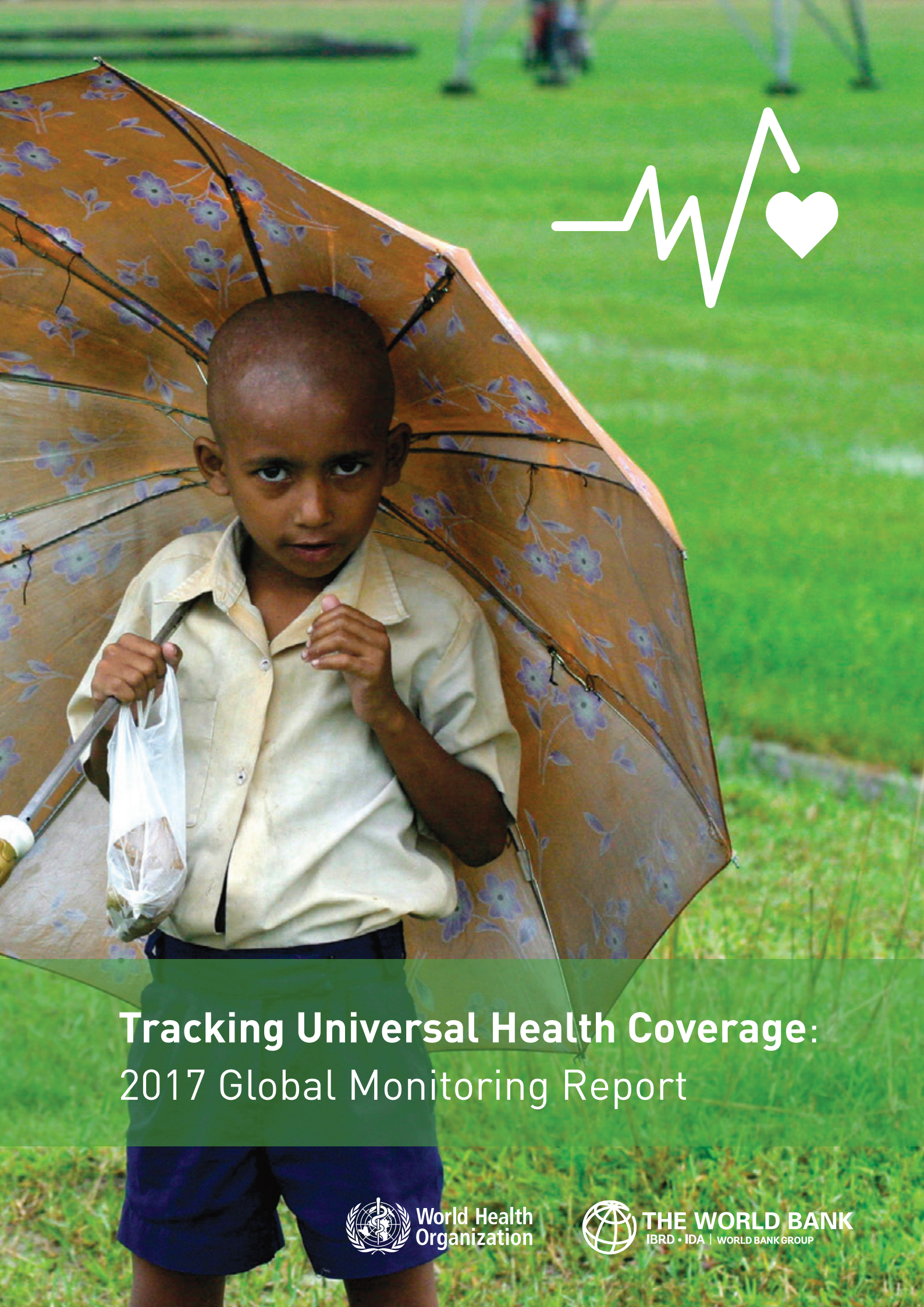

Tracking Universal Health Coverage:
2017 Global Monitoring Report

World Health Organization

THE WORLD BANK
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PREFACE

This year's joint Universal Health Coverage Monitoring Report is being published at a crucial moment. Never before has there been as much political momentum for universal health coverage as there is right now. And never before has there been greater need for commitment to health as a human right to be enjoyed by all, rather than a privilege for the wealthy few.

