverishment due to out-of-pocket health spending using global poverty lines (SDG-related financial protection indicator); see Annexes 1 and 2.** There are other ways to monitor catastrophic health spending (8–11) [see Box 2], to capture the impact of out-of-pocket spending on poor people (12,21), to define poverty lines at the global, regional and country levels to tailor policy recommendations (10,11,18,19) and to demonstrate that out-of-pocket health spending can be catastrophic, impoverishing or both. Annex 3 shows results based on these measures where available, and a detailed discussion is available in related regional reports (21–24).

Because global analysis enables countries to compare their performance to that of their peers but is insufficient to guide policy actions, this report also draws on key findings from regional monitoring; see in particular the last two sections of this report.

## Data sources

### **TIMELY MONITORING OF FINANCIAL PROTECTION IS SUBJECT TO THE AVAILABILITY OF HOUSEHOLD SURVEYS**

Financial protection monitoring relies on nationally representative household surveys with information on both household out-of-pocket health spending and total household consumption, spending or income, with consumption being the preferred welfare measure. This requirement disqualifies health-focused surveys, which generally have a wealth of information on health-seeking behaviour and related spending patterns but insufficient information on consumption or income to estimate a total at the household level. Relevant population surveys include household budget surveys, household income and expenditure surveys, household living standard surveys and socioeconomic surveys.

Relevant household surveys for financial protection monitoring are typically conducted every two to five years (5,19). Timely monitoring of financial protection is thus constrained by this availability of household surveys. There is some variation in frequency across country income groups and regions. For instance, countries in the WHO European Region (25) and upper middle- and high-income countries often conduct annual surveys. However, the availability of data to WHO and the World Bank

for producing global and regional estimates may not align with the availability of data at the national and regional levels because statistical offices do not yet routinely produce indicators of financial protection. Regional and national collaborations are ongoing, but all of the results of such collaborations are not yet included in the dataset used to produce the global and regional estimates in this report (Box 3).

For this report, WHO and the World Bank have increased the scope of the global database on financial protection (see Box 3). Overall, the global dataset has financial protection estimates for 95% of the world population in 2015. It includes estimates of catastrophic health spending for 156 countries or territories, with a total of 739 data points, and estimates of impoverishing health spending and the poverty gap due to out-of-pocket health spending for 154 countries or territories, with a total of 719 data points. Some 33 countries have estimates available for only one year (representing 8.3% of the world population in 2015), and 43 countries have no estimate available for 2010 or later (14% of the world population). A clear majority of countries have estimates available for both 2000–2009 and 2010–2018. Countries with data for only 2000–2009 are generally in Africa, and data tend to be unavailable for most fragile states or countries in conflict (Figure 3).

## Global and regional estimation methods

### **GLOBAL AND REGIONAL ESTIMATES OF FINANCIAL PROTECTION INDICATORS ARE A COMBINATION OF SURVEY-BASED DATA POINTS, INTERPOLATED AND EXTRAPOLATED DATA POINTS, ECONOMETRIC MODELLING AND IMPUTATION**

This report builds on methods used in previous analyses to recalculate global and regional estimates of SDG and SDG-related indicators of catastrophic and impoverishing health spending for the reference years 2000, 2005, 2010, (5,6,14) and it introduces new estimates for 2015 since more data are available for more countries and for more years. But not all countries have estimates available for exactly those four years, so these methods consist of “lining up” the survey-based estimates into each of the four reference years using a  $\pm 5$  years window around all reference years except 2015 for which a  $-5/+3$  years window is used. Depending on the number of survey-based estimates around the reference years, econometric modelling is sometimes needed. When there is no survey-based

## BOX 3

## Financial protection monitoring for 2019: what has changed since 2017?

**Country consultation.** As co-custodian agencies of SDG indicator 3.8.2, WHO and the World Bank consult with countries on estimates of financial protection. In 2017, 16.5% of these estimates could not be shared with a nominated country focal point. For this report, this rate fell to less than 5%. About one-third of the focal points consulted provided comments, access to new data or shared information on country-produced estimates. Findings in this report are based on data available to WHO and the World Bank by July 31, 2019. All the estimates are available from WHO (26) and the World Bank databases on financial protection (27).

**More countries.** The 2017 global monitoring report on universal health coverage (5) analysed 553 survey-based data points for catastrophic health spending and 516 for impoverishment due to out-of-pocket health spending, for a total of 133 countries or territories accounting for 93% of the world population in 2015. This 2019 report analyses 739 survey-based data points for catastrophic health spending (+34%) and 719 data points for impoverishment (+38%), for a total of 156 and 154 countries or territories for catastrophic and impoverishing health spending respectively, accounting for 95% of the world population in 2015.

**More countries with trend data.** The 2017 report analysed trend data for 93 countries. This report uses trend data for 123 countries (+32%).

**This report uses poverty lines that capture the impact of out-of-pocket health spending on poverty across all countries at all income group levels.** The 2017 report used two global poverty lines that reflected typical standards used in low-income countries (the \$1.90 a day poverty line) and lower-middle-income countries (the current \$3.20 a day poverty line, up from \$3.10 when the 2017 report came out). With these two

lines, impoverishment rates in upper-middle-income countries and high-income countries were close to or equal to zero. In this report, a country-specific relative poverty line of 60% of median daily per capita consumption or income is also used. With this line, the impact of out-of-pocket health spending is greatest in middle-income countries (including upper-middle-income ones) and is a matter of equal concern for high- and low-income countries.

**2015 baseline for the SDGs.** In the 2017 report, only 37 countries had data available for 2011–2015 (2012 was the median most recent year among the 37) For this report, 90 countries have data available for 2011–2018, with a median most recent year of 2014. It has therefore been possible to estimate global and regional figures for 2015, in addition to the reference years of 2000, 2005 and 2010. However, the 2015 figures, with a greater proportion of countries with only one estimate available over 2011–2018, relied more on econometric modelling than the figures for the three previous reference years (Annex 5).

**Evidence on catastrophic and impoverishing health spending across country income groups.** The 2017 report focused on levels and trends across UN regions. This report also analyses levels and trends across country income groups.

**Global evidence on rural–urban inequalities in catastrophic and impoverishing health spending.** For the first time, this report starts to explore rural–urban inequalities in both indicators of financial protection to support discussions about the eradication of rural poverty to implement the 2030 SDG agenda by providing evidence based on data available for 134 and 125 countries to estimate catastrophic and impoverishing health spending respectively.

estimate around a reference year within the relevant time window, regional medians are used to get around missing data issues. (Box 4 describes the lining up procedure in more detail.)

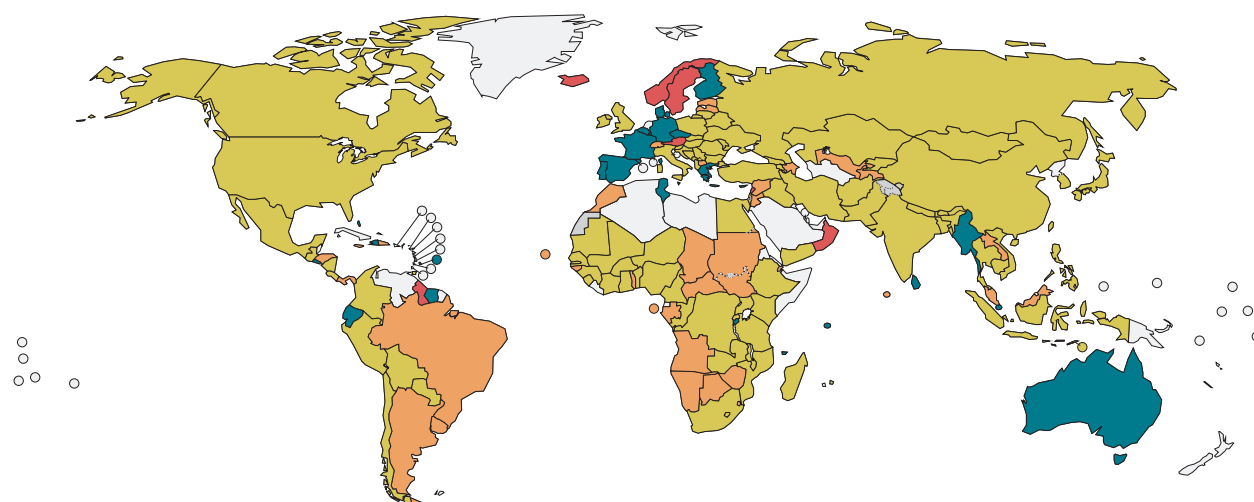
Global and regional estimates were not produced to analyse global and regional rural–urban inequalities in catastrophic and impoverishing health spending, for which the same methodological approach could be followed, or for the poverty gap increase due to out-of-pocket health spending, for which methods still need to be developed.

### Estimating the 2015 global and regional baselines for the SDGs

Given estimates for 2011–2018 for 90 countries that accounted for 87% of the world population in 2015, with a median of 2014 as most recent year of data, a 2015 baseline could be established, though it relies more on econometric modelling than for the previous reference years of 2000, 2005 and 2010.

For instance, 2015 global and regional estimates for the percentage of the population facing catastrophic health spending (SDG indicator 3.8.2) depend on modelling to line up

**FIGURE 3** Availability of Sustainable Development Goal and SDG-related estimates of financial protection in the global database assembled for this report varies by country, but a majority of countries have estimates for both 2000–2009 and 2010–2018



**Note:** This map has been produced by the World Health Organization (WHO). The boundaries, colours or other designations or denominations used in this map and the publication do not imply, on the part of WHO or the World Bank, any opinion or judgement on the legal status of any country, territory, city or area or of its authorities, or any endorsement or acceptance of such boundaries or frontiers.

■ 2010–2018 ■ 2000–2009 ■ Both 2000–2009 and 2010–2018 ■ Only pre-2000 ■ Data not available ■ Not applicable

Source: Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

#### BOX 4

### Global and regional estimates of financial protection indicators combine survey-based estimates at the country level, with and without econometric modelling, and imputation of missing values

**No econometric modelling is involved when there is an estimate available for a reference year T\*, or when there are at least two estimates available around the reference year**

When a country estimate is available for a reference year T\*, that point is used to construct the global and regional figures. When there are at least two data points in the relevant time window around the reference year ( $\pm 5$  years for the reference years 2000, 2005 and 2010 and  $-5/+3$  years for 2015), linear interpolation is used to project the estimated value of the financial protection indicator to the reference year.<sup>1</sup> For instance, for the reference year 2010, two data points are available for 92 countries (81.8% of the global population in 2015) for catastrophic health spending, enabling global and regional estimates to be based on country estimates without any econometric modelling, and two data points are available for 80 countries (78.4%) on impoverishment due to out-of-pocket health spending, again enabling global and regional estimates without any

econometric modelling (Box table). To produce global and regional figures for 2015, on the other hand, the number of countries for which no econometric modelling is needed is much lower – 34 for catastrophic health spending, or 24% of the global population, and 33 countries, also about 24%, for impoverishment due to out-of-pocket health spending.

**Some econometric modelling is needed when there is only one survey-based estimate available around the reference year or when survey-based estimates are available only outside the relevant time window around the reference year**

If only one country estimate is available within the relevant time window either before or after the reference year, a multilevel model of the rate of catastrophic payments or impoverishment is first estimated using the national share of out-of-pocket health spending in total household consumption expenditure (and household final consumption for impoverishment) as an explanatory



**BOX 4 (CONTINUED)**

variable. Then the estimated elasticity of catastrophic payments or impoverishment to the national share of out-of-pocket health spending in total consumption (controlling for household final consumption for impoverishment) is used to project the observed survey point in the reference year (6,14). In 2015, this approach was used to line up 75 country-level estimates of catastrophic health spending (accounting for 63% of the 2015 world population) and 59 country-level for impoverishment (60.4%) (see Box table). For 2010, this approach was used for only 43 country-level estimates for catastrophic health spending (around 12% of the world population in 2015) and 37 countries for impoverishment (around 10%).

For countries with no estimate available in the year window around the reference year, the same econometric specification is used to project the survey point to the reference year, using only the share of national out-of-pocket health spending in total consumption, if available (6,14). This approach to fitting values was used in

constructing the 2015 global estimates of catastrophic health spending and applied to 40 countries (8% of the 2015 world population), up from 17 in 2010 (1.8%) (see Box table). For impoverishment, fitted values were produced for 25 countries in 2015 (6.5% of the world population), up from 4 in 2010 (less than 1%).

**Median regional values are used to impute missing values**

If there are no survey-based estimates available at all, and no information is available on the national share of out-of-pocket health spending in total consumption, the regional median value of catastrophic/impoverishing health spending is used to impute values for the reference year. Across all reference years, median values are used for countries accounting for 6% of the 2015 world population at most, a proportion that is fairly constant in the production of global figures for all reference years (see Box table).

**BOX TABLE** Categories of data points used to construct global estimates of catastrophic and impoverishing health spending

	Reference year 2000 (1995–2005)				Reference year 2005 (2000–2010)				Reference year 2010 (2005–2015)				Reference year 2015 (2010–2018)			
	Countries (No.)		Global population (%)		Countries (No.)		Global population (%)		Countries (No.)		Global population (%)		Countries (No.)		Global population (%)	
	C	I	C	I	C	I	C	I	C	I	C	I	C	I	C	I
Reference year point	31	31	52.9	52.9	41	39	19.8	19.4	58	57	34.2	34.2	23	22	16.4	16.4
At least two points within band	26	18	7.6	5.8	44	32	54.7	52.8	34	23	47.6	44.2	11	11	7.6	7.6
No econometric modelling	57	49	60.5	58.7	85	71	74.5	72.2	92	80	81.8	78.4	34	33	24	24
One point within band	63	44	22.3	18.7	49	40	18.7	15.8	43	37	11.8	10.2	75	59	63.0	60.4
Fitted	28	16	11.5	9.8	18	6	2.2	0.9	17	4	1.8	0.7	40	25	8.0	6.5
Some econometric modelling	91	60	33.8	28.5	67	46	20.9	16.7	60	41	13.6	10.9	115	84	71	66.9
Regional median	67	88	5.7	12.3	63	81	4.6	11.0	63	77	4.6	10.5	66	81	5.0	8.9

C is catastrophic health spending; I is Impoverishing health spending.

**Note**

1. Wagstaff et al., Progress on catastrophic health spending (6).

survey-based estimates for 115 countries, or 71% of the 2015 the world population. In contrast, for all other reference years modelling was needed for countries that accounted for at most 34% of the 2015 world population (Box 4 table).

The proportion of missing survey-based data points is similar across all reference years (for example, 66 countries in 2015 or

5% of the 2015 the world population). Regional medians were used to impute missing data in those cases.

2015 global and regional estimates of the percentage of the population impoverished by out-of-pocket health spending are based on similar proportions of survey-based, regression-based and imputed estimates than for SDG 3.8.2 (see Box 4 table).

In addition to the higher share of economic modelling behind the 2015 figures compared with the share in previous years, the 2015 global and regional baselines established in this report may also be particularly sensitive to the recency of the data for India (2011) and somewhat less, for China (2013). Annex 4 suggests that the influence of these issues on trend analysis are limited and mostly affect the level of global and regional incidence of SDG and SDG-related indicators of financial protection, given the relative weight of India and China in world population.

#### **Regional and country income group classification**

Regional estimates of catastrophic and impoverishing health spending are based on the UN classification of countries by region (Annex 5). Annexes 6–10 also show results according to WHO and the World Bank regional groupings. WHO regional groupings are discussed

in detail in a global report on universal health coverage (UHC) published at the same time as this thematic report on financial protection (1). All estimates were prepared jointly by WHO and the World Bank.

Estimates of catastrophic and impoverishing health spending by country income group are based on the classification of each country in the year of the survey-based country estimate. This means, for instance, that for China, for which estimates are available for five years (1995, 2000, 2002, 2007 and 2013) and which transitioned over 1995–2015 from a low-income to an upper-middle-income country, survey-based estimates contribute to different income groups over time. Country income group estimates are also sensitive to India's shift from low-income to lower-middle-income status between 2006 and 2007. These sensitivities affect the interpretation of trends over time and across income groups.

# Global and regional progress on catastrophic health spending (SDG 3.8.2 indicators) and impoverishment due to out-of-pocket health spending

## Levels and trends in catastrophic health spending: the SDG 3.8.2 indicators

### 2015 BASELINE AND CROSS-COUNTRY VARIATION IN CATASTROPHIC HEALTH SPENDING

In 2015, the year the SDGs were adopted, 926.6 million people incurred out-of-pocket health spending exceeding 10% of their household budget (total consumption or income), and 208.7 million incurred out-of-pocket health spending that even exceeded 25% of the household budget. These people lived mostly in Asia (70%–76%<sup>3</sup>), about 45%<sup>4</sup> in lower-income countries and 41%–43% in upper-middle-income countries. Asia, and Latin America and the Caribbean had the highest percentage of their 2015 population with catastrophic health spending as tracked by SDG indicator 3.8.2, while North America and Oceania had the lowest (Table 1). But all regions have large variations in the percentage of the population spending more than 10% or 25% of their household budget out-of-pocket on health (Figure 4).

In the most recent year available for global monitoring (Figure 4a), dispersion across countries in the percentage of the population with out-of-pocket health spending exceeding 10% of the household budget – is highest in the Asia Region. The interquartile range in the Asia Region is 13.1 percentage points, meaning that there is a 13.1 percentage point difference between the 25% of countries with the lowest percentage of the population crossing the 10% threshold and the 25% of countries

with the highest incidence. In the European Region, the interquartile range is 8.5 percentage points, higher than those in Latin America and the Caribbean – 7.9 percentage points and the Africa Region – 7.7 percentage points. At the 25% threshold, Asia also has the highest interquartile range (3.4 percentage points), followed by Africa (2.4 percentage points) (Figure 4b).<sup>5</sup>

### GLOBAL AND REGIONAL TRENDS IN CATASTROPHIC HEALTH SPENDING

**Globally, financial protection against catastrophic health spending decreased continuously between 2000 and 2015, as tracked by SDG indicator 3.8.2.** The world's population with out-of-pocket health spending exceeding 10% of the household budget increased on average by 3.6% a year over 2000–2015, from about 571 million people to about 927 million. At the 25% threshold, the increase was even faster, with an average of 5.3% a year, from about 100 million people in 2000 to about 200 million people in 2015 (see Table 1).