Ensuring that all people can access the health services they need – without facing financial hardship – is key to improving the well-being of a country's population. But universal health coverage is more than that: it is an investment in human capital and a foundational driver of inclusive and sustainable economic growth and development. It is a way to support people so they can reach their full potential and fulfil their aspirations.

This is why we, as the leaders of the World Bank Group and the World Health Organization, have made the achievement of universal health coverage a priority for both our institutions. Part of that commitment is this joint 2017 UHC Global Monitoring Report.

The report reveals that at least half the world's population still lacks access to essential health services. Furthermore, some 800 million people spend more than 10 per cent of their household budget on health care, and almost 100 million people are pushed into extreme poverty each year because of out-of-pocket health expenses.

This is unacceptable.

But what gives us hope is that countries across the income spectrum are leading and driving progress towards UHC, recognizing that it is both the right and the smart thing to do.

We are also encouraged that – although data availability and analysis are still a challenge – most countries are already generating credible and comparable data on health coverage. We would like to acknowledge the role of the Organisation for Economic Co-operation and Development (OECD) and the United Nations Children's Fund (UNICEF) in making this happen.

Our data have revealed major gaps. The more we know about those gaps – and how different countries are bridging them – the closer we come to identifying what we must do to improve health coverage.

But if the world is serious about meeting its goal of achieving Universal Health Coverage by 2030, we all need to be far more ambitious.

To this end, the World Bank Group and the World Health Organization are committed to working with countries to increase access to essential health services, ensure that people don't fall into poverty because of health expenses, and move closer to our goal of Universal Health Coverage by 2030. That won't be easy, but it's possible. We are ready to make it happen.

Jim Yong Kim
President
The World Bank Group

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Wagstaff A, Flores G, Smitz M-F, Hsu J, Chepynoga K and Eozenou P. Progress on impoverishing health spending: results for 122 countries. A retrospective observational study. Lancet Global Health. 2017. DOI: http://dx.doi.org/10.1016/S2214-109X(17)30486-2

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EXECUTIVE SUMMARY

Introduction

A number of the 17 Sustainable Development Goals (SDGs) adopted by the United Nations General Assembly in September 2015 have targets that relate to health. However, one goal – SDG 3 – focuses specifically on ensuring healthy lives and promoting well-being for all at all ages. Target 3.8 of SDG 3 – achieving universal health coverage (UHC), including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all – is the key to attaining the entire goal as well as the health-related targets of other SDGs.

Target 3.8 has two indicators – 3.8.1 on coverage of essential health services and 3.8.2 on the proportion of a country's population with catastrophic spending on health, defined as large household expenditure on health as a share of household total consumption or income. Both must be measured together to obtain a clear picture of those who are unable to access health care and those who face financial hardship due to spending on health care. Since the SDGs aim to "leave no one behind", indicators should be disaggregated by income, sex, age, race, ethnicity, disability, location and migratory status, wherever data allow. This report presents the results of the latest efforts to monitor the world's path towards UHC.

Service coverage

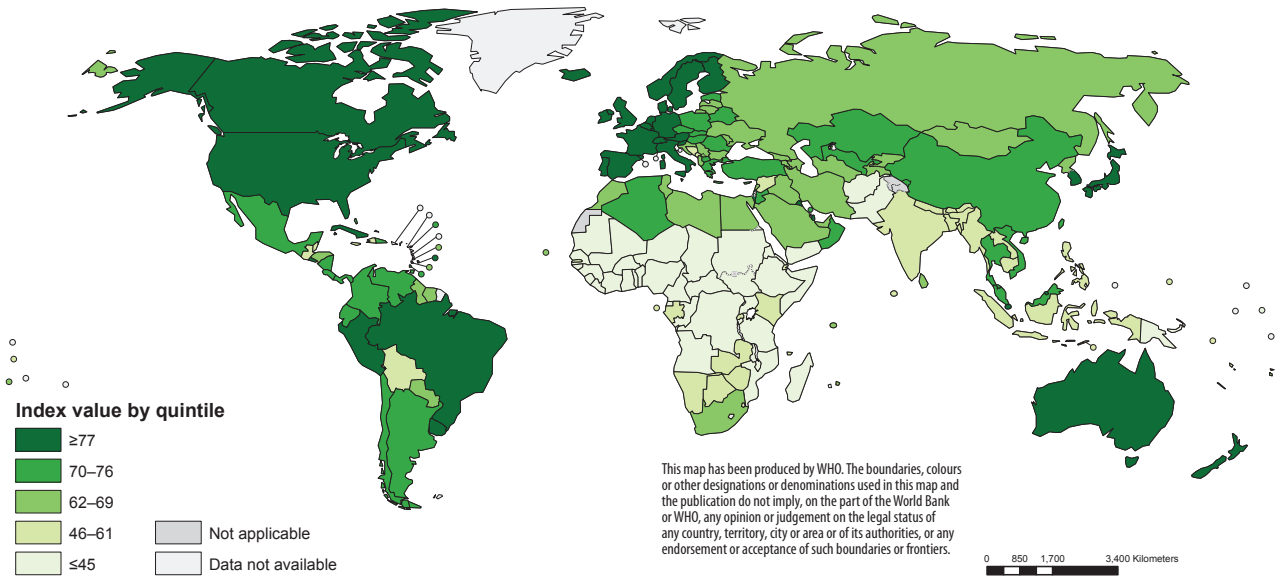
Monitoring coverage of essential health services

Progress towards UHC is a continuous process that changes in response to shifting demographic, epidemiological and technological trends, as well as people's expectations. The goal of the service coverage dimension of UHC is that people in need of promotive, preventive, curative, rehabilitative or palliative health services receive them, and that the services received are of sufficient quality to achieve potential health gains. A UHC service coverage index – a single indicator computed from tracer indicators of coverage of essential services – was developed to monitor SDG indicator 3.8.1. For the first time, this report presents methods and baseline results for 183 countries for the index. The UHC service coverage index is straightforward to calculate, and can be computed with available country data, which allows for country-led monitoring of UHC progress.

The levels of service coverage vary widely between countries (Fig. 1). As measured by the UHC service coverage index, it is highest in East Asia (77 on the index) and Northern America and Europe (also 77). Sub-Saharan Africa has the lowest index value (42), followed by Southern Asia (53). The index is correlated with under-five mortality rates, life expectancy and the Human Development Index. Moving from the minimum index value (22) to the maximum value (86) observed across countries is associated with 21 additional years of life expectancy, after controlling for per capita gross national income and mean years of education among adults.

Coverage of essential services has increased since 2000. Time trends for the UHC service coverage index are not yet available, but average coverage for a subset of nine tracer indicators used in the index with available time series increased by 1.3% per annum, which is roughly a 20% increase from 2000 to 2015. Among these nine tracer indicators, the most rapid rates of increase were seen in coverage of antiretroviral treatment for HIV (2% in 2000 to 53% in 2016) and use of insecticide-treated nets for malaria prevention (1% in 2000 to 54% in 2016). Nevertheless, there is still a long way to go to achieve UHC. Although data limitations preclude precise measurement of the number of people with adequate service coverage, it is clear that at least half of the world's population do not have full coverage of essential services. Considering selected health services, over 1 billion people have uncontrolled hypertension, more than 200 million women have inadequate coverage for family planning, and nearly 20 million infants fail to start or complete the primary series of diphtheria, tetanus, pertussis (DTP)-containing vaccine, with substantially more missing other recommended vaccines.

Fig. 1. UHC service coverage index by country, 2015: SDG indicator 3.8.1



SDG: Sustainable Development Goal; UHC: universal health coverage.

Equity

Because of the lack of data, it is not yet possible to compare the UHC service coverage index across key dimensions of inequality. Until these data gaps are overcome, inequalities in service coverage can be assessed by looking at a narrower range of service coverage indicators, in particular for maternal and child health interventions. For a set of seven basic services for maternal and child health, only 17% of mothers and infants in households in the poorest wealth quintile in low-income and lower-middle-income countries in 2005–2015 received at least six of the seven interventions, compared with 74% in the richest quintile.

Considering changes in large gaps in coverage over time, the median percentage of mother-child pairs that received less than half of seven basic health services declined between 1993–1999 and 2008–2015 across all wealth quintiles for 23 low- and lower-middle-income countries with available data. Absolute reductions were larger in poorer wealth quintiles, and therefore absolute inequalities were reduced between these two time periods.