**The rate of increase between 2010 and 2015 in the number of people with catastrophic health spending was similar to or worse than the rate of increase between 2005 and 2010.** The number of people with out-of-pocket health spending exceeding the 10% threshold increased by 2.4% a year on average between 2010 and 2015, a rate similar to the average population increase between 2005 and 2010. The population with

**TABLE 1** Global and regional trends in catastrophic health spending, as tracked by Sustainable Development Goal indicator 3.8.2

10% threshold		% of population				Number of people (millions)			
UN regions	2000	2005	2010	2015	2000	2005	2010	2015	
World	9.4	11.4	12.0	12.7	570.5	738.1	828.3	926.6	
Africa	6.6	8.4	9.3	9.3	53.9	76.8	96.4	109.8	
Asia	10.7	13.0	13.4	14.9	395.8	508.8	556.2	649.1	
Europe	6.1	6.4	6.7	7.6	44.1	46.9	49.3	56.2	
Latin America and the Caribbean	11.2	15.6	18.6	15.1	58.4	87.1	109.5	94.4	
North America	5.5	5.3	4.6	4.4	17.2	17.4	15.6	15.8	
Oceania	3.1	3.1	3.5	3.7	1.0	1.0	1.3	1.5	

25% threshold		% of population				Number of people (millions)			
UN regions	2000	2005	2010	2015	2000	2005	2010	2015	
World	1.7	2.5	2.6	2.9	105.9	161.6	180.2	208.7	
Africa	1.2	1.5	1.8	1.9	9.3	14.1	19.2	22.9	
Asia	2.1	3.1	3.2	3.6	77.2	122.9	133.5	159.4	
Europe	0.9	1.0	1.0	1.1	6.4	7.0	7.3	8.1	
Latin America and the Caribbean	1.9	2.6	3.0	2.5	9.7	14.5	17.5	15.5	
North America	1.0	0.9	0.8	0.7	3.1	3.0	2.6	2.6	
Oceania	0.42	0.41	0.47	0.49	0.13	0.14	0.17	0.20	

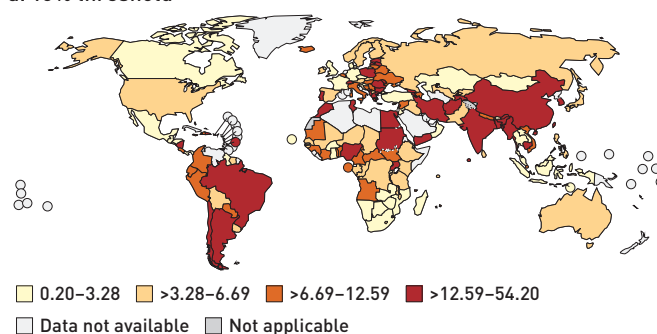
Note: Aggregates produced jointly by WHO and the World Bank using methods described in Box 4.

Source: Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

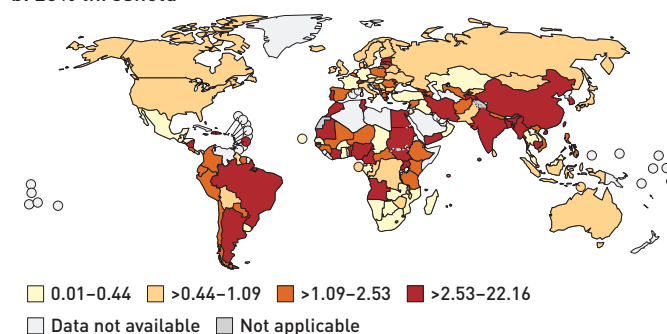
**FIGURE 4** There are large variations within regions in the percentage of people with catastrophic health spending, as tracked by Sustainable Development Goal indicator 3.8.2

Percentage of the population with out-of-pocket health spending exceeding 10% or 25% of the household budget, most recent year available

a. 10% threshold



b. 25% threshold



Note: These maps have been produced by the World Health Organization (WHO). The boundaries, colours or other designations or denominations used in this map and the publication do not imply, on the part of WHO or the World Bank, any opinion or judgement on the legal status of any country, territory, city or area or of its authorities, or any endorsement or acceptance of such boundaries or frontiers.

Source: Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

out-of-pocket health spending exceeding the 25% threshold increased faster between 2010 and 2015 (3.2% a year on average) than between 2005 and 2010 (2.4%).

**North America is the only UN region where the number of people and percentage of the population with catastrophic health spending fell between 2000 and 2015, as tracked**

**by SDG indicator 3.8.2.** All regions except North America saw increases in the number of people and percentage of the population with catastrophic health spending between 2000 and 2015 (see Table 1). The Africa region had the highest average increase in number (5.5% a year at the 10% threshold),<sup>6</sup> while the Asia region had the highest average increase

in percentage (roughly 0.3 percentage point a year at the 10% threshold).<sup>7</sup>

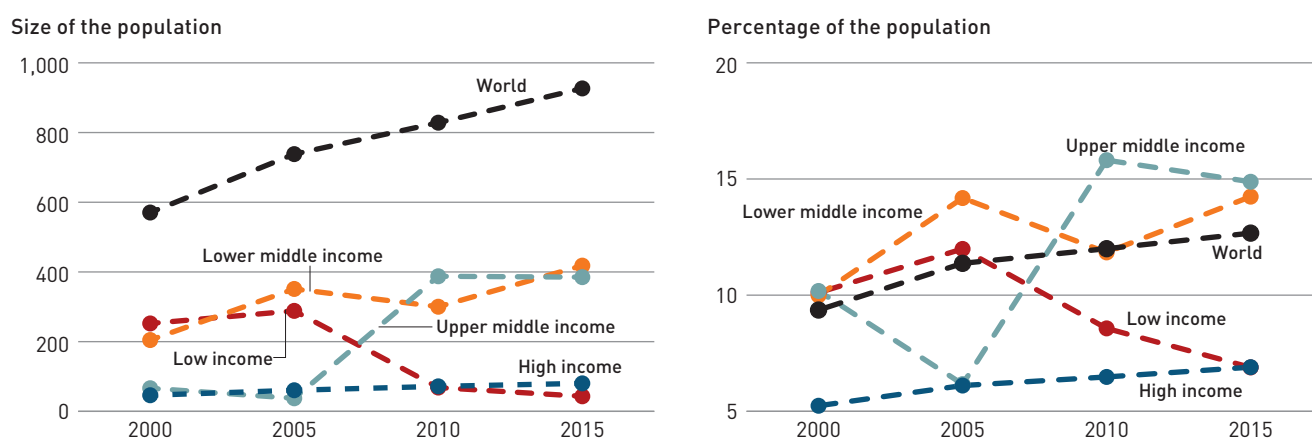
**The Asia, Europe and North America regions had a higher or similar rate of increase in the number of people and percentage of the population with catastrophic health spending over 2010–2015 compared with 2005–2010.** Europe saw the fastest increase in the number of people with out-of-pocket health spending exceeding 10% and 25% of their household budget over 2010–2015 compared with 2005–2010.<sup>8</sup> North America, following a 2% average annual drop over 2005–2010 in the number of people with catastrophic health spending at the 10% threshold experienced an average annual increase of 0.2% over 2010–2015.<sup>9</sup> Asia had the fastest increase in number and percentage at the 25% threshold over 2010–2015 compared with 2005–2010.<sup>10</sup> Latin America and the Caribbean is the only region where the rate of increase

in the number of people and percentage of the population with out-of-pocket health spending exceeding 10% and 25% of the household budget fell over 2010–2015.

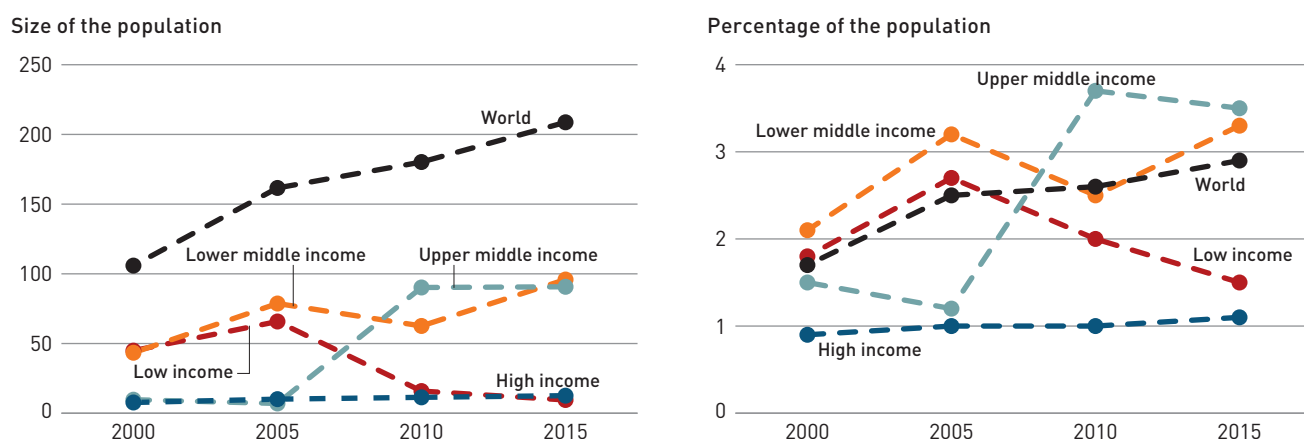
**Between 2000 and 2015, the largest concentration of the world population with out-of-pocket health spending exceeding 10% and 25% of their household budget shifted from low-income countries to middle-income countries. The gap in the incidence of catastrophic health spending as tracked by SDG indicator 3.8.2 between high- and low-income countries narrowed (Figure 5).** Low-income countries had the highest number and percentage of people with out-of-pocket health spending exceeding the 10% and 25% thresholds in 2000,<sup>11</sup> but after an initial increase between 2000 and 2005, they saw a steady decline between 2005 and 2015.<sup>12</sup> High-income countries, on the other hand, had the lowest number of people and percentage

**FIGURE 5** Progress on financial protection, as tracked by Sustainable Development Goal indicator 3.8.2, varies across country income groups, steadily declining only in low-income countries since 2005

a. Population with out-of-pocket health spending exceeding 10% of the household budget



b. Population with out-of-pocket health spending exceeding 25% of the household budget



Note: Aggregates produced jointly by WHO and the World Bank using methods described in Box 4.  
Source: Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).



of the population with catastrophic health spending exceeding both thresholds in 2000 but experienced a steady increase over 2000–2015<sup>13</sup> (see Figure 5). So, by 2015, high-income countries had almost twice as many people with catastrophic health spending exceeding the 10% threshold (80 million) as low-income countries (43 million) but a similar percentage of the population (6.9%).<sup>14</sup> In upper-middle-income countries, the sharpest increase in the number of people and percentage of the population with out-of-pocket health spending exceeding both the 10% and 25% thresholds occurred between 2005 and 2010. In lower-middle-income countries, the sharpest increase at both thresholds was between 2010 and 2015.

**Levels and trends in impoverishment due to out-of-pocket health spending (SDG-related indicators)**

**CROSS-COUNTRY VARIATION IN IMPOVERISHMENT**

In the most recent survey available for global monitoring, the highest mean, median and dispersion across countries in the percentage of the population impoverished by out-of-pocket

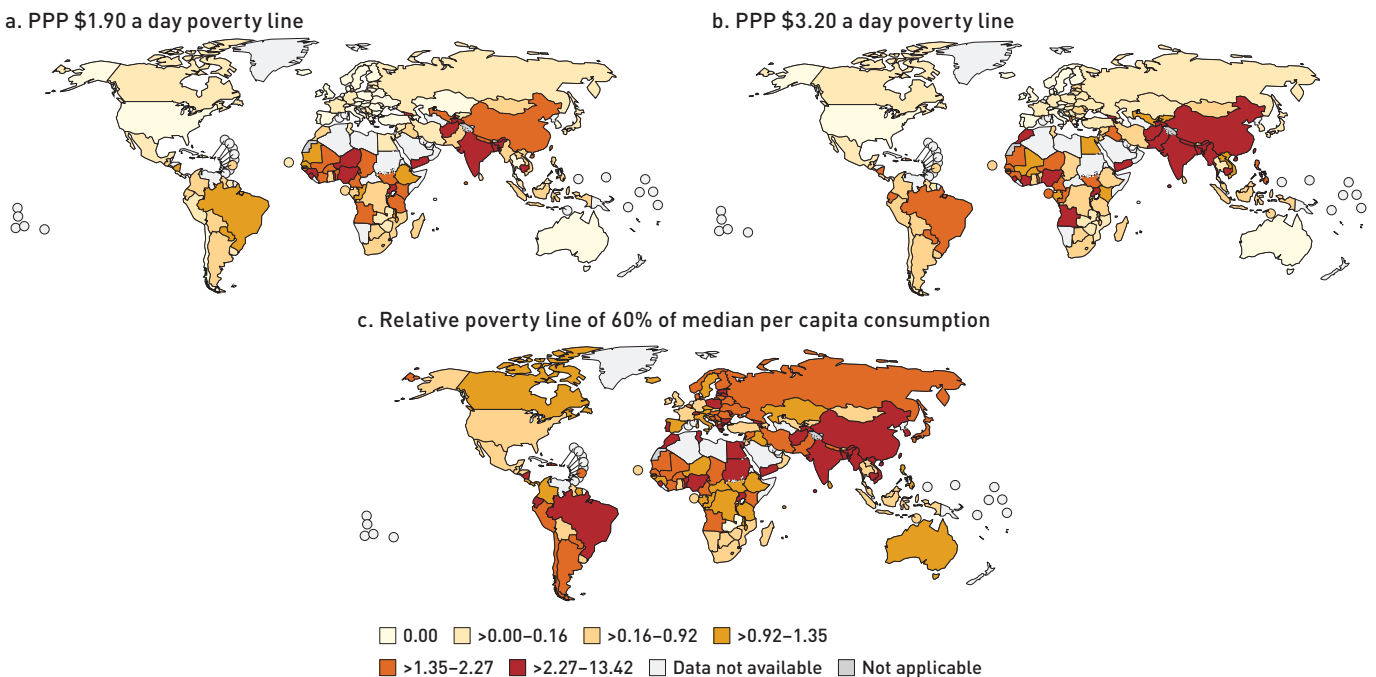
health spending was in the Africa region at the \$1.90 a day poverty line<sup>15</sup> and the Asia region at both poverty lines of \$3.20 a day<sup>16</sup> and 60% of median daily per capita consumption. Europe had the second highest values at the relative poverty line<sup>17</sup> (Figure 6).

There is important variation in the increase in the poverty gap attributable to out-of-pocket health spending in the most recent year for which estimates are available for global monitoring (Figure 7). In all regions and at all poverty lines, there are countries where out-of-pocket health spending contributes only marginally (by less than 0.01 percentage point) to the increase in the poverty gap. The countries in the 90th percentile, by contrast, saw marked changes.

At the \$1.90 a day poverty line, the 10% of countries with the highest increase in the poverty gap due to out-of-pocket health spending experienced at least a 1.4 percentage point increase in the Africa Region and a 1.5 percentage point increase in the Asia Region (or about \$0.03 per capita per day). At the \$3.20 a day poverty line, the increase in the poverty gap due to out-of-pocket health spending in the top 10% of countries in these two regions

**FIGURE 6** Across countries, there are large variations in the percentage of the population impoverished by out-of-pocket health spending at all poverty lines

Percentage of population with impoverishing health spending at various international poverty lines, most recent year available

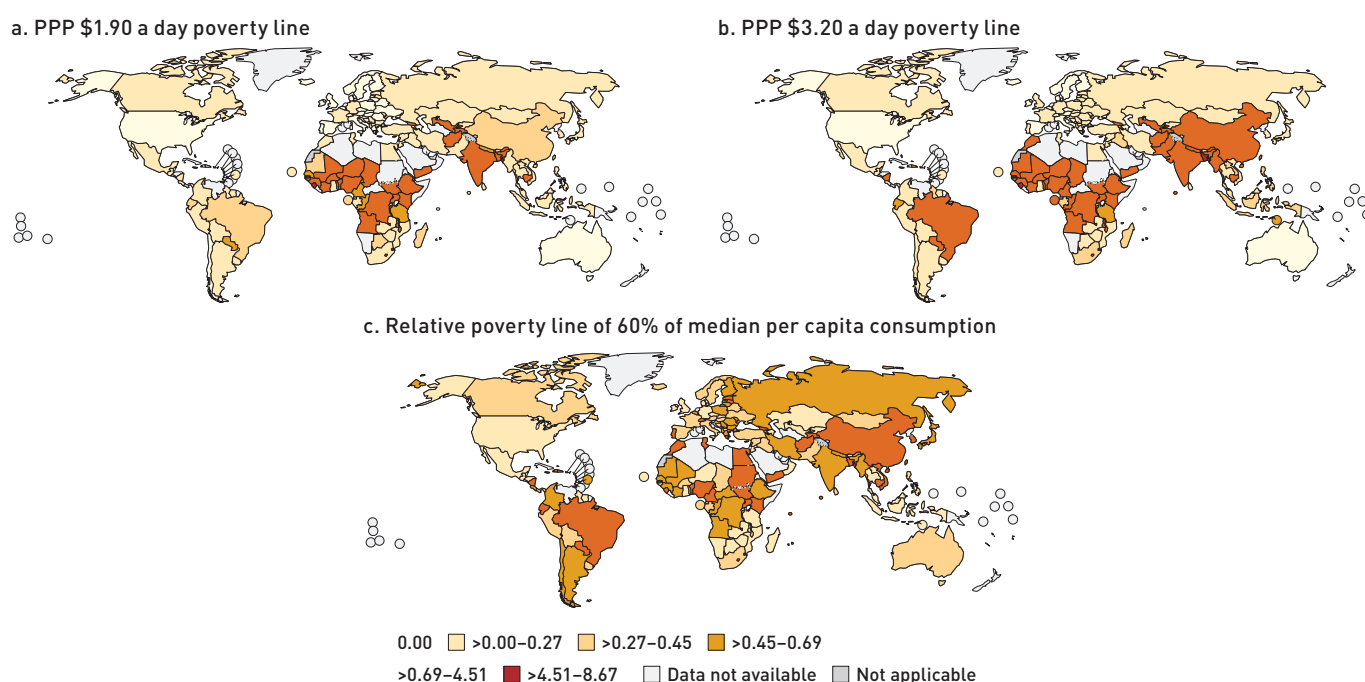


**Note:** Cut-off values are kept constant across poverty lines. These maps have been produced by the World Health Organization (WHO). The boundaries, colours or other designations or denominations used in this map and the publication do not imply, on the part of WHO or the World Bank, any opinion or judgement on the legal status of any country, territory, city or area or of its authorities, or any endorsement or acceptance of such boundaries or frontiers.