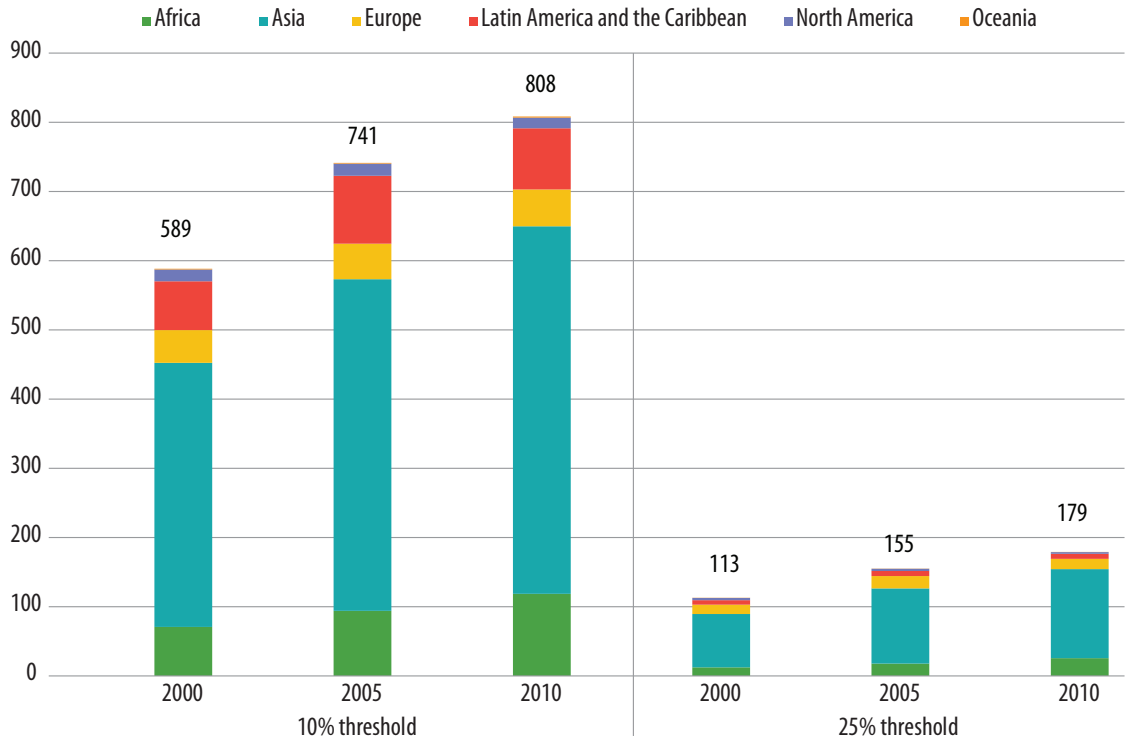
Unless health interventions are designed to promote equity, efforts to attain UHC may lead to improvements in the national average of service coverage while inequalities worsen at the same time. Gaps in service coverage remain largest in the poorest quintile, which reinforces the importance of structuring health services so that no one is left behind.

Financial protection

Many families worldwide suffer undue financial hardship as a result of receiving the health care that they need. UHC efforts in this area focus on two issues: "catastrophic spending on health", which is out-of-pocket spending (without reimbursement by a third party) exceeding a household's ability to pay; and "impoverishing spending on health", which occurs when a household is forced by an adverse health event to divert spending away 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.

The incidence of catastrophic spending on health is reported on the basis of out-of-pocket expenditures exceeding 10% and 25% of household total income or consumption. This is the approach adopted for the SDG monitoring framework. Across countries, the mean incidence of catastrophic out-of-pocket payments at the 10% threshold is 9.2%. Incidence rates are inevitably lower at the 25% threshold with a mean of 1.8%. At the global level (Fig. 2),it is estimated that in 2010, 808 million people incurred out-of-pocket health payments exceeding 10% of household total consumption or income, (some 11.7% of the world's population), and 179 million incurred such payments at the 25% threshold (2.6% of the population).