**Source:** Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

**FIGURE 7** Across countries, there are also marked variations in the poverty gap increase attributable to out-of-pocket health spending at all poverty lines

Poverty gap due to out-of-pocket health spending at various international poverty lines, most recent year available



**Note:** Cut-off values are kept constant across poverty lines. These maps have been produced by the World Health Organization (WHO). The boundaries, colours or other designations or denominations used in this map and the publication do not imply, on the part of WHO or the World Bank, any opinion or judgement on the legal status of any country, territory, city or area or of its authorities, or any endorsement or acceptance of such boundaries or frontiers.

**Source:** Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

was even sharper (at least 1.6 percentage point or \$0.05 per capita per day in the Africa Region and 2.5 percentage points or \$0.08 per capita per day in the Asia Region). At the relative poverty line of 60% of median daily per capita consumption or income, the poverty gap among the top 10% of countries increased by 2 percentage points in Asia and 1.2 percentage point in Latin America and the Caribbean, followed by Africa (1 percentage point) and Europe (0.8 percentage point).

By country income group, the increase in the poverty gap due to out-of-pocket health spending was highest in low-income countries at all poverty lines: 1.1 percentage point at the \$1.90 a day poverty line, 1.4 percentage point at the \$3.20 a day poverty line and 0.7 percentage point at the relative poverty line.

In most cases, the countries with the highest percentage of the population impoverished by out-of-pocket health spending also have the highest increase in the poverty gap due to out-of-pocket health spending (see Figures 6 and 7). This means that out-of-pocket health spending was adding considerably to the number of poor people and the depth of poverty in those countries.

## 2015 GLOBAL AND REGIONAL LEVELS OF IMPOVERISHMENT

**Globally in 2015, out-of-pocket health spending increased the number of people and percentage of the population in poverty, though the level of increase varies depending on the poverty line:** 89.7 million people (1.2% of the world population) were impoverished by out-of-pocket health spending at the \$1.90 a day poverty line, 98.8 million people (1.4%) at the \$3.20 a day poverty line and 183.2 million people (2.5%) at the relative poverty line of 60% of median daily per capita consumption or income in their country (Table 2).

**Impoverishment due to out-of-pocket health spending affected all regions, but the global 2015 values were driven by the Asia region.** Asia had the highest number of people and percentage of the population impoverished by out-of-pocket health spending, ranging from 73 million people (1.7% of the world population) at the \$1.90 a day poverty line to 135 million people (3.1%) at the relative poverty line of 60% of median daily per capita consumption (see Table 2). Jointly with the Africa Region, they accounted for 98% of the global population impoverished by out-of-pocket health spending

**TABLE 2** Global and regional trends in impoverishment due to out-of-pocket health spending at the \$1.90 a day and \$3.20 a day absolute poverty lines and at the relative poverty line of 60% of median per capita daily consumption

\$1.90 a day poverty line		% of population				Number of people (millions)			
UN regions	2000	2005	2010	2015	2000	2005	2010	2015	
World	2.0	1.8	1.5	1.2	123.9	116.8	103.4	89.7	
Africa	2.8	1.2	1.4	1.3	22.5	11.2	14.8	15.4	
Asia	2.6	2.6	2.1	1.7	97.3	101.4	85.4	72.7	
Europe	0.1	0.1	0.0	0.0	0.7	0.4	0.2	0.2	
Latin America and the Caribbean	0.6	0.7	0.5	0.2	3.3	3.9	3.1	1.5	
North America	0.01	0.00	0.00	0.00	0.02	0.01	0.01	0.01	
Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
\$3.20 a day poverty line		% of population				Number of people (millions)			
UN regions	2000	2005	2010	2015	2000	2005	2010	2015	
World	1.5	1.8	1.7	1.4	93.0	118.9	119.5	98.8	
Africa	1.7	1.3	1.5	1.3	14.1	12.0	15.5	15.0	
Asia	1.9	2.5	2.3	1.8	70.0	98.0	96.1	79.1	
Europe	0.3	0.1	0.1	0.1	2.4	1.1	0.6	0.5	
Latin America and the Caribbean	1.2	1.4	1.2	0.7	6.5	7.8	7.3	4.2	
North America	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Relative poverty line (60% median per capita daily consumption)		% of population				Number of people (millions)			
UN regions	2000	2005	2010	2015	2000	2005	2010	2015	
World	1.8	1.9	2.2	2.5	110.9	126.3	151.2	183.2	
Africa	1.2	1.5	1.7	1.8	9.4	13.4	17.3	21.3	
Asia	2.2	2.3	2.6	3.1	79.7	88.8	107.6	134.6	
Europe	1.3	1.4	1.5	1.6	9.5	10.0	11.3	12.3	
Latin America and the Caribbean	1.5	1.8	2.0	1.8	7.9	10.2	11.8	11.5	
North America	1.3	1.1	0.8	0.9	4.0	3.5	2.8	3.1	
Oceania	1.15	1.18	1.26	1.29	0.36	0.40	0.46	0.51	

Note: Aggregates produced jointly by WHO and the World Bank using methods described in Box 4.

Source: Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

at the \$1.90 a day poverty line, 95% at the \$3.20 a day poverty line and 85% at the relative poverty line of 60% of median daily per capita consumption or income. In Europe, North America and Oceania, impoverishing health spending was almost or equal to zero at the absolute poverty lines of \$1.90 and \$3.20 a day, but at the relative poverty line of 60% of median daily per capita consumption or income, it affected between 0.9% of the population in North America and 1.6% in Europe (see Table 2).

Among country income groups, the 2015 global population impoverished by out-of-pocket health spending was driven by lower-middle-income countries at both the \$1.90 a day poverty line (63 million people) and the \$3.20 a day line (82 million). Jointly with upper-middle-income

countries, they drove the global population who were impoverished at the relative poverty line (158 million people).<sup>18</sup> Low- and high-income countries had a similar percentage of the population impoverished by out-of-pocket health spending at the relative poverty line, but high-income countries had almost twice as many people impoverished by out-of-pocket health spending as low-income countries (17 million versus 9 million; Annexes 8–10).

#### GLOBAL AND REGIONAL TRENDS IN IMPOVERISHMENT

**Globally, between 2000 and 2015, out-of-pocket health spending continuously increased poverty, at varying paces**

**depending on the poverty line.** At the \$1.90 a day poverty line, the percentage of the world population impoverished by out-of-pocket health spending decreased on average by –0.05 percentage point a year, from 2% to 1.2%, in line with progress towards the eradication of extreme poverty. This means that while in 2000 almost 124 million people incurred impoverishing health spending, in 2015 about 90 million faced such spending (see Table 2). At the \$3.20 a day poverty line, the percentage of the world population impoverished by out-of-pocket health spending increased from 1.5% in 2000 to 1.8% in 2005 but decreased subsequently until 2015 to reach 1.4%, with the fastest reduction after 2010. The slower reduction in impoverishment at the \$3.20 a day poverty line is consistent with the estimated slower decrease in the global population living on less than \$3.20 per person per day over the same period.

**The pace of reduction in impoverishment due to out-of-pocket health spending at the \$1.90 and \$3.20 a day poverty lines is driven by the Asia region.** Progress in reducing impoverishment at these poverty lines has been uneven, with Asia and Africa following divergent paths (see Table 2). Between 2000 and 2005, the number of people impoverished by out-of-pocket health spending at the \$1.90 a day poverty line fell markedly in Africa from 22.5 million people to 11.2 million (a 10% decline per year) and increased marginally in Asia, but after 2005 the number decreased only in Asia, at about 3% a year. At the \$3.20 a day poverty line, the percentage of the population decreased in Africa on average by 0.08 percentage point per year between 2000 and 2005, while it increased on average by 0.12 percentage point per year in Asia. But after 2005, the percentage of the population pushed below the \$3.20 a day poverty line decreased only in Asia, and at a faster rate between 2010 and 2015 than between 2005 and 2010.

**Based on a relative poverty line of 60% of median daily per capita consumption or income, the percentage of the world population impoverished by out-of-pocket health spending increased continuously between 2000 and 2015 – from 1.8% to 2.5%, or from about 111 million people to 183 million people, with the fastest increase, 0.06 percentage point a year, between 2010 and 2015.** In this case, all regions except North America share the same pattern over 2000–2015. In North America, the number of people and the percentage of the population pushed below the relative poverty line only started to increase

in 2010 after steadily falling between 2000 and 2010 (see Table 2). The Africa region experienced the sharpest average increase in the number of people (6.3% a year) and percentage of the population (0.04 percentage point) pushed below the relative poverty line by health spending, followed by the Asia region<sup>19</sup> and Latin America and the Caribbean.<sup>20</sup>

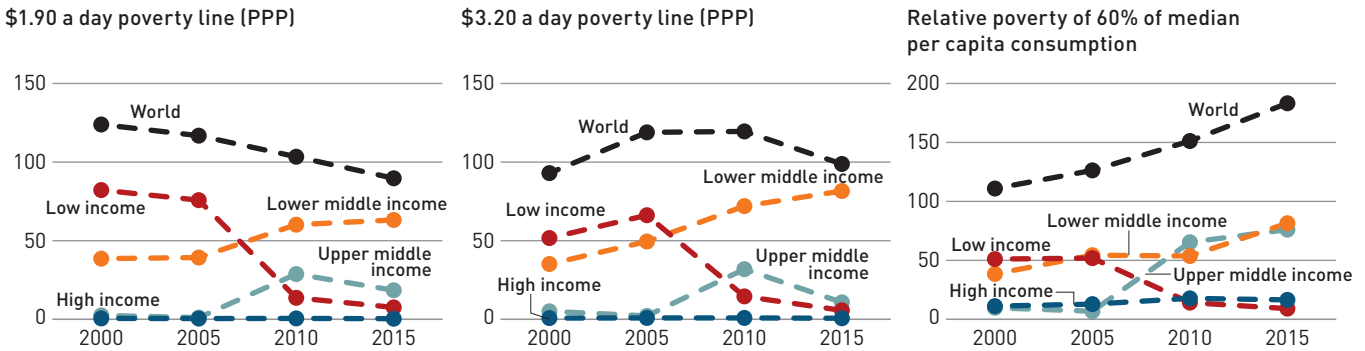
**Between 2000 and 2015, the largest concentration of the world population impoverished by out-of-pocket health spending shifted from low-income to lower-middle-income countries at both the \$1.90 and \$3.20 a day poverty lines, and to upper-middle-income countries at the relative poverty line of 60% of median per capita consumption<sup>21</sup> (Figure 8).** In 2000, between 46% and 66% of the world population impoverished by out-of-pocket health spending lived in low-income countries, depending on the poverty line. Between 2000 and 2015, the number of people and percentage of the population impoverished by out-of-pocket health spending decreased sharply in low-income countries at all poverty lines, with the average rate of decline of the number ranging from 7.1% a year at the relative poverty line to 9% at the \$1.90 a day poverty line. By 2015, the share of the global population impoverished by out-of-pocket health spending living in low-income countries had fallen to 8.5% at the \$1.90 a day poverty line and between 5% and 6% at both the relative poverty line of 60% of median daily per capita consumption or income and the \$3.20 a day poverty line (Annexes 8–10).

In high-income countries, the number of people impoverished by out-of-pocket spending at the relative poverty line of 60% of median daily per capita consumption increased by an average of 3% a year, with the fastest increase occurring over 2005–2010, at 7.5% a year, which was followed by a slowdown over 2010–2015, to 1.4% a year (see Figure 8).

For the 56 low- or lower-middle-income countries for which surveys are available for two or more years, the population-weighted median annual changes in the poverty gap due to out-of-pocket health spending decreased by 0.03 percentage point at both the \$1.90 and \$3.20 a day poverty lines, or about –0.05 cents and –0.1 cents per capita per year in 2011 PPP. For the 90 countries for which surveys are available for two or more years, the population-weighted median annual change in the poverty gap due to out-of-pocket health spending decreased by 0.005 percentage point at the 60% relative poverty line. Thus, for all

**FIGURE 8** The number and percentage of people impoverished by out-of-pocket health spending decreased sharply only in low-income countries since 2005

Number of people in low-income countries incurring impoverishment due to out-of-pocket health spending at various international poverty lines



Note: Aggregates produced jointly by WHO and the World Bank using methods described in Box 4.  
Source: Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

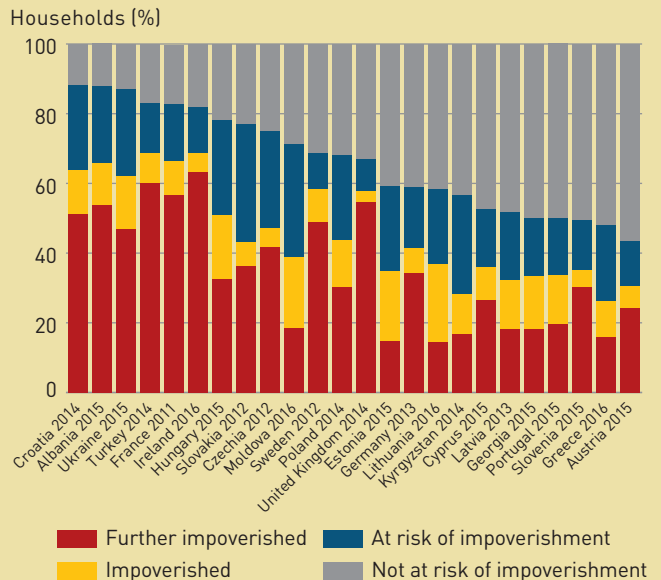
**BOX 5**

**Breakdown of households with catastrophic health spending by risk of impoverishment in the WHO European Region**

In the WHO European Region, households experiencing catastrophic health spending can be broken down by risk of impoverishment (Box figure). A household is *impoverished* if its total consumption is below the poverty line after out-of-pocket payments (it is no longer able to meet basic needs); *further impoverished* if its total consumption is below the poverty line (it is already unable to meet basic needs) and it incurs out-of-pocket health payments; and *at risk of impoverishment* if out-of-pocket payments push it below 120% of the poverty line.

Regional analysis shows that the proportion of households incurring catastrophic health spending who are also further impoverished or impoverished ranges from 26% to 69% (Box figure). In half of the countries in the WHO European Region study, the largest single group of households with catastrophic health spending consists of those who are *not at risk of impoverishment* because they do not come within 120% of the poverty line.

**BOX FIGURE** Breakdown of households with out-of-pocket health spending exceeding 40% of their capacity to pay by risk of impoverishment, latest year available, WHO European Region



Note: Countries ranked by the incidence of catastrophic health spending from lowest to highest.  
Source: WHO Regional Office for Europe, Can people afford to pay for health care? (21).



country income groups the increase in the depth of poverty due to out-of-pocket health spending has been falling at all poverty lines, though only marginally at the relative poverty line.

**In the global monitoring framework adopted in this report to measure financial hardship, out-of-pocket health expenditures can be catastrophic, impoverishing, both or none.** The 90 million people impoverished by out-of-pocket health expenditures at the \$1.90 a day poverty line and the 183 million impoverished at the relative poverty line may or may not be incurring catastrophic health expenditures as defined by SDG indicator 3.8.2. This is why it is important to monitor both types of global indicators – for impoverishing and catastrophic spending. But the rank correlation between impoverishing and catastrophic health spending is highest for the relative poverty line.<sup>22</sup> In the WHO European Region, the definition of catastrophic health spending includes households that become impoverished (21) (see Boxes 1 and 5).

**In summary, between 2000 and 2015, there were mixed improvements at global**

**and regional levels and across income groups in protecting people from incurring financial hardship when spending out of pocket on health: the number of people and percentage of the population impoverished by out-of-pocket health spending at the \$1.90 and \$3.20 per person per day poverty lines decreased – at different paces, with progress uneven across regions. Over the same period, a growing number of people and a growing percentage of the population incurred catastrophic health spending as tracked by SDG indicator 3.8.2 and became impoverished as measured by a relative poverty line, due to out-of-pocket health spending. The only way to improve financial protection is to reduce households' out-of-pocket health spending.** At the current pace of increase in the national share of out-of-pocket health spending in household final consumption, catastrophic health spending as measured by SDG indicator 3.8.2 will continue to increase until 2030, and achieving the universal health coverage target of improving service coverage without financial hardship will not be possible (Box 6).

**BOX 6**

**The incidence of catastrophic health spending as tracked by Sustainable Development Goal indicator 3.8.2 will continue to increase at the current pace of growth in out-of-pocket health spending as a share of household final consumption.**

Based on the WHO and World Bank global databases on financial protection (26,27), the following simple approach is followed to project until 2030 the population facing catastrophic payments.

**Projection principles**

The dataset covers 156 countries with population survey data on catastrophic payments. Together, these countries represent about 95% of the world population in 2015. The procedure then estimates a panel fixed effect model of the incidence of catastrophic payments on the share of aggregate out-of-pocket payments (OOP) over aggregate consumption (household final consumption). The results of this regression model are available upon request.