Fig. 2. Global and regional trends in catastrophic payments: SDG indicator 3.8.2



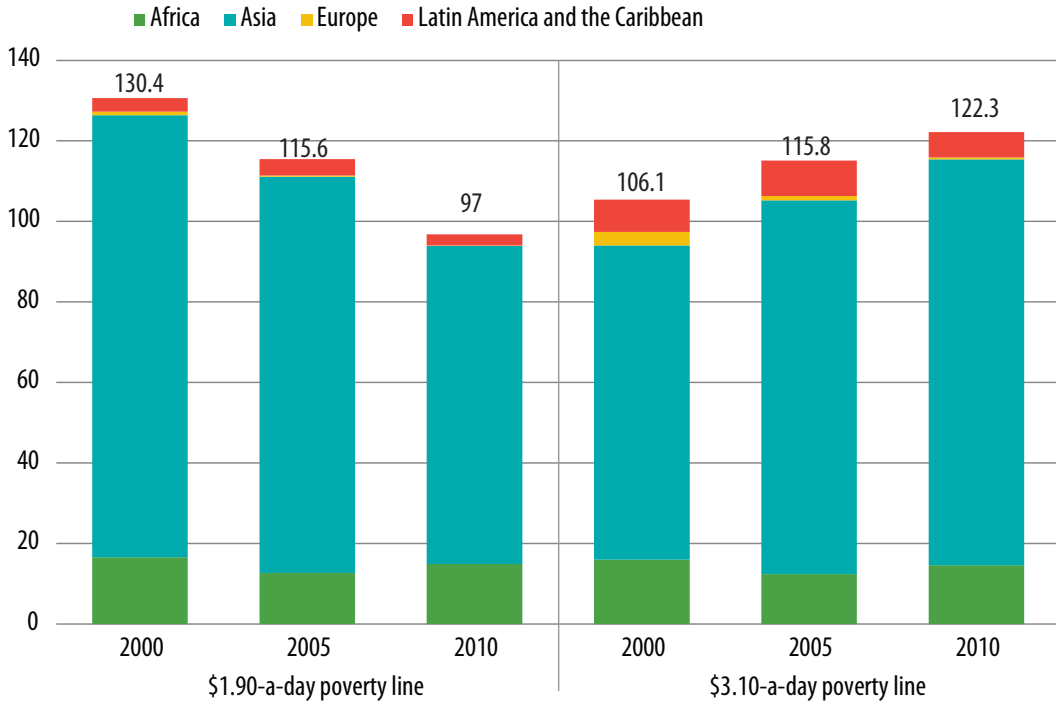
In 2010, Latin America and the Caribbean was the region with the highest rate at the 10% threshold (14.8%). Asia had the second-highest rate (12.8%) and was the region where most people facing catastrophic payments are concentrated. Both the percentage and the size of the global population facing catastrophic payments have increased at all thresholds since 2000. At the 10% threshold, the region with the fastest increase in population facing catastrophic payments is Africa (+5.9% per year on average) followed by Asia (+3.6% per year). North America is the only region where both the incidence and the population exposed have decreased (–0.9% per year).

While monitoring SDG indicators of catastrophic expenditures is important, it is not the only way in which progress can be monitored, nor is it sufficient on its own to fully understand the picture as countries strive to provide financial protection. Catastrophic payments can be measured in different ways. In addition, financial protection can also be measured using metrics other than catastrophic spending. So, this report also provides global and regional results using complementary measures of financial protection.

Indicators of impoverishing spending on health are not part of the official SDG indicator of universal health coverage per se, but they link UHC directly to the first SDG goal, namely to end poverty in all its forms everywhere. These indicators are based on international poverty lines – specifically 1.90 a day international dollars using 2011 purchasing power parity (PPP) for extreme poverty and 2011 PPP 3.10 a day international dollars for moderate poverty. This report measures the incidence of impoverishment as the difference between the number of people in poverty with out-of-pocket spending included in household total consumption or income, and the number without.