Next, the International Monetary Fund World Economic Outlook projections for GDP per capita are used. The IMF projections are constructed until 2024, and this analysis extends the series to 2030 by assuming a constant growth rate of GDP per capita beyond 2024 (implicitly assuming that countries close their output

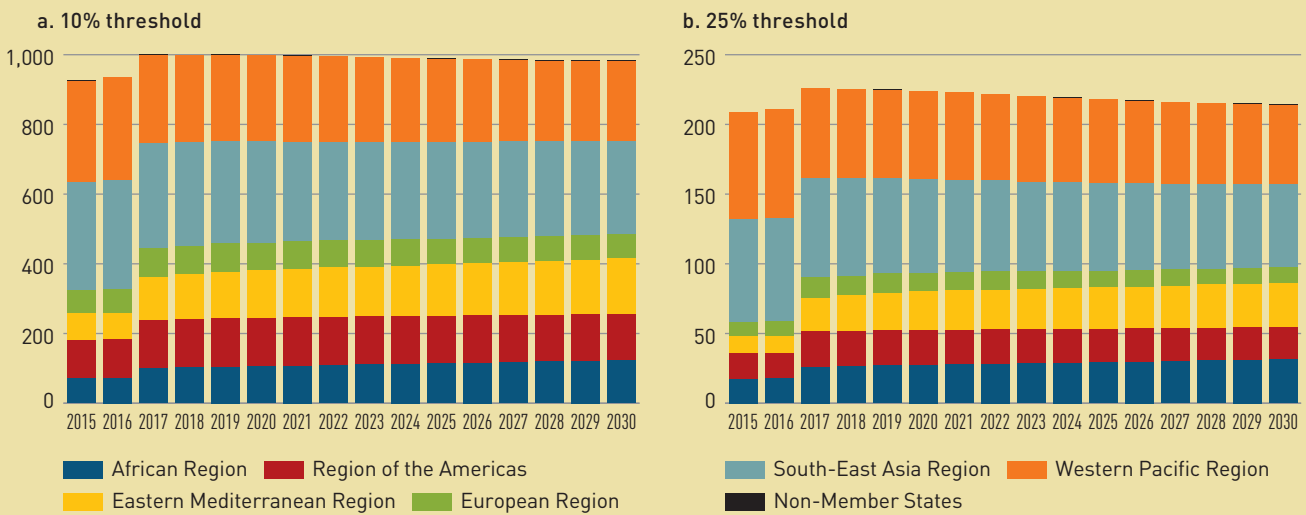
gap at the end of 2024). This GDP series is then used to project (1) OOP to 2030 by assuming a constant rate of OOP over GDP, and (2) aggregate consumption. These two projected series are then used to construct the ratio of OOP over aggregate consumption until 2030.

Finally, the parameters estimated in the regression model, and the projected ratio of OOP over consumption are used to project the incidence of catastrophic payments to 2030. To estimate the population facing catastrophic payments in 2030, these projected rates are multiplied by United Nations population projections (using the medium fertility scenario).

**Results**

The projected population facing catastrophic payments at the 10% of household total consumption or income reaches 1 billion people by 2020, only slightly decreasing to 984 million by 2030 (Box figure). About half of the population facing catastrophic payments will continue to reside in Asia. The Africa region will experience the most rapid increase.

**BOX FIGURE** Projection of population facing catastrophic payments, by WHO Region



## A deeper look

### Rural–urban inequalities in catastrophic and impoverishing health spending

Rural populations tend to be poorer and less healthy than urban populations, and health systems in rural areas tend to be weaker than those in cities. Geographic distance and less developed transport services in rural areas pose additional challenges in access to health services. Although people living in rural areas do not necessarily experience a higher incidence of catastrophic health spending, they tend to experience a higher incidence of impoverishing health spending, as measured on SDG and SDG-related indicators. Across countries, for the most recent year for which estimates are available for global monitoring, the median share of the population spending more than 10% of the household budget on health is marginally higher for those living in urban areas, while the median share of the population spending more than 25% of the household budget on health is marginally higher for those living in rural areas (Table 3). The population-weighted median using the share of the rural population in each country confirms this gap. On average, the incidence of impoverishing health spending (weighted and unweighted) is higher for those living in rural areas at both the absolute poverty lines of \$1.90 and \$3.20 per person per day consumption or income.

Across country income groups, rural–urban inequalities in the percentage of the population with out-of-pocket health spending

exceeding 10% of household consumption or income are greatest in low- and high-income countries, with the rural population facing a higher incidence in high-income countries but the urban population facing a higher incidence in low-income countries. Rural–urban inequalities in the percentage of the population with out-of-pocket health spending exceeding 25% of household consumption or income are greatest in low- and lower-middle-income countries, with those living in rural areas systematically more likely than urban

**TABLE 3** People in rural areas do not necessarily experience a higher incidence of catastrophic health spending, but they tend to experience a higher incidence of impoverishing health spending

Catastrophic health spending (SDG 3.8.2, median incidence)				
	10% of household budget		25% of household budget	
	Rural	Urban	Rural	Urban
Unweighted	7.2	7.6	1.2	1.0
Population weighted	6.6	7.7	1.3	1.0
Impoverishment due to out-of-pocket health spending (average incidence)				
	International poverty line (in PPP)			
	\$1.90 poverty line		\$3.20 poverty line	
	Rural	Urban	Rural	Urban
Unweighted	1.0	0.6	1.1	1.0
Population weighted	1.3	0.9	1.4	1.3

Note: Weighted by the share of the rural population in each country.

Source: Global database on financial protection assembled by WHO and the World Bank, 2019 update [26,27].

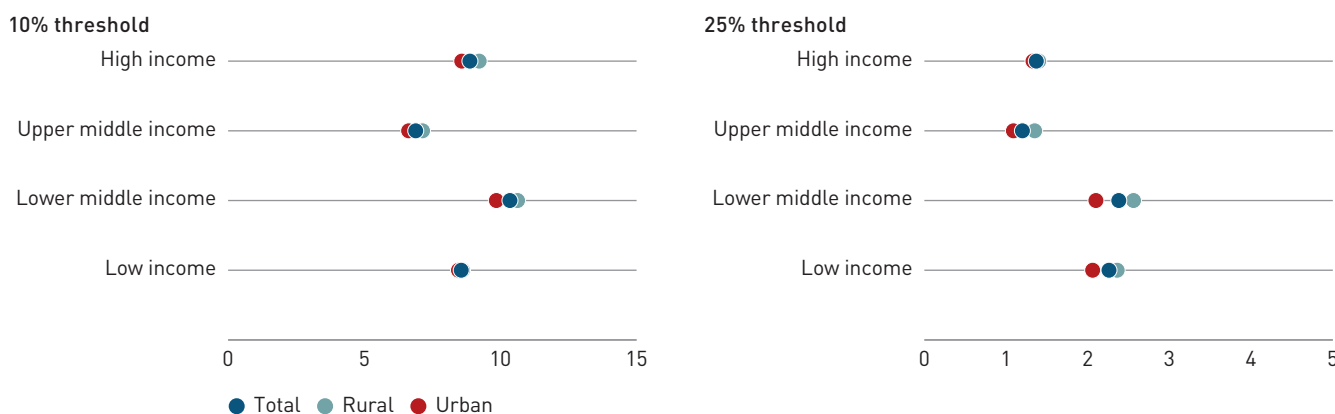
populations to experience catastrophic health spending (Figure 9).

At the \$1.90 a day and \$3.20 a day absolute poverty lines, rural–urban inequalities in impoverishing health spending are greatest in lower-middle-income countries, with an additional 0.2 percentage point increase in the median proportion of the population impoverished by out-of-pocket health spending in rural areas compared with urban areas at the \$1.90 a day poverty line and an additional 0.4 percentage point at the \$3.20 line. In low-income countries at the \$1.90 a day poverty line, those living in rural areas are more likely to experience impoverishing

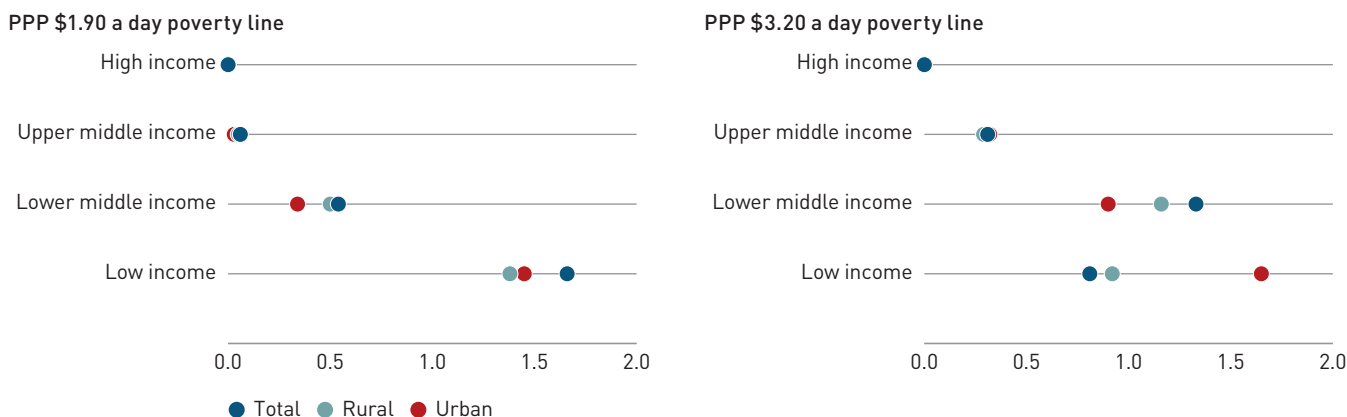
health spending than the urban population (median incidence is 0.2 percentage point higher than the urban median incidence of 1.45%), but at the \$3.20 a day poverty line, the urban percentage of the population impoverished by out-of-pocket health spending is twice the median rural rate of 0.8%. This difference in the direction of the rural–urban inequality in low-income countries is consistent with the fact that the \$3.20 a day poverty line is a high standard for those countries and is more likely to capture the impact of out-of-pocket health spending among the richer population, who are more likely to live in urban areas.

**FIGURE 9 Rural–urban inequalities in the percentage of the population with catastrophic and impoverishing health spending, as tracked by Sustainable Development Goal and Sustainable Development Goal–related indicators, by country income group**

a. Rural–urban inequalities in the percentage of the population with out-of-pocket health spending exceeding 10% of household consumption or income are greatest in low- and high-income countries, while inequalities in the percentage of the population with out-of-pocket health spending exceeding 25% of household consumption or income are greatest in low- and lower-middle-income countries



b. At the \$1.90 a day and \$3.20 a day absolute poverty lines, rural–urban inequalities in impoverishing health spending are greatest in lower-middle-income countries. Median percentage of the population impoverishing health spending at the \$1.90 and \$3.20 a day absolute poverty lines, most recent year available (median is 2014)



**Note:** Median incidence rates across countries by country income group use the urban share of the population as weights to obtain population-weighted values in each country.

**Source:** Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

## Gender inequalities in catastrophic health spending: case study from the WHO region of the Americas

Financial protection is typically measured at the household level, a method that presumes that a household pools its economic resources to cover the health needs of all its members. But households differ in the age and gender profile of their members. That, in turn, influences the need for health services, as well as inequality in health service use due to gender- and age-based discrimination in the household or on the part of the health system. Given gender differences in health needs across the life span, an analysis of gender inequalities in financial protection in health should consider the gender mix and age structure of the household.

In addition, if the objective is to understand spending patterns and health seeking behaviour at the individual level, as well as how economic autonomy influences resource allocation decisions for out-of-pocket health spending, the household measure of out-of-pocket health spending should ideally be the sum of all individuals' spending, and the measure of household consumption or income used to capture the household living standard should be to the sum of all individuals' resources. These measures are difficult to assemble together. Health-focused surveys generally have a wealth of information at the individual level on health-seeking behaviour and related spending patterns but insufficient information on household consumption or income. Surveys with good information on household consumption or income often have limited information on spending at the individual level, including for health.

### A gender approach to out-of-pocket spending and financial protection in the World Health Organization Region of the Americas

To examine gender inequalities in out-of-pocket health spending and financial protection in the Region of the Americas, the Pan American Health Organization studied whether women individually or female-headed households were at greater risk of experiencing financial hardship [22]. The study used household surveys from Bolivia (2014), Guatemala (2014), Nicaragua (2014) and Peru (2015), which provided information on household consumption, the gender of the household head and individual-level health spending.

Among people aged 15 and older, average individual out-of-pocket health spending (in

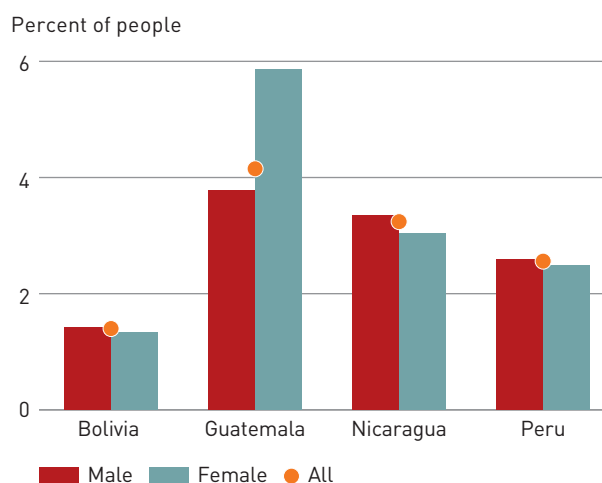
monetary terms) was higher among women than among men in all the countries. The difference ranged from 1.3 times in Bolivia and Peru to 2.2 times in Guatemala. Moreover, the difference increased during child-bearing ages, except in Bolivia, reaching 3.8 in Guatemala for ages 15–44. This shows an expected “maternity penalty” in those countries. In Guatemala and Nicaragua, differences in out-of-pocket health spending between women and men were even greater among those with social health insurance coverage, particularly suggesting failure to protect women by this type of insurance mechanism.

At the household level, all four countries showed higher out-of-pocket health spending in absolute terms among female-headed households. The greatest difference was in Bolivia, where total out-of-pocket health spending was almost twice that in male-headed households.

But results were mixed in studying the incidence of catastrophic spending at the 10% of household consumption threshold without controlling for other characteristic: the difference was only significant in Guatemala, with an incidence of 5.9% among female-headed households compared with 3.8% among male-headed households (Figure 10).

These preliminary results show that despite efforts directed at protecting women and children from health-related financial

**FIGURE 10** In selected countries in the WHO Region of the Americas, female-headed households are not necessarily more likely than male-headed households to incur catastrophic health spending as tracked by Sustainable Development Goal indicator 3.8.2, when other characteristics were not controlled for



Source: Pan American Health Organization/World Health Organization database on financial protection [22].

hardship,<sup>23</sup> out-of-pocket health spending remained higher among women individually and among female-headed households. This finding suggests a need for innovative approaches to target women with policies that eliminate direct payments. The mixed results in financial protection using SDG indicator 3.8.2 between female- and male-headed households call for further analysis to consider the age-gender profile of households to better understand how household composition influences incurring catastrophic and impoverishing health spending (1).

### Drivers of financial hardship in the WHO European Region and South-East Asia Region and selected countries mostly in Africa

More analysis is needed to understand the types of health care that drive financial hardship at the global level. Evidence from the WHO South-East Asia Region and the European Region suggests that medicine accounts

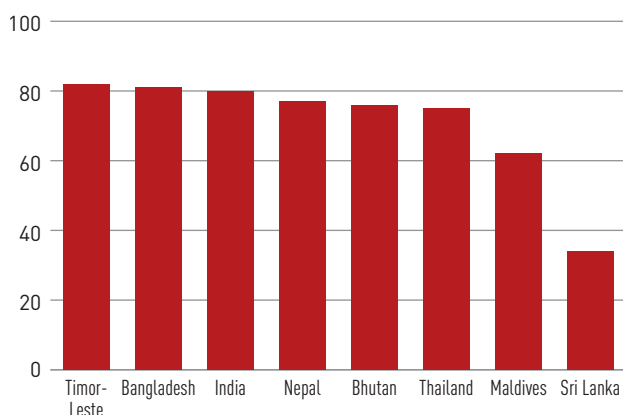
for the largest share of out-of-pocket health spending among people incurring any out-of-pocket health spending, both overall, among the poorest people (South East Asia Region) and among households with catastrophic health spending and the poorest people in particular (European Region). Evidence mostly from the African continent on the other hand point to the accumulation of out-of-pocket spending for different type of services and product as being the source of financial hardship.

### MEDICINES ARE THE MAIN DRIVER OF OUT-OF-POCKET SPENDING ON HEALTH IN THE WHO SOUTH-EAST ASIA REGION

The WHO South-East Asia Region consists of 11 Member States and almost 2 billion people living in low- and lower-middle-income countries. Except in Maldives and Thailand, government spending on health ranges from 0.4% of GDP to 2.5%, less than the share deemed necessary to achieve universal health coverage (28,29). The financial burden on households is heavy. On average, 47% of health spending in the region in 2016 was out of pocket. People in Bangladesh and Myanmar pay for more than 70% of health care costs out

**FIGURE 11** In six of eight countries in the World Health Organization South-East Asia Region, spending on medicines accounted for more than 75% of total out-of-pocket health spending among households incurring any out-of-pocket health spending

Average out-of-pocket spending on medicines as a share of household total out-of-pocket health spending, among households spending on health out of pocket, WHO South-East Asia region, latest year available

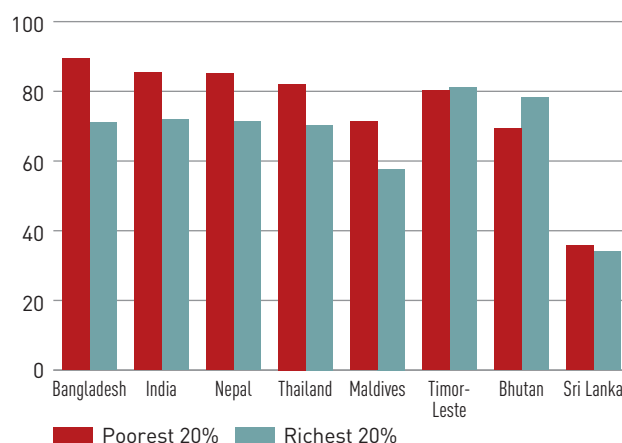


**Notes:** For a definition of out-of-pocket health spending on medicines, see table 2 in Catastrophic health expenditure and financial protection in eight countries in the WHO South-East Asia Region (24). The average share of out-of-pocket spending on medicine is the ratio of household total out-of-pocket spending on medicines to household total out-of-pocket spending on health, averaged across households that incurred any out-of-pocket health spending. Data are for 2009 for the Maldives, 2010 for Bangladesh, 2011 for India, 2012 for Bhutan and Sri Lanka, 2014 for Nepal and Timor-Leste and 2015 for Thailand.

**Source:** Catastrophic health expenditure and financial protection in eight countries in the WHO South-East Asia Region (24).

**FIGURE 12** Poorer households in the WHO South-East Asia region usually spent disproportionately more on medicines than richer households

Average out-of-pocket spending on medicines as a share of household total out-of-pocket health spending, for the bottom and top consumption quintiles, latest year available



**Note:** Consumption quintiles are based on daily per capita consumption. The bottom quintile is labelled "poorest" and the top quintile "richest". Some households may appear to be richer than they are because they have borrowed money to finance spending on health (or other items), but it can be safely assumed that households in the poorest quintile are genuinely poor. Data are for 2009 for Maldives, 2010 for Bangladesh, 2011 for India, 2012 for Bhutan and Sri Lanka, 2014 for Nepal and Timor-Leste and 2015 for Thailand.

**Source:** Catastrophic health expenditure and financial protection in eight countries in the WHO South-East Asia Region (24).



of pocket (30). About 60% of the global population pushed under the \$1.90 a day poverty line in 2015 by out-of-pocket health spending, who already faced constrained resources, were from the South-East Asia Region.

The most recent data analysed shows that medicines were the dominant contributor to out-of-pocket health spending in eight of the region's countries (Figure 11) (24). In six of those countries, spending on medicines accounted for more than 75% of total out-of-pocket health spending among households incurring any out-of-pocket health spending. Sri Lanka was the only country where the share of spending on medicines among those incurring any out-of-pocket health spending averaged less than 50%.

Moreover, poorer households usually spent disproportionately more on medicines than richer households (Figure 12). In five countries, the average difference in the share of out-of-pocket health spending on medicines between the richest and the poorest consumption quintiles exceeded 10 percentage points, and in Bangladesh the difference was close to 20 percentage points.

#### **OUTPATIENT MEDICINES ARE THE MAIN DRIVER OF FINANCIAL HARDSHIP IN THE WHO EUROPEAN REGION**

Households with catastrophic health spending (defined in the WHO European Region as out-of-pocket health spending exceeding 40% of household capacity to pay for health care) are spending mostly on outpatient medicines, followed by inpatient care and dental care (Figure 13). The outpatient medicine share of out-of-pocket health spending tends to be higher in countries where the overall incidence of catastrophic health spending is higher. It is consistently higher than average for households in the poorest quintile, even in countries where the overall incidence of catastrophic health spending is relatively low. Dental care is a greater source of financial hardship than outpatient medicines in countries where the overall incidence of catastrophic health spending is relatively low. It does not seem to be a major source of financial hardship for the poorest households in most countries because poor households tend to forgo dental care (see Box 8 in the next section).

#### **THE VAST MAJORITY OF OUT-OF-POCKET HEALTH SPENDING IS FOR MEDICINES AND OUTPATIENT CARE RATHER THAN HUGE HOSPITAL BILLS IN SELECTED COUNTRIES MOSTLY IN AFRICA**

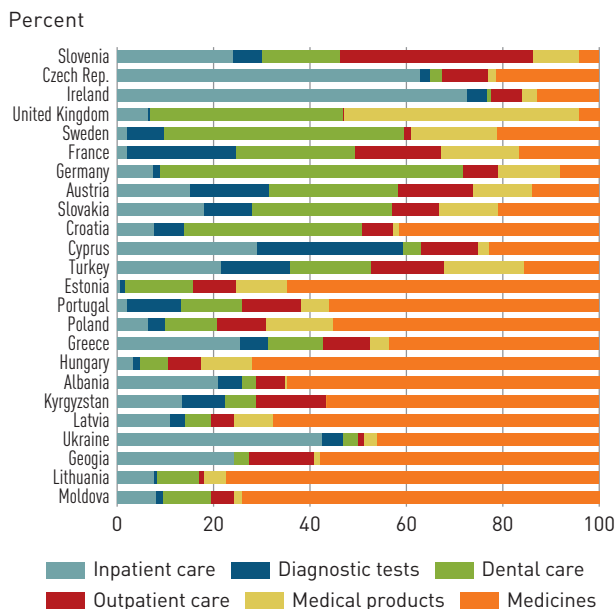
A recent analysis focusing on health service coverage<sup>24</sup> and financial protection across 25 countries mostly in Africa (Global Financing Facility countries<sup>25</sup>) looked at the nature, distribution and determinants of OOP for health to identify who suffers financial hardship, what drives it and how it has evolved (31). Many of these countries still rely heavily on out-of-pocket health spending to fund health services, leading to problems of foregone care and catastrophic and impoverishing health spending as defined by SDG indicator 3.8.2 and SDG-related indicators of impoverishment. In recent years, the share of out-of-pocket health spending in total health spending fell in only about half the countries. On the other hand, financial protection, as measured by the incidence of catastrophic and impoverishing payments, has improved in a few countries, and where it has, it usually coincided with substantial improvements in the coverage of reproductive, maternal, newborn, child and adolescent health and nutrition services. The analysis showed that the incidence of catastrophic health expenditures (SDG indicator 3.8.2) or impoverishment (using global poverty lines of \$1.90 and \$3.20 per person per day) due to out-of-pocket health expenditures was negatively correlated with the share of compulsory prepaid and pooled expenditure (government spending) in total current health spending (pointing towards better financial protection outcomes when there is greater reliance on public spending), and hence positively correlated with the share of out-of-pocket health spending in total health spending (pointing towards worse financial protection outcomes where there is greater reliance on out-of-pocket health spending).

The study also found that the majority of household out-of-pocket health spending was related to medicines and outpatient care, and not necessarily to huge hospital bills (Figure 14). Moreover, the structure of out-of-pocket health spending was similar if the study focused on households experiencing catastrophic payments at the 10% threshold, which suggests that it is not so much one specific type of expenditure that becomes catastrophic, but rather the accumulation of out-of-pocket health spending.

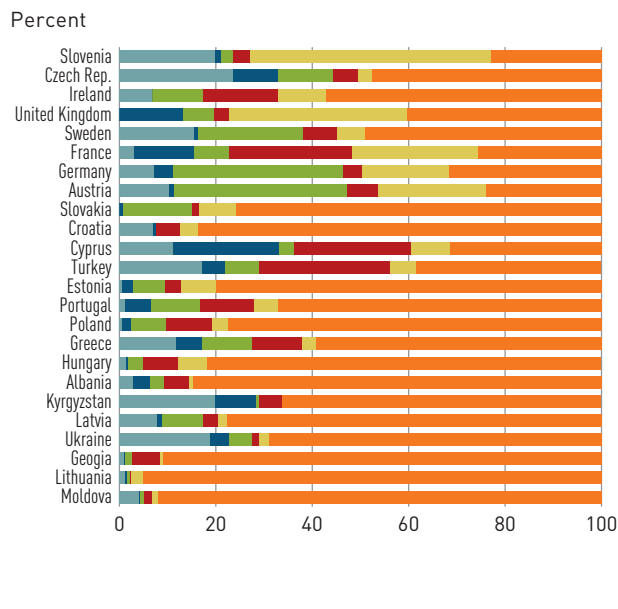
**FIGURE 13** In the World Health Organization European Region, households with catastrophic health spending are spending mostly on outpatient medicines

Out-of-pocket payments by health service among households with out-of-pocket payments greater than 40% of household capacity to pay for health care, latest year available

All households with catastrophic health spending

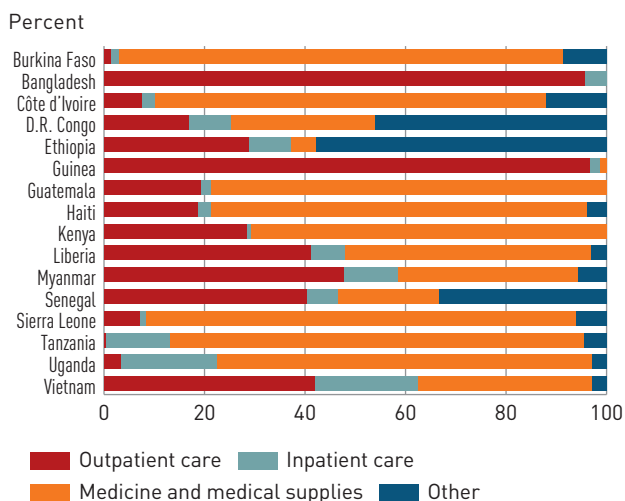


Households with catastrophic health spending in the poorest consumption quintile



**Note:** Countries are ranked by incidence of catastrophic health spending from lowest to highest. Consumption quintiles are based on daily per capita consumption using Organisation for Economic Co-operation and Development equivalence scales. See Box 2 for the definition of catastrophic health spending used in the region. **Source:** WHO Regional Office for Europe. Can people afford to pay for health care? New evidence on financial protection in Europe (21).

**FIGURE 14** Medicines and outpatient care are the main drivers of out-of-pocket expenditures in selected countries, mostly in Africa



**Source:** Data available from HEFPI dataset: <https://datacatalog.worldbank.org/dataset/hefpi>, 16 countries (median year, 2013). Analysis from (31).

## Limitations of the present report

This report shows that at the current pace, reducing financial hardship incurred when accessing health services will be challenging. Further analytical work is needed at the global level to better understand who suffers financial hardship, what its drivers are, what its short- versus long-term consequences are, how households try to mitigate financial hardship in the short-term by borrowing or depleting their assets and how health system features can reduce or increase financial hardship (9,13,32–34).

For instance, this report does not yet provide a detailed global analysis by socioeconomic status of inequalities in catastrophic and impoverishing health spending. Further methodological analysis is needed for at least two reasons: the SDG definition of catastrophic health spending (indicator 3.8.2) is sensitive to the choice of the welfare variable (income, consumption or consumption net of out-of-pocket health spending (5,13,34) and it does not take into account that poorer people devote most of their budget to necessities and so have a lower capacity to spend on health out of their own pocket (see Box 2) (9,19).

Previous global analysis has shown that greater reliance on public spending on health (defined as the share of total health spending channelled through social security funds and other government agencies) tends to be negatively correlated with the incidence of catastrophic and impoverishing health spending (measured using SDG and SDG-related indicators, pointing to better financial protection

outcomes). That analysis found no significant association between the share of total health spending channelled through private voluntary insurance and the incidence of catastrophic and impoverishing health spending, pointing to no significant association with financial protection outcomes (6,14). Increases in public spending on health or reductions in out-of-pocket spending are not enough to improve financial protection in all contexts, however. For instance, evidence from the WHO Europe Region shows that coverage policy – the way coverage is designed, implemented and governed – not just patterns of health spending, plays a key role in determining financial hardship (Box 7).

Financial protection is just one dimension of universal health coverage. People actually getting the services they need is another: people who simply forgo care because it is unaffordable do not incur catastrophic or impoverishing health spending. To identify whether low SDG and SDG-related indicators are driven by poor access to services rather than protection against out-of-pocket health spending, studies should link financial protection to use of services or to unmet needs. Such information has not usually been available in the household surveys used to monitor financial protection.

In the WHO Europe Region, however, analysis of financial protection draws on evidence of self-reported unmet need from surveys carried out in the European Union (Box 8). Within the SDG monitoring framework, financial protection monitoring is complemented

by an analysis of service coverage through the composite index of essential services (SDG indicator 3.8.1). This report is being published at the same time as a universal health coverage report showing progress in both dimensions (1). It points to mixed improvements since 2000 in service coverage and financial protection as tracked by SDG and SDG-related indicators of financial protection. Service coverage improved, and the number of people and percentage of the population impoverished by out-of-pocket health spending at the \$1.90 and \$3.20 per person per day decreased, though at different rates, but a growing number of people and percentage of the population incurred catastrophic health spending as tracked by SDG indicator 3.8.2, and impoverishment due to out-of-pocket health spending increased as measured by a relative poverty line. At the same time, within all regions,

progress towards UHC might differ across countries, with service coverage and financial protection following different trajectories and countries facing different corresponding challenges to sustain improvements or increase coverage in both dimensions.

Previous global analysis showed that SDG and SDG-related indicators of financial protection are positively correlated with GDP per capita, suggesting that as countries become richer, people may face greater financial hardship due to increased exposure to out-of-pocket payments (6,14). The challenge for policy is to ensure that any additional resources for health care are channelled through compulsory pooled prepayment mechanisms rather than through out-of-pocket spending, so that improvements in service coverage are accompanied by improvements in financial protection.

## BOX 7

### Acting on the evidence: better copayment policy is key in the World Health Organization European Region

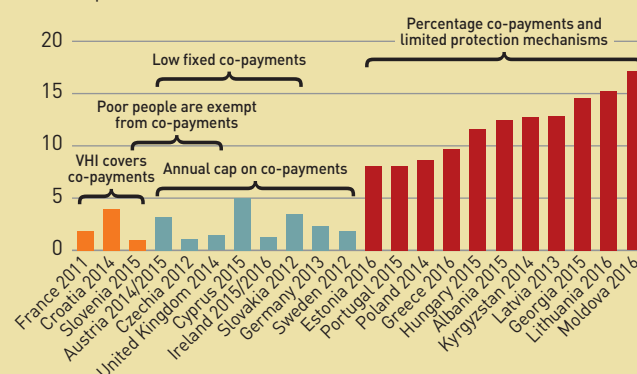
Evidence from the World Health Organization European Region shows that the first step towards strengthening financial protection in a given context is to identify gaps in coverage. The next step is to address them by carefully redesigning coverage policy.

Copayment policy is a key determinant of financial protection in health systems in the region (Box figure). It is the most important factor in countries where financial hardship is driven by outpatient medicines and the scope of the publicly financed benefits package is adequate. Countries can improve copayment design by introducing exemptions for poor people, applying annual caps to all copayments and replacing percentage copayments with low fixed copayments.

There is a wealth of good practice in Europe. Lessons can be learned from countries with strong financial protection, and also from countries where financial protection is weak overall but steps have been taken to protect poor people (21).

### BOX FIGURE Copayment policy is a key determinant of financial protection in health systems

Catastrophic incidence (%)



**Note:** Catastrophic health spending is defined in the World Health Organization European Region as out-of-pocket health spending exceeding 40% of household capacity to pay for health care. For the definition of capacity to pay see Box 2. VHI is voluntary health insurance. In most countries, VHI exacerbates inequalities in access to health care and financial protection because it is consistently more likely to be taken up by richer households (35). VHI is shown to be protective only at the health system level, where it covers copayments for publicly financed health services and covers most of the population, including most poor people. Only three countries meet these conditions: Croatia, France and Slovenia (35,36).

**Source:** WHO Regional Office for Europe, Can people afford to pay for health care? New evidence on financial protection in Europe (21).

**BOX 8**

**Unmet needs are part of financial protection analysis in the World Health Organization European Region**

Financial protection indicators capture financial hardship arising from the use of health services but do not indicate whether out-of-pocket payments create a barrier to access, resulting in unmet need. Bringing together data on financial hardship and unmet need reveals the following findings for the World Health Organization European Region.

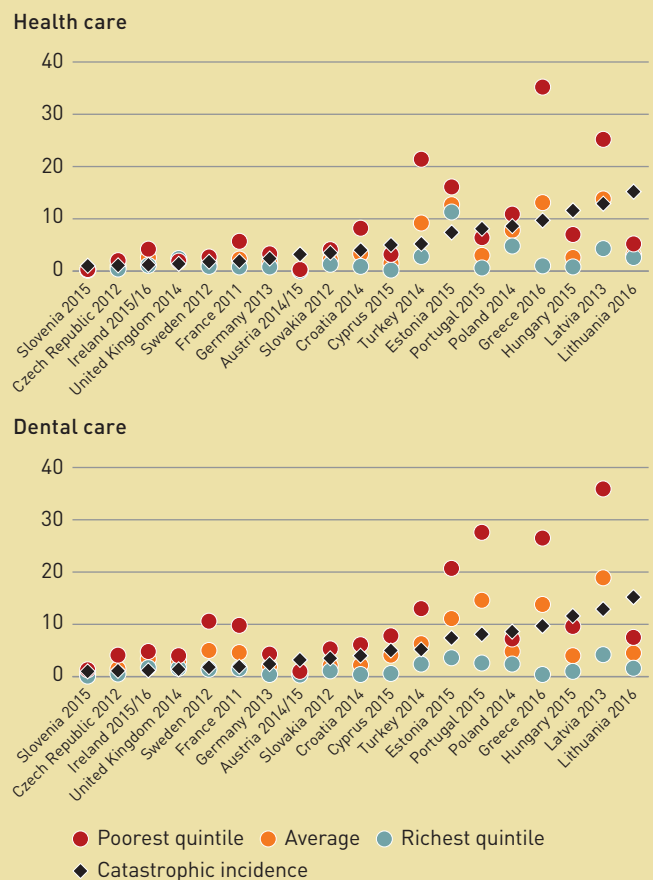
In countries where the share of households with catastrophic health spending (out-of-pocket spending exceeding 40% of household capacity to pay for health care) is very low, unmet need also tends to be low and without significant income inequality (Box figure). In countries where the share of households with catastrophic health spending is high, levels of unmet need are also relatively high, and income inequality between households with and without unmet need tends to be significant.

Data on unmet need help to explain the differences in the composition of out-of-pocket health spending among households with catastrophic health spending (see Box figure). Dental care is not a source of financial hardship for poor households because poor households are more likely to experience unmet need for dental care.

Faced with financial barriers to access, poor people may forgo the use of health services that they do not consider essential, such as dental care, and prioritize the use of outpatient medicines. Households that prioritize out-of-pocket spending on outpatient medicines can still experience unmet need. Unmet need for prescribed medicines is generally higher in countries with a higher incidence of catastrophic spending (data not shown) [21].

**BOX FIGURE** In countries in the WHO European Region where the incidence of catastrophic health spending is very low, unmet need also tends to be low and without significant income inequality

Overall incidence of catastrophic health spending and unmet need for health and dental care due to cost, distance or waiting time (percent of population, latest year available)



**Note:** Catastrophic health spending is defined in the World Health Organization European Region as out-of-pocket health spending exceeding 40% of household capacity to pay for health care and unmet need for health and dental care due to cost, distance or waiting time. Population refers to people aged 16 years and older. Quintiles are based on income. Data on catastrophic incidence and unmet need are for the same year. **Source:** WHO Regional Office for Europe, Can people afford to pay for health care? New evidence on financial protection in Europe [21].



## Annexes





## Annex 1. Sustainable Development Goal universal health care indicator 3.8.2: catastrophic health spending by country, most recent year available

Country	SDG UHC indicator 3.8.2, most recent available estimate (year)	SDG UHC indicator 3.8.2, latest year: incidence of catastrophic expenditure (%)	
		At 10% of household total consumption or income	At 25% of household total consumption or income
Afghanistan	2013	14.6	2.0
Albania	2012	16.7	4.9
Algeria	–	–	–
Angola	2008	12.4	4.5
Antigua and Barbuda	–	–	–
Argentina	2004	16.9	4.1
Armenia	2013	16.1	4.9
Australia	2010	3.7	0.5
Austria	1999	4.3	0.7
Azerbaijan	2005	8.1	1.1
Bahamas	2013	2.7	0.2
Bahrain	–	–	–
Bangladesh	2016	24.7	9.5
Barbados	2016	16.4	3.8
Belarus	2016	9.2	0.7
Belgium	2010	11.4	1.4
Belize	–	–	–
Benin	2011	10.9	5.4
Bhutan	2017	1.8	0.4
Bolivia (Plurinational State of)	2015	6.0	1.1
Bosnia and Herzegovina	2015	8.2	1.4
Botswana	2009	1.0	0.2
Brazil	2008	25.6	3.5
Brunei Darussalam	–	–	–
Bulgaria	2010	12.8	0.8
Burkina Faso	2014	3.1	0.4
Burundi	2013	3.3	0.4
Cabo Verde	2007	2.0	0.0
Cambodia	2014	15.3	5.2
Cameroon	2014	10.8	3.0
Canada <sup>a</sup>	2010	2.6	0.5
Central African Republic	2008	6.7	1.2
Chad	2003	6.3	0.2
Chile	2016	14.6	2.1
China	2013	19.7	5.4
Colombia	2016	8.2	2.2
Comoros	2014	8.8	1.6
Congo	2011	4.6	0.7
Costa Rica	2012	9.8	1.7
Côte d'Ivoire	2015	12.4	3.4
Croatia	2010	2.8	0.3
Cuba	–	–	–

Country	SDG UHC indicator 3.8.2, most recent available estimate (year)	SDG UHC indicator 3.8.2, latest year: incidence of catastrophic expenditure (%)	
		At 10% of household total consumption or income	At 25% of household total consumption or income
Cyprus	2010	16.1	1.5
Czechia	2010	2.2	0.1
Democratic People's Republic of Korea	—	—	—
Democratic Republic of the Congo	2012	4.8	0.6
Denmark	2010	2.9	0.5
Djibouti	2002	1.1	0.1
Dominican Republic	2007	17.7	4.9
Ecuador	2013	10.3	2.4
Egypt	2012	26.2	3.9
El Salvador	2014	1.7	0.3
Equatorial Guinea	—	—	—
Eritrea	—	—	—
Estonia	2007	12.8	2.7
Ethiopia	2015	4.9	1.4
Fiji	2008	0.8	0.1
Finland	2010	6.3	1.0
France <sup>a</sup>	2010	1.4	0.2
Gabon	2005	5.7	0.2
Gambia	2015	0.2	0.0
Georgia	2013	29.2	9.0
Germany <sup>a</sup>	2010	1.7	0.1
Ghana	2012	1.1	0.1
Greece	2016	16.9	1.6
Grenada	—	—	—
Guatemala	2014	1.4	0.0
Guinea	2012	7.0	1.3
Guinea-Bissau	2002	5.5	1.4
Guyana	1993	2.7	0.6
Haiti	2013	11.5	4.0
Honduras	2004	1.1	0.1
Hungary	2010	7.4	0.3
Iceland	1995	6.9	0.9
India	2011	17.3	3.9
Indonesia	2018	2.7	0.5
Iran (Islamic Republic of)	2013	15.8	3.8
Iraq	2012	3.3	0.4
Ireland	2010	6.4	0.7
Israel	2012	6.7	0.9
Italy	2010	9.3	1.1
Jamaica	2004	10.2	2.9
Japan <sup>a</sup>	2015	4.4	0.6
Jordan	2008	1.7	0.3
Kazakhstan	2015	2.6	0.1
Kenya	2015	5.4	1.5
Kiribati	—	—	—

Country	SDG UHC indicator 3.8.2, most recent available estimate (year)	SDG UHC indicator 3.8.2, latest year: incidence of catastrophic expenditure (%)	
		At 10% of household total consumption or income	At 25% of household total consumption or income
Kuwait	—	—	—
Kyrgyzstan	2016	3.5	0.7
Lao People's Democratic Republic	2007	3.0	0.3
Latvia	2009	15.5	3.5
Lebanon	1999	44.9	10.0
Lesotho	2010	4.5	1.4
Liberia	—	—	—
Libya	—	—	—
Lithuania	2010	9.8	1.6
Luxembourg	2010	3.4	0.1
Madagascar	2010	1.6	0.2
Malawi	2016	4.2	0.9
Malaysia	2004	0.7	0.0
Maldives	2009	19.9	6.2
Mali	2016	6.5	1.1
Malta	2010	15.9	2.8
Mauritania	2014	11.7	2.9
Mauritius	2012	8.8	1.8
Mexico	2016	1.6	0.2
Micronesia (Federated States of)	—	—	—
Mongolia	2014	2.4	0.5
Montenegro	2015	10.3	0.8
Morocco	2006	22.0	2.7
Mozambique	2014	1.6	0.4
Myanmar	2015	14.4	2.8
Namibia	2009	1.2	0.2
Nepal	2014	10.7	2.4
Netherlands	—	—	—
New Zealand	—	—	—
Nicaragua	2014	14.8	3.0
Niger	2011	6.6	1.9
Nigeria	2012	15.1	4.1
Norway	1998	5.1	0.5
Oman	1999	0.6	0.1
Pakistan	2015	4.5	0.5
Panama	2007	3.3	0.6
Papua New Guinea	—	—	—
Paraguay	2014	7.1	1.9
Peru	2018	9.2	1.3
Philippines	2015	6.3	1.4
Poland	2016	14.1	1.3
Portugal	2010	18.4	3.3
Qatar	—	—	—
Republic of Korea	2015	21.8	3.9
Republic of Moldova	2016	18.7	3.6

Country	SDG UHC indicator 3.8.2, most recent available estimate (year)	SDG UHC indicator 3.8.2, latest year: incidence of catastrophic expenditure (%)	
		At 10% of household total consumption or income	At 25% of household total consumption or income
Republic of North Macedonia	2008	5.4	0.6
Romania	2016	13.4	2.2
Russian Federation	2014	4.9	0.6
Rwanda	2016	1.2	0.1
Saint Lucia	—	—	—
Saint Vincent and the Grenadines	—	—	—
Samoa	—	—	—
Sao Tome and Principe	2000	10.2	1.0
Saudi Arabia	—	—	—
Senegal	2011	3.3	0.2
Serbia	2015	8.0	0.5
Seychelles <sup>a</sup>	2013	3.5	1.6
Sierra Leone	2011	54.2	22.2
Singapore	2013	9.0	1.5
Slovakia	2010	3.8	0.4
Slovenia	2012	2.9	0.3
Solomon Islands	—	—	—
Somalia	—	—	—
South Africa	2010	1.4	0.1
South Sudan	2009	8.7	2.6
Spain	2010	5.7	1.2
Sri Lanka	2016	5.4	0.9
Sudan	2009	18.4	3.3
Suriname	2016	4.9	1.4
Eswatini	2009	13.4	2.0
Sweden	1996	5.5	0.7
Switzerland	2004	19.7	6.7
Syrian Arab Republic	2007	6.9	1.4
Tajikistan	2009	17.7	5.7
Thailand	2017	2.2	0.4
Timor-Leste	2014	2.9	0.5
Togo	2006	10.7	0.0
Tonga	—	—	—
Trinidad and Tobago	2014	3.9	1.9
Tunisia	2015	18.4	2.7
Turkey	2016	3.2	0.4
Turkmenistan	—	—	—
Uganda	2016	15.3	3.8
Ukraine	2014	7.8	0.8
United Arab Emirates	—	—	—
United Kingdom	2013	1.6	0.5
United Republic of Tanzania	2011	3.8	1.2
United States of America	2013	4.8	0.8
Uruguay	2005	4.5	0.3
Uzbekistan	2003	6.7	1.8

Country	SDG UHC indicator 3.8.2, most recent available estimate (year)	SDG UHC indicator 3.8.2, latest year: incidence of catastrophic expenditure (%)	
		At 10% of household total consumption or income	At 25% of household total consumption or income
Vanuatu	—	—	—
Venezuela (Bolivarian Republic of)	—	—	—
Viet Nam	2016	9.4	1.9
Yemen	2014	15.8	4.2
Zambia	2010	0.3	0.0
Zimbabwe	2007	2.1	0.7

a. Estimates based on household income data instead of household consumption.

**Note:** Catastrophic health spending is defined as out-of-pocket expenditures exceeding 10% and 25% of household total consumption or income. This definition with these two thresholds corresponds to SDG indicator 3.8.2, defined as “the proportion of population with large household expenditures on health as a share of total household expenditure or income”. WHO and World Bank estimated values are based on standard definitions and methods to ensure cross-country comparability, which may not correspond to the methods used at regional and/or national level to monitor catastrophic spending on health. These estimates are based on a data availability for global monitoring which may not necessarily align with availability of data at national or regional levels.

**Source:** Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

## Annex 2. Sustainable Development Goal-related indicators of impoverishment due to out-of-pocket health spending by country, most recent year available

Country	Latest year	Incidence of impoverishment due to out-of-pocket health spending (%)			Poverty gap increase due to out-of-pocket health spending expressed as a % of the poverty line		
		Poverty line			Poverty line		
		\$1.90 a day in 2011 PPP	\$3.20 a day in 2011 PPP	60% of median daily per capita household consumption	\$1.90 a day in 2011 PPP	\$3.20 a day in 2011 PPP	60% of median daily per capita total household consumption
Afghanistan	2013	4.52	2.75	3.08	1.94	2.85	0.80
Albania	2012	0.36	1.46	2.51	0.06	0.38	0.62
Angola	2008	2.01	2.64	1.65	0.77	1.44	0.64
Argentina	2004	0.24	0.62	1.98	0.06	0.22	0.65
Armenia	2013	0.49	2.38	2.54	0.10	0.65	0.53
Australia	2010	0.00	0.00	1.22	0.00	0.00	0.28
Austria	1999	0.00	0.00	1.28	0.00	0.00	0.31
Azerbaijan	2005	0.00	0.02	0.76	0.00	0.00	0.07
Bahamas	2013	0.00	0.00	1.35	0.00	0.00	0.25
Bangladesh	2016	6.98	6.18	6.52	2.69	4.51	2.41
Barbados	2016	0.34	0.29	1.76	0.10	0.18	0.48
Belarus	2016	0.00	0.01	1.71	0.00	0.00	0.33
Belgium	2010	0.00	0.00	2.23	0.00	0.00	0.54
Benin	2011	1.86	0.54	4.00	3.06	2.24	3.18
Bhutan	2017	0.01	0.21	0.36	0.00	0.05	0.12
Bolivia (Plurinational State of)	2015	0.25	0.62	0.88	0.05	0.17	0.32
Bosnia and Herzegovina	2015	0.01	0.04	1.85	0.00	0.01	0.43
Botswana	2009	0.19	0.26	0.27	0.28	0.27	0.27
Brazil	2008	1.04	1.98	2.62	0.39	0.87	1.26
Bulgaria	2010	0.00	0.24	2.43	0.00	0.04	0.57
Burkina Faso	2014	1.92	0.90	1.61	1.12	1.22	0.38
Burundi	2013	0.99	0.37	1.25	0.90	0.78	0.39
Cabo Verde	2007	0.14	0.54	0.55	0.05	0.16	0.26
Cambodia	2009	2.99	6.34	4.55	1.48	2.87	1.96
Cameroon	2014	1.86	1.91	1.87	0.61	1.14	0.83
Canada*	2010	0.03	0.02	1.24	0.06	0.05	0.45
Central African Republic	2008	—	—	0.97	—	—	0.56
Chad	2003	1.36	0.82	1.36	1.07	1.11	0.44
Chile	2016	0.00	0.06	2.03	0.00	0.01	0.48
China	2013	1.48	3.39	4.19	0.38	1.37	1.63
Colombia	2016	0.31	0.71	1.24	0.09	0.24	0.50
Congo	2011	1.05	1.50	1.10	0.62	0.91	0.59
Costa Rica	2012	0.05	0.29	1.21	0.02	0.08	0.48
Cote d'Ivoire	2015	2.25	2.58	2.10	0.81	1.50	0.69
Croatia	2010	0.00	0.00	1.04	0.00	0.00	0.26
Cyprus	2010	0.00	0.17	2.80	0.00	0.08	0.71
Czechia	2010	0.00	0.00	0.94	0.00	0.00	0.19
Democratic Republic of the Congo	2012	0.87	0.36	1.18	1.04	0.86	0.57
Denmark	2010	0.00	0.00	1.37	0.00	0.00	0.19
Djibouti	2002	0.60	1.00	0.64	0.22	0.48	0.24



Country	Latest year	Incidence of impoverishment due to out-of-pocket health spending (%)			Poverty gap increase due to out-of-pocket health spending expressed as a % of the poverty line		
		Poverty line			Poverty line		
		\$1.90 a day in 2011 PPP	\$3.20 a day in 2011 PPP	60% of median daily per capita household consumption	\$1.90 a day in 2011 PPP	\$3.20 a day in 2011 PPP	60% of median daily per capita total household consumption
Dominican Republic	2007	0.53	1.71	3.18	0.14	0.60	1.20
Ecuador	2013	0.65	1.59	2.31	0.34	0.64	0.97
Egypt	2012	0.12	1.07	3.98	0.02	0.20	0.77
El Salvador	2014	0.04	0.09	0.25	0.01	0.03	0.08
Estonia	2007	0.01	0.17	2.72	0.00	0.09	0.79
Ethiopia	2015	0.95	0.63	1.01	0.95	0.79	0.59
Fiji	2002	0.53	0.92	0.61	0.19	0.40	0.22
Finland	2010	0.00	0.00	2.26	0.00	0.00	0.53
France*	2010	0.04	0.03	0.71	0.03	0.03	0.29
Gabon	2005	0.64	1.09	1.09	0.11	0.37	0.37
Gambia	2003	0.86	0.38	0.99	0.47	0.49	0.29
Georgia	2013	3.07	5.72	4.46	1.15	2.45	2.04
Germany*	2010	0.02	0.01	0.65	0.01	0.01	0.21
Ghana	2012	0.21	0.38	0.37	0.07	0.20	0.19
Greece	2016	0.00	0.00	2.49	0.00	0.00	0.61
Guatemala	2014	0.29	0.40	0.35	0.02	0.09	0.10
Guinea	2012	2.48	1.76	1.33	0.87	1.36	0.49
Guinea-Bissau	2002	1.61	1.25	1.20	1.06	1.24	0.43
Guyana	1993	0.34	1.09	0.55	0.15	0.36	0.24
Haiti	2013	—	—	3.82	—	—	1.85
Honduras	2004	—	—	0.22	—	—	0.12
Hungary	2010	0.00	0.03	1.48	0.00	0.01	0.40
Iceland	1995	0.00	0.00	1.31	0.00	0.00	0.34
India	2011	4.16	4.44	3.23	1.12	2.54	0.68
Indonesia	2015	0.31	0.83	0.90	0.05	0.33	0.20
Iran (Islamic Republic of)	2013	0.01	0.17	2.12	0.00	0.03	0.63
Iraq	2012	0.35	1.22	1.23	0.11	0.40	0.43
Ireland	2010	0.00	0.00	0.73	0.00	0.00	0.16
Israel	2012	0.00	0.00	1.44	0.00	0.00	0.47
Italy	2010	0.00	0.00	1.33	0.00	0.00	0.43
Jamaica	2004	0.50	1.51	2.42	0.13	0.42	0.89
Japan	2015	0.11	0.13	1.35	0.10	0.11	0.62
Jordan	2002	0.05	0.28	0.56	0.02	0.07	0.24
Kazakhstan	2015	0.00	0.02	1.30	0.00	0.00	0.16
Kenya	2015	1.48	1.33	1.51	0.97	1.14	0.85
Kosovo (non-whoname)	2016	0.06	0.70	1.34	0.01	0.13	0.34
Kyrgyzstan	2016	0.07	1.06	0.62	0.01	0.20	0.08
Lao People's Democratic Republic	2007	0.40	1.18	0.44	0.09	0.41	0.11
Latvia	2009	0.10	0.78	2.54	0.02	0.16	0.69
Lebanon	1999	0.03	0.03	6.95	0.00	0.01	2.68
Lesotho	2010	0.35	0.30	0.71	0.66	0.53	0.65
Lithuania	2010	0.00	0.01	1.86	0.00	0.00	0.54
Luxembourg	2010	0.00	0.00	1.06	0.00	0.00	0.46

Country	Latest year	Incidence of impoverishment due to out-of-pocket health spending (%)			Poverty gap increase due to out-of-pocket health spending expressed as a % of the poverty line		
		Poverty line			Poverty line		
		\$1.90 a day in 2011 PPP	\$3.20 a day in 2011 PPP	60% of median daily per capita household consumption	\$1.90 a day in 2011 PPP	\$3.20 a day in 2011 PPP	60% of median daily per capita total household consumption
Madagascar	2010	0.39	0.18	0.51	0.40	0.35	0.16
Malawi	2016	1.31	0.94	1.06	0.73	0.92	0.28
Malaysia	2004	0.09	0.09	0.44	0.01	0.05	0.12
Maldives	2009	1.49	3.47	3.37	0.23	0.84	0.79
Mali	2016	1.97	1.17	1.68	1.22	1.45	0.46
Malta	2010	0.00	0.00	3.10	0.00	0.00	0.86
Mauritania	2008	1.12	1.99	1.36	0.36	0.75	0.57
Mauritius	2012	0.01	0.47	1.01	0.00	0.06	0.26
Mexico	2016	0.03	0.13	0.44	0.01	0.03	0.16
Mongolia	2014	0.24	0.37	0.57	0.05	0.11	0.36
Montenegro	2015	0.00	0.41	1.64	0.00	0.04	0.41
Morocco	2006	0.63	3.18	3.47	0.14	0.78	1.04
Mozambique	2008	0.23	0.18	0.28	0.25	0.23	0.14
Myanmar	2015	0.63	2.92	2.27	0.14	0.80	0.63
Namibia	2009	—	—	0.40	—	—	0.17
Nepal	2014	1.67	3.68	2.24	0.54	1.50	0.66
Nicaragua	2014	0.99	1.84	2.63	0.20	0.71	0.86
Niger	2011	2.55	1.72	1.10	0.96	1.49	0.24
Nigeria	2012	3.50	3.70	2.98	1.43	2.35	0.97
Norway	1998	0.00	0.00	2.09	0.00	0.00	0.37
Oman	1999	—	—	0.39	—	—	0.08
Pakistan	2015	0.87	2.97	2.06	0.12	0.91	0.33
Panama	2007	0.00	0.01	1.00	0.00	0.01	0.29
Paraguay	2014	1.27	1.64	1.37	0.69	1.04	1.28
Peru	2018	0.02	0.35	1.35	0.01	0.07	0.39
Philippines	2015	0.48	1.35	0.96	0.12	0.47	0.29
Poland	2016	0.00	0.04	2.67	0.00	0.00	0.62
Portugal	2010	0.00	0.00	3.15	0.00	0.00	1.03
Republic of Korea	2015	0.00	0.02	3.85	0.00	0.00	1.17
Republic of Moldova	2016	0.00	0.44	3.05	0.00	0.08	0.68
Romania	2016	0.00	0.55	2.14	0.00	0.08	0.54
Russian Federation	2014	0.00	0.01	1.79	0.00	0.00	0.45
Rwanda	2016	0.60	0.26	0.69	0.41	0.41	0.24
Sao Tome and Principe	2000	0.82	2.28	0.89	0.34	0.85	0.40
Senegal	2011	1.10	1.13	1.78	0.65	0.99	0.49
Serbia	2015	0.04	0.26	2.11	0.00	0.03	0.50
Seychelles*	2013	—	—	1.26	—	—	1.08
Sierra Leone	2011	13.42	6.01	11.60	8.19	8.67	3.91
Slovakia	2010	0.00	0.02	0.83	0.00	0.00	0.23
Slovenia	2012	0.00	0.00	0.81	0.00	0.00	0.10
South Africa	2010	0.45	0.48	0.50	0.17	0.32	0.31
South Sudan	2009	1.56	1.72	1.05	0.89	1.16	0.71
Spain	2010	0.00	0.00	1.12	0.00	0.00	0.29

Country	Latest year	Incidence of impoverishment due to out-of-pocket health spending (%)			Poverty gap increase due to out-of-pocket health spending expressed as a % of the poverty line		
		Poverty line			Poverty line		
		\$1.90 a day in 2011 PPP	\$3.20 a day in 2011 PPP	60% of median daily per capita household consumption	\$1.90 a day in 2011 PPP	\$3.20 a day in 2011 PPP	60% of median daily per capita total household consumption
Sri Lanka	2016	0.07	0.52	1.26	0.01	0.11	0.28
Sudan	2009	—	—	3.32	—	—	1.15
Suriname	2016	0.02	0.04	1.07	0.00	0.02	0.29
Swaziland	2009	1.36	1.28	1.85	1.18	1.22	0.74
Sweden	1996	0.00	0.00	1.23	0.00	0.00	0.36
Switzerland	2004	0.00	0.00	3.55	0.00	0.00	0.83
Syrian Arab Republic	2007	0.05	0.83	1.51	0.01	0.18	0.39
Taiwan, China	2016	0.06	0.10	2.18	0.06	0.07	0.77
Tajikistan	2009	2.56	4.94	2.49	0.73	1.70	0.91
Thailand	2017	0.00	0.01	0.62	0.00	0.00	0.18
The former Yugoslav Republic of Macedonia	2008	0.09	0.35	0.74	0.05	0.13	0.31
Timor-Leste	2014	—	0.62	0.29	—	0.54	0.11
Togo	2006	2.54	1.62	1.88	1.43	1.63	0.46
Trinidad and Tobago	2005	0.51	0.70	1.27	0.52	0.56	0.68
Tunisia	2015	0.09	0.73	2.83	0.01	0.15	0.91
Turkey	2016	0.00	0.21	0.71	0.00	0.03	0.28
Uganda	2016	3.18	2.72	2.62	1.51	2.19	0.81
Ukraine	2014	0.00	0.07	1.43	0.00	0.01	0.30
United Kingdom	2013	0.00	0.00	0.35	0.00	0.00	0.10
United Republic of Tanzania	2011	1.38	0.79	1.01	0.50	0.69	0.22
United States of America	2013	0.00	0.00	0.84	0.00	0.00	0.26
Uruguay	2005	0.01	0.22	0.48	0.01	0.05	0.30
Uzbekistan	2003	1.39	0.90	0.83	0.94	1.03	0.26
Viet Nam	2016	0.25	1.04	2.36	0.05	0.29	0.70
West Bank and Gaza Strip	2016	0.12	0.38	1.52	0.01	0.10	0.41
Yemen	2014	3.48	4.08	4.27	1.50	2.54	2.08
Zambia	2010	0.14	0.12	0.00	0.08	0.09	0.00
Zimbabwe	2007	0.01	0.02	0.19	0.12	0.09	0.13

\* Estimates based on household income data instead of household consumption data.

**Note:** Impoverishing spending on health occurs when a household is forced by an adverse health event to divert spending from nonmedical budget items such as food, shelter and clothing to such an extent that its spending on these items is reduced below the level indicated by the poverty line. Indicators of impoverishing spending on health are not part of the official SDG indicator of universal health coverage per se, but link universal health coverage directly to the first SDG goal, namely to end poverty in all its forms everywhere. WHO and World Bank estimated values are based on standard definitions and methods to ensure cross-country comparability, which may not correspond to the methods used at regional and/or national level to monitor catastrophic spending on health. These estimates are based on a data availability for global monitoring, which may not necessarily align with availability of data at national or regional levels.

**Source:** Global database on financial protection assembled by WHO and the World Bank, 2019 update. (26,27)

### Annex 3. World Health Organization European Region indicators of catastrophic and impoverishing health spending

Country	Latest year	Proportion of households with out-of-pocket payments greater than 40% of capacity to pay <sup>a</sup>	Proportion of households at risk of impoverishment after out-of-pocket payments <sup>b</sup>				
			Further impoverished	Impoverished	At risk of impoverishment	Not at risk of impoverishment	No out-of-pocket payments
Albania	2015	12.5	6.7	1.5	6.7	51.4	33.7
Austria	2014/2015	3.2	0.8	0.2	1.0	77.9	20.9
Croatia	2014	4.0	2.0	0.5	3.3	73.8	20.4
Cyprus	2015	5.0	1.3	0.5	1.9	88.4	8.0
Czechia	2012	1.1	0.4	0.1	1.4	97.6	0.6
Estonia	2016	8.1	1.5	1.3	2.8	50.0	40.4
France	2011	1.9	1.1	0.2	1.4	81.8	15.6
Georgia	2015	14.5	2.7	2.2	3.4	70.5	21.3
Germany	2013	2.4	0.8	0.2	2.6	86.8	9.7
Greece	2016	9.7	1.6	1.0	3.1	80.5	13.9
Hungary	2015	11.6	3.8	2.1	5.7	76.0	12.3
Ireland	2015/2016	1.2	0.8	0.1	0.9	64.5	33.8
Italy	2016	8.0	2.7	1.1	2.8	72.6	20.8
Kyrgyzstan	2014	12.8	2.2	1.5	6.7	71.2	18.5
Latvia	2013	12.9	2.4	1.8	3.8	58.9	33.2
Lithuania	2016	15.2	2.2	3.4	4.2	52.3	37.8
Republic of Moldova	2016	17.1	3.2	3.5	8.9	56.5	27.9
Poland	2014	8.6	2.6	1.1	4.3	75.3	16.7
Portugal	2015	8.1	1.9	1.2	2.5	86.4	8.1
Slovakia	2012	3.5	1.3	0.2	3.1	79.7	15.7
Slovenia	2015	1.0	0.3	0.1	0.7	77.5	21.5
Spain	2015	3.9	2.2	0.2	1.3	66.4	29.8
Sweden	2012	1.8	0.9	0.2	0.6	50.5	47.8
Turkey	2014	5.2	3.1	0.5	2.5	60.1	33.8
Ukraine	2015	14.5	6.8	2.2	8.3	75.8	7.0
United Kingdom	2014	1.4	0.8	0.0	0.7	51.4	47.1

a. Catastrophic health spending defined as out-of-pocket payments exceeding 40% of capacity to pay using the food, housing and utilities approach (Box 2)

b. Proportion of households at risk of impoverishment after out-of-pocket payments using a relative poverty line reflecting basic needs on food, housing and utilities (Box 2).

Source: WHO Regional Office for Europe, Can people afford to pay for health care? New evidence on financial protection in Europe (21).

## Annex 4. Sensitivity of 2015 estimates to recency of the Indian and Chinese data and econometric modelling

The 2015 global and regional aggregates rely more on econometric modelling to line up survey-based estimates than aggregates for previous reference years. Data imputation concerns countries that account for 71% of the 2015 world population versus countries that accounted for at most one third of the 2015 world population for previous reference years. Modelling is also based on less recent data for India in particular (most recent year is 2011) and to some extent China (2013). Two simple approaches are followed to test for sensitivity of 2015 aggregates to these issues.

First, global and regional estimates based on simple population weighted averages of all country survey-based estimates around reference years are compared to those obtained by combining observed estimates with interpolated, extrapolated and modelled points (see Box 4). The purpose is to determine to what extent the 2010-2015 trends are driven by the modelling. Second, global and regional aggregates for all reference years are produced with and without China and India to determine to what extent the levels and trends are driven by these two populous countries who account together for 37% of the world population.

For SDG indicator 3.8.2 of catastrophic health spending, similar trends are observed between 2010 and 2015 when using simple averages of survey-based estimates as opposed to the approach relying on econometric modelling (Table A4.1). However, the magnitude of the increase over time is lower. For instance, the annual average increase in the percentage of the population with out-of-pocket health spending exceeding 10% of the household total consumption or income is estimated to be 0.08 percentage points per year between 2010 and 2015 versus 0.13 percentage points based on the current approach.

For indicators of impoverishment based on the \$3.20 a day poverty line and the relative poverty line of 60% of median per capita consumption or income, global trends are also robust to the estimation approach with similar direction of changes between 2010 and 2015 and differences only observed in some cases in the magnitude of changes (a higher reduction is estimated at the \$3.20 a

day poverty line based on simple averages but similar changes when using the relative poverty line) (Table A4.2). At the \$1.90 a day poverty line however, based on simple averages the reduction between 2010 and 2015 is not confirmed (see Table A4.2). The latter can be explained by the fact that in the simple average approach, the impact of out-of-pocket health spending on poverty for India is supposed to remain unchanged between 2010 and 2015. The latter assumption is unlikely to be confirmed once the 2017 household survey for India is released as a poverty reduction is expected by poverty analysts due to the overall income growth in India and to some extent due to methodological changes in the surveys used to collect data on household consumption (37).

Keeping the same estimation approach (see Box 4) but computing trends over time with and without China and India also confirms the overall increasing percentage of the population spending more than 10% and 25% of the household budget on health out-of-pocket (SDG 3.8.2) but the increase in the percentage of the population is once again lower and the total number of people concerned by such type of health spending is much lower. For instance, in 2015 of the 926.6 million people estimated to have incurred catastrophic health spending at the 10% threshold, only 679.6 million are counted when excluding India and about 424 million people are left when excluding China as well. So the overall increase in the number of people spending more than 10% of their household budget is estimated to be 2.4% per year between 2010 and 2015 when including all countries, it is down to 1.8% per year when excluding China and India, 1.3% per year when excluding India only.

The reduction in the percent of the population and number of people impoverished by out-of-pocket health spending at the \$1.90<sup>26</sup> and \$3.20 a day poverty line are confirmed when using the same estimation approach but excluding India and India & China jointly and the estimated increase when using the relative poverty line is also confirmed. The number of people concerned by such health expenditures are lower in all cases.

**TABLE A4.1 Incidence of catastrophic health spending as tracked by SDG indicator 3.8.2, both thresholds of household total consumption or income**

Global	Number of people (millions)				% of population			
SDG 3.8.2, 10% threshold	2000	2005	2010	2015	2000	2005	2010	2015
Based on simple averages	511.6	667.3	769.8	769.8	9.9	11.0	11.9	12.3
Current methods (all countries)	570.5	738.1	828.3	926.6	9.4	11.4	12.0	12.7
Without India & China	270.3	327.5	388.8	423.9	7.2	8.1	9.0	9.2
Without India	424.8	552.6	639.2	679.6	8.4	10.3	11.3	11.3
SDG 3.8.2, 25% threshold	Number of people (millions)				% of population			
	2000	2005	2010	2015	2000	2005	2010	2015
Based on simple averages	107.9	141.3	172.0	182.6	2.1	2.3	2.7	2.9
Current methods (all countries)	105.9	161.6	180.2	208.7	1.7	2.5	2.6	2.9
Without India & China	47.7	59.2	71.2	83.1	1.3	1.5	1.6	1.8
Without India	82.4	118.4	139.1	152.6	1.6	2.2	2.5	2.5

Note: Current method described in Box 4. All aggregates produced jointly by WHO and the World Bank

Source: Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

**TABLE A4.2 Incidence of impoverishment due to out-of-pocket health spending, various poverty lines**

Global	Number of people (millions)				% of population			
\$1.90 a day poverty line	2000	2005	2010	2015	2000	2005	2010	2015
Based on simple averages	104.28	111.42	105.42	102.31	2.04	1.86	1.65	1.66
Current methods (all countries)	123.94	116.80	103.42	89.69	2.03	1.80	1.50	1.23
Without India & China	49.29	31.91	30.17	32.05	1.31	0.79	0.70	0.69
Without India	84.26	62.59	55.38	48.31	1.67	1.17	0.98	0.80
\$3.20 a day poverty line	Number of people (millions)				% of population			
	2000	2005	2010	2015	2000	2005	2010	2015
Based on simple averages	85.96	107.81	126.36	98.09	1.68	1.80	1.97	1.59
Current methods (all countries)	92.98	118.89	119.46	98.76	1.50	1.80	1.70	1.40
Without India & China	43.54	44.99	46.54	44.14	1.15	1.11	1.08	0.95
Without India	71.03	79.32	70.23	49.27	1.41	1.48	1.24	0.82
Relative poverty line	Number of people (millions)				% of population			
	2000	2005	2010	2015	2000	2005	2010	2015
Based on simple averages	91.37	116.30	142.37	157.71	1.78	1.94	2.22	2.56
Current methods (all countries)	110.88	126.29	151.15	183.24	1.80	1.90	2.20	2.50
Without India & China	54.87	59.74	70.11	81.77	1.45	1.48	1.62	1.77
Without India	83.89	95.66	117.30	138.05	1.67	1.79	2.07	2.30

Note: Current method described in Box 4. All aggregates produced jointly by WHO and the World Bank.

Source: Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).



## Annex 5. List of countries by United Nations regions

### AFRICA

#### Northern Africa

Algeria, Egypt, Libya, Morocco, Sudan, Tunisia

#### Sub-Saharan Africa

Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Togo, Uganda, United Republic of Tanzania, Zambia, Zimbabwe

### ASIA

#### Central Asia

Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan

#### Eastern Asia

China, Democratic People's Republic of Korea, Japan, Mongolia, Republic of Korea

#### South-eastern Asia

Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, Timor-Leste, Viet Nam

#### Southern Asia

Afghanistan, Bangladesh, Bhutan, India, Iran (Islamic Republic of), Maldives, Nepal, Pakistan, Sri Lanka

### Western Asia

Armenia, Azerbaijan, Bahrain, Cyprus, Georgia, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Turkey, United Arab Emirates, Yemen

### EUROPE

Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Montenegro, Netherlands, Norway, Poland, Portugal, Republic of Moldova, North Macedonia, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom of Great Britain and Northern Ireland

### LATIN AMERICA AND THE CARIBBEAN

Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela (Bolivarian Republic of)

### NORTHERN AMERICA

Canada, United States of America

### OCEANIA

Australia, Fiji, Kiribati, Micronesia (Federated States of), New Zealand, Papua New Guinea, Samoa, Solomon Islands, Tonga, Vanuatu

## Annex 6. Incidence of catastrophic health spending as tracked by SDG indicator 3.8.2, 10% of household spending threshold, by World Health Organization region, World Bank region and World Bank income group

WHO regions	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
Global	9.4	570.5	11.4	738.1	12	828.3	12.7	926.6
African Region	6	39.8	7	52.6	7.4	63.2	7.3	71.1
Region of the Americas	9.1	75.3	11.8	104.2	13.4	124.8	11.3	109.8
Eastern Mediterranean Region	8	38.1	8.8	47.0	10.3	61.3	11.7	76.9
European Region	6.3	54.4	6.4	56.3	6.6	58.9	7.4	67.4
South-East Asia Region	11.5	180.1	12.9	218.7	12.8	232.5	16	307.4
Western Pacific Region	10.9	181.7	14.9	258.2	16	286.2	15.9	292.6
Non-Member States	6.4	1.1	6.7	1.2	6.9	1.3	7.4	1.4

World Bank regions	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
World	9.4	570.5	11.4	738.1	12	828.3	12.7	926.6
East Asia and Pacific	9.6	194.7	12.8	270.0	13.8	301.0	13.9	313.8
Europe and Central Asia	6.3	54.0	6.4	55.8	6.6	58.6	7.4	67.0
Latin America and the Caribbean	11.2	58.4	15.6	87.1	18.6	109.5	15.1	94.4
Middle East and North Africa	8.5	26.9	11	38.0	12.6	48.7	13.5	57.6
North America	5.5	17.2	5.3	17.4	4.6	15.6	4.4	15.8
South Asia	12.8	178.1	14.1	213.8	13.8	226.5	17.2	301.5
Sub-Saharan Africa	6.2	41.3	7.4	56.0	7.9	68.3	7.7	76.6

World Bank income groups	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
Global	9.4	570.5	11.4	738.1	12	828.3	12.7	926.6
High	5.2	46.2	6.1	60.5	6.5	71.7	6.9	80.3
Upper middle	10.2	66.3	6.2	37.5	15.8	387.6	14.9	385.1
Lower middle	10	204.6	14.2	351.2	11.8	300.2	14.2	418.1
Low	10.1	252.2	12	288.3	8.6	68.3	6.9	43.2

**Note:** All aggregates produced jointly by WHO and the World Bank (see Box 4). WHO and World Bank estimated values are based on standard definitions and methods to ensure cross-country comparability, which may not correspond to the methods used at regional or national level to monitor catastrophic spending on health. These estimates are based on a data availability for global monitoring, which may not necessarily align with the availability of data at national or regional levels.

**Source:** Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

## Annex 7. Incidence of catastrophic health spending as tracked by SDG indicator 3.8.2, 25% of household spending threshold, by World Health Organization region, World Bank region and World Bank income group

WHO regions	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
Global	1.7	105.9	2.5	161.6	2.6	180.2	2.9	208.7
African Region	1.2	7.6	1.5	11.4	1.7	14.6	1.8	17.4
Region of the Americas	1.5	12.8	2.0	17.5	2.2	20.0	1.8	18.0
Eastern Mediterranean Region	1.1	5.0	1.3	6.8	1.7	10.3	1.9	12.4
European Region	1.0	8.6	1.0	9.0	1.0	9.4	1.2	10.5
South-East Asia Region	2.0	31.8	3.0	50.4	2.8	50.8	3.8	73.6
Western Pacific Region	2.4	39.8	3.8	66.4	4.2	74.8	4.2	76.6
Non-Member States	0.9	0.2	1.1	0.2	1.2	0.2	1.1	0.2

World Bank regions	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
World	1.7	105.9	2.5	161.6	2.6	180.2	2.9	208.7
East Asia and Pacific	2.1	41.8	3.2	68.1	3.5	77.0	3.5	79.7
Europe and Central Asia	1.0	8.6	1.0	9.0	1.0	9.3	1.2	10.4
Latin America and the Caribbean	1.9	9.7	2.6	14.5	3.0	17.5	2.5	15.5
Middle East and North Africa	1.4	4.5	1.8	6.1	2.2	8.5	2.3	9.7
North America	1.0	3.1	0.9	3.0	0.8	2.6	0.7	2.6
South Asia	2.2	30.2	3.2	48.9	3.0	49.7	4.1	72.4
Sub-Saharan Africa	1.2	7.9	1.6	12.0	1.8	15.6	1.9	18.4

World Bank income groups	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
Global	1.7	105.9	2.5	161.6	2.6	180.2	2.9	208.7
High	0.9	7.7	1.0	10.1	1.0	11.4	1.1	12.6
Upper middle	1.5	9.7	1.2	7.0	3.7	90.2	3.5	90.7
Lower middle	2.1	43.4	3.2	78.7	2.5	62.6	3.3	95.9
Low	1.8	44.9	2.7	65.8	2.0	15.9	1.5	9.5

**Note:** All aggregates produced jointly by WHO and the World Bank (see Box 4). WHO and World Bank estimated values are based on standard definitions and methods to ensure cross-country comparability, which may not correspond to the methods used at regional or national level to monitor catastrophic spending on health. These estimates are based on a data availability for global monitoring, which may not necessarily align with the availability of data at national or regional levels.

**Source:** Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

### Annex 8. Incidence of impoverishment due to out-of-pocket health spending at the \$1.90 per person per day poverty line (in 2011 PPP) by World Health Organization region, World Bank region and World Bank income group

WHO regions	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
Global	2.0	123.9	1.8	116.8	1.5	103.4	1.2	89.7
African Region	3.3	21.5	1.4	10.4	1.7	14.2	1.5	14.8
Region of the Americas	0.4	3.3	0.4	3.9	0.3	3.1	0.2	1.5
Eastern Mediterranean Region	1.3	6.4	0.9	5.0	0.5	3.0	0.4	2.6
European Region	0.2	2.0	0.1	0.9	0.1	0.8	0.1	0.4
South-East Asia Region	3.2	50.8	3.6	61.9	3.0	55.2	2.8	53.0
Western Pacific Region	2.4	39.9	2.0	34.8	1.5	27.2	0.9	17.4
Non-Member States	0.6	0.1	0.3	0.1	0.2	0.0	0.2	0.1

World Bank regions	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
World	2.0	123.9	1.8	116.8	1.5	103.4	1.2	89.7
East Asia and Pacific	2.2	43.8	1.8	37.7	1.3	28.8	0.8	18.6
Europe and Central Asia	0.2	2.0	0.1	0.9	0.1	0.8	0.1	0.4
Latin America and the Caribbean	0.6	3.3	0.7	3.9	0.5	3.1	0.2	1.5
Middle East and North Africa	0.6	1.9	0.6	1.9	0.3	1.0	0.2	0.7
North America	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Asia	3.7	51.4	4.1	62.0	3.4	55.5	3.1	53.6
Sub-Saharan Africa	3.2	21.6	1.4	10.5	1.6	14.2	1.5	14.9

World Bank income groups	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
Global	2.0	123.9	1.8	116.8	1.5	103.4	1.2	89.7
High	0.1	0.6	0.1	0.5	0.1	0.7	0.0	0.4
Upper middle	0.4	2.5	0.2	1.1	1.2	28.9	0.7	18.5
Lower middle	1.9	38.6	1.6	39.3	2.4	60.2	2.2	63.2
Low	3.3	82.2	3.2	75.8	1.7	13.7	1.2	7.6

**Note:** All aggregates produced jointly by WHO and the World Bank (see Box 4). Impoverishing spending on health occurs when a household is forced by an adverse health event to divert spending from nonmedical budget items such as food, shelter and clothing to such an extent that its spending on these items is reduced below the level indicated by the poverty line. Indicators of impoverishing spending on health are not part of the official SDG indicator of universal health coverage per se, but link universal health coverage directly to the first SDG goal, namely to end poverty in all its forms everywhere. WHO and World Bank estimated values are based on standard definitions and methods to ensure cross-country comparability, which may not correspond to the methods used at regional or national level to monitor catastrophic spending on health. These estimates are based on a data availability for global monitoring, which may not necessarily align with the availability of data at national or regional levels.

**Source:** Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

## Annex 9. Incidence of impoverishment due to out-of-pocket health spending at the \$3.20 per person per day poverty line (in 2011 PPP) by World Health Organization region, World Bank region and World Bank income group

WHO regions	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
Global	1.5	93.0	1.8	118.9	1.7	119.5	1.4	98.8
African Region	1.8	12.2	1.3	9.8	1.6	13.4	1.4	13.3
Region of the Americas	0.8	6.4	0.9	7.8	0.8	7.3	0.4	4.2
Eastern Mediterranean Region	1.7	8.1	1.9	9.8	1.4	8.4	1.2	8.2
European Region	0.4	3.6	0.2	2.0	0.2	1.6	0.1	1.1
South-East Asia Region	2.0	30.8	2.9	49.6	3.4	61.3	3.3	63.6
Western Pacific Region	1.9	31.7	2.3	39.7	1.5	27.4	0.4	8.2
Non-Member States	1.0	0.2	0.8	0.1	0.7	0.1	0.4	0.1

World Bank regions	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
World	1.5	93.0	1.8	118.9	1.7	119.5	1.4	98.8
East Asia and Pacific	1.8	35.9	2.0	43.1	1.4	31.6	0.5	12.2
Europe and Central Asia	0.4	3.6	0.2	2.1	0.2	1.6	0.1	1.1
Latin America and the Caribbean	1.2	6.5	1.4	7.8	1.2	7.3	0.7	4.2
Middle East and North Africa	1.3	4.0	1.3	4.5	0.8	3.1	0.5	2.2
North America	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Asia	2.2	30.8	3.4	51.5	3.8	62.3	3.8	65.7
Sub-Saharan Africa	1.8	12.3	1.3	9.9	1.6	13.5	1.3	13.4

World Bank income groups	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
Global	1.5	93.0	1.8	118.9	1.7	119.5	1.4	98.8
High	0.1	0.9	0.1	0.9	0.1	0.9	0.1	0.7
Upper middle	0.8	5.2	0.4	2.2	1.3	31.9	0.4	10.8
Lower middle	1.7	35.2	2.0	49.5	2.8	72.0	2.8	81.6
Low	2.1	51.7	2.8	66.2	1.8	14.6	0.9	5.7

**Note:** All aggregates produced jointly by WHO and the World Bank (see Box 4). Impoverishing spending on health occurs when a household is forced by an adverse health event to divert spending from nonmedical budget items such as food, shelter and clothing to such an extent that its spending on these items is reduced below the level indicated by the poverty line. Indicators of impoverishing spending on health are not part of the official SDG indicator of universal health coverage per se, but link universal health coverage directly to the first SDG goal, namely to end poverty in all its forms everywhere. WHO and World Bank estimated values are based on standard definitions and methods to ensure cross-country comparability, which may not correspond to the methods used at regional or national level to monitor catastrophic spending on health. These estimates are based on a data availability for global monitoring, which may not necessarily align with the availability of data at national or regional levels.

**Source:** Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

### Annex 10. Incidence of impoverishment due to out-of-pocket health spending at the relative poverty line of 60% of median daily per capita consumption by World Health Organization region, World Bank region and World Bank income group

WHO regions	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
Global	1.8	110.9	1.9	126.3	2.2	151.2	2.5	183.2
African Region	1.1	7.3	1.3	9.9	1.5	12.6	1.6	15.8
Region of the Americas	1.4	11.8	1.5	13.6	1.6	14.5	1.5	14.6
Eastern Mediterranean Region	1.7	7.9	1.9	10.2	1.9	11.0	2.2	14.2
European Region	1.3	11.4	1.3	11.7	1.5	13.0	1.6	14.3
South-East Asia Region	2.3	36.3	2.2	37.3	2.3	42.1	3.1	59.7
Western Pacific Region	2.2	36.0	2.5	43.3	3.2	57.7	3.5	64.5
Non-Member States	1.3	0.2	1.4	0.2	1.5	0.3	1.5	0.3

World Bank regions	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
World	1.8	110.9	1.9	126.3	2.2	151.2	2.5	183.2
East Asia and Pacific	1.9	39.0	2.2	46.5	2.8	60.8	3.1	69.0
Europe and Central Asia	1.3	11.3	1.3	11.6	1.5	12.9	1.6	14.2
Latin America and the Caribbean	1.5	7.9	1.8	10.2	2.0	11.8	1.8	11.5
Middle East and North Africa	1.5	4.8	2.1	7.3	2.1	8.0	2.2	9.6
North America	1.3	4.0	1.1	3.5	0.8	2.8	0.9	3.1
South Asia	2.6	36.6	2.5	37.3	2.6	42.2	3.4	59.9
Sub-Saharan Africa	1.1	7.4	1.3	10.0	1.5	12.7	1.6	15.9

World Bank income groups	2000		2005		2010		2015	
	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)	% of population	Number of people (millions)
Global	1.8	110.9	1.9	126.3	2.2	151.2	2.5	183.2
High	1.3	11.2	1.3	12.9	1.6	17.8	1.4	16.5
Upper middle	1.5	9.8	1.1	7.0	2.7	65.4	2.9	76.1
Lower middle	1.9	38.5	2.2	54.4	2.1	53.7	2.8	81.6
Low	2.0	51.1	2.2	51.9	1.8	14.2	1.5	9.1

**Notes:** All aggregates produced jointly by WHO and the World Bank (see Box 4). Impoverishing spending on health occurs when a household is forced by an adverse health event to divert spending from nonmedical budget items such as food, shelter and clothing to such an extent that its spending on these items is reduced below the level indicated by the poverty line. Indicators of impoverishing spending on health are not part of the official SDG indicator of universal health coverage per se, but link universal health coverage directly to the first SDG goal, namely to end poverty in all its forms everywhere. WHO and World Bank estimated values are based on standard definitions and methods to ensure cross-country comparability, which may not correspond to the methods used at regional or national level to monitor catastrophic spending on health. These estimates are based on a data availability for global monitoring, which may not necessarily align with the availability of data at national or regional levels.

**Source:** Global database on financial protection assembled by WHO and the World Bank, 2019 update (26,27).

## Notes

1. Unless noted, all regions are UN regions; see Annex 5.
2. Both international poverty lines of \$1.90 and \$3.20 a day are expressed in 2011 PPP terms. In the rest of the chapter dollars always refer to international dollars in 2011 PPP terms.
3. In Asia, 649.1 million people incurred out-of-pocket health spending exceeding 10% of their household budget, 159.4 million incurred spending that even exceeded 25% of their household budget.
4. In 2015, 418.1 million people in lower-income countries, with out-of-pocket health spending exceeding 10% their household budget, and 95.9 million had spending that even exceeded 25% of their household budget. Low- and middle income countries had between 14.2% and 14.9% of their population with catastrophic health spending at the 10% threshold and between 3.3% and 3.5% at the 25% threshold.
5. The dispersion in the incidence of catastrophic health spending is the highest among low-income countries with an interquartile range of 12.5 percentage points and 2.9 percentage points at the 10% and 25% thresholds respectively. High-income countries follow with a dispersion at the 10% threshold of 9.7 percentage points). At the 25% threshold, variation among upper-middle-income and low-income countries is similar (about 1.6 percentage points).
6. In the African region, the number of people with catastrophic spending at the 25% threshold increased on average by 7.1% a year.
7. In the Asian region, the percentage of the population catastrophic spending at the 25% threshold increased on average by 0.1 percentage points a year.
8. In Europe, the number of people with catastrophic health spending as tracked by SDG indicator 3.8.2 increased on average by 2.8% a year over 2010–2015 at the 10% threshold, up from 1% average per year over 2005–2010, and at the 25% threshold on average by 2.2% per year, up from 0.7% a year.
9. In North America, the decline was slower in the number of people with out-of-pocket health spending exceeding 25% of the household budget at 0.02% per year over 2010–2015, down from 2.5% per year over 2005–2010.
10. In Asia, the percentage of the population with catastrophic health spending increased on average by 0.02 percentage points per year over 2005–2010 and 0.09 percentage points per year over 2010–2015.
11. At the 10% threshold, 252 million people and 10.1% of the 2000 population in low-income countries experienced catastrophic health spending, and at the 25% threshold the figures were 45 million people or 1.8%.
12. In low-income countries, at the 10% threshold, the population with catastrophic spending increased on average by 2.9% a year between 2000 and 2005 and decreased on average by 11.3% a year between 2005 and 2015; and at the 25% threshold, the population spending more than a quarter of the household budget increased on average by 9.3% a year between 2000 and 2005 and then decreased on average by 11.6% after 2005.
13. In high-income countries, the number of people spending more than 10% of the household budget increased from 46 million in 2000 to 80 million in 2015, or from 5.2% of the population to 6.9%; at the 25% threshold the population with catastrophic health spending increased from 8 million to 13 million or from 0.9% to 1.1% over 2000–2015.
14. In 2015, high-income countries also had more people than low-income countries with catastrophic health spending exceeding the 25% threshold (13 million versus 9 million) but a slightly lower percentage of the population (1.1% versus 1.5%).
15. In the most recent survey available for global monitoring, the African region population impoverished by out-of-pocket health spending at the \$1.90 a day a person poverty line was on average 1.4%; the median 1%; and the interquartile range equal to 1.5 percentage points – not population weighted.
16. In the most recent survey available for global monitoring, the Asia region population impoverished by out-of-pocket health spending at the \$3.20 a day a person poverty line was on average 1.8%; the median 0.96%; and the interquartile range equal to 2.8 percentage points – not population weighted.
17. In the most recent survey available for global monitoring, the European region population impoverished by out-of-pocket health spending at the relative poverty line of 60% of median daily per capita consumption was on average 1.8%; the median 1.7%; and the interquartile range equal to 1.2 percentage points – not population weighted.
18. Lower-middle-income countries had the highest or among the highest percentages of the population impoverished by out-of-pocket health spending at all poverty lines, and upper-middle-income countries had the highest rate of impoverishment at the relative poverty line.
19. In Asia between 2000 and 2015, 3.3% more poor people per year were pushed below the relative poverty line by out-of-pocket health spending, and their proportion of the population increased by 0.06 percentage point a year.
20. Between 2000 and 2015, in Latin America and the Caribbean, the number of people pushed below the relative poverty line by out-of-pocket health spending increased by 2.8% a year, and the percentage of the population by 0.02 percentage point a year.
21. In lower-middle-income countries, the fastest increase in the number of people and percentage of the population impoverished by out-of-pocket health spending at both the \$1.90 a day and \$3.20 a day poverty lines occurred over 2005–2010, and



- the fastest increase at the relative poverty line over 2010–2015. In upper-middle-income countries, the fastest increase in both the number of people and the percentage of the population impoverished by health spending at all poverty lines occurred over 2005–2010 (see Annexes 8–10).
22. For instance, in the most recent year for which estimates are available, the rank correlation between the percentage of the population impoverished by out-of-pocket health spending and catastrophic health spending.
  23. Examples of policies targeting women and children include the Bono Juana Azurduy in Bolivia and the Healthy Maternity Law in Guatemala.
  24. An index of service coverage was produced as the average of the following 4 actual coverage indicators from 2000 to 2015: (1) completion of four antenatal care visits, (2) in-facility delivery, (3) met need for contraceptives, (4) DTP3 vaccination coverage. Data used from DHS/MICS.
  25. Global Financing Facility countries include Afghanistan, Bangladesh, Burkina Faso, Cambodia, Côte d'Ivoire, Democratic Republic of Congo, Cameroon, Ethiopia, Guinea, Guatemala, Haiti, Indonesia, Kenya, Liberia, Madagascar, Malawi, Myanmar, Mozambique, Nigeria, Rwanda, Senegal, Sierra Leone, Tanzania, Uganda, Vietnam.
  26. At the \$1.90 a day poverty line, when excluding both India and China with the current estimation approach the decline between 2010 and 2015 is marginal (–.11 percentage points per year versus –5.4 percentage points when they are included) leading to an expected marginal increase in the number of people impoverished by out-of-pocket health spending between 2010 and 2015 as opposed to the estimated reduction when these two countries are included. This is to be expected as the global trend is driven by the Asia region and these two countries account for a predominant share of the overall population in such region.

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