An estimated 97 million people were impoverished on health care at the 2011 PPP $ 1.90-a-day poverty line in 2010, equivalent to 1.4% of the world's population. At the 2011 PPP $ 3.10-a-day poverty line, the figure is 122 million (1.8%). At these two international poverty lines impoverishment rates in upper-middle-income countries and high-income countries are close to or equal to zero. At the 2011 PPP $ 1.90-a-day poverty line, the number and percentage of people globally impoverished fell between 2000 and 2010 from 130 million (2.1%) to 97 million (1.4%). By contrast, at 2011 PPP $ 3.10-a-day, both the percentage and number of people impoverished increased from 106 million (1.7%) to 122 million (1.8%), (Fig. 3).

Fig. 3. Global and regional trends in impoverishment due to out-of-pocket payments: $1.90-a-day and $3.10-a-day poverty lines



In 2010, Asia and Africa had the highest rates of impoverishment at the 2011 PPP $ 1.90-a-day poverty line (1.9% and 1.4% respectively). Between 2000 and 2010, Africa saw reductions in the incidence of impoverishing spending on health at both the 2011 PPP $ 1.90 and 2011 PPP $ 3.10 lines, while Asia saw a marked reduction at the 2011 PPP $ 1.90 line and an increase at the 2011 PPP $ 3.10 line.

The report also focuses on the depth of poverty, taking into account the monetary impact of out-of-pocket payments on those pushed, and further pushed, into poverty due to spending on health.

Note that a low incidence of catastrophic or impoverishing spending on health could result from people being protected from financial hardship, but it could also result from people not getting the care they need because they cannot access it or because they cannot afford it. Financial protection always needs to be jointly monitored with service coverage.

Monitoring UHC in the SDG era

The monitoring efforts in this report relate directly to one of the defining characteristics of the SDGs: promoting accountability by encouraging countries to commit to reporting of their progress. Most of the data provided in the following pages have been subject to an official consultation with World Health Organization (WHO) Members States carried out in 2017. Countries are the main actors in monitoring and evaluation, and national ownership is key to the success of achieving the SDGs. Each country's process of monitoring and evaluation will take account of national and potentially subnational priorities. Countries can also contribute to regional SDG monitoring frameworks. It is hoped that by developing metrics and reporting internationally comparable data, this report may encourage countries and regions to refine and tailor them to their local circumstances.

As the data show in this report, the process is fraught with challenges, not just in reaching the targets themselves, but also in terms of measuring progress towards them. The road to UHC is long, but the global commitment to achieving and measuring it is underway.

INTRODUCTION

The goal of universal health coverage (UHC) is to ensure that every individual and community, irrespective of their circumstances, should receive the health services they need without risking financial hardship. In the last 10 years or so, calls for increased efforts to achieve UHC have grown noticeably. In a September 2017 *Lancet Global Health* editorial, Tedros Adhanom Ghebreyesus, Director-General of the World Health Organization (WHO), called UHC an ethical question, asking: "Do we want our fellow citizens to die because they are poor?" *(1)*.

Jim Yong Kim, President of the World Bank Group, addressing the May 2013 World Health Assembly said: "We can bend the arc of history to ensure that everyone in the world has access to affordable, quality health services in a generation" *(2)*. And as WHO's 2010 World Health Report, *Health systems financing: the path to universal coverage* shows, countries across the world have for some time been heeding the call and implementing reforms geared to accelerating progress towards UHC *(3)*.

The momentum behind UHC was reflected in the United Nations General Assembly (UNGA) decision of September 2015 to adopt health as one of the 17 sustainable development goals (SDGs) *(4)* and UHC as an SDG health target (SDG 3.8: "achieve universal health coverage, including financial risk protection ..."). The UHC target lies at the core of the other 12 health targets, and the health goal itself is closely interlinked with the other 16 SDGs, in some cases making inputs into them and in others being dependent on their progress for its attainment (Fig. 1).

Fig. 1. Health is central to the SDG agenda

Box 1. Definitions of UHC, SDG target 3.8, and SDG indicators 3.8.1 and 3.8.2

Universal health coverage means that all people receive the health services they need, including public health services designed to promote better health (such as anti-tobacco information campaigns and taxes), prevent illness (such as vaccinations), and to provide treatment, rehabilitation and palliative care (such as end-of-life care) of sufficient quality to be effective, while at the same time ensuring that the use of these services does not expose the user to financial hardship *(12)*.

SDG target 3.8: Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.

SDG indicator 3.8.1: Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health; infectious diseases; noncommunicable diseases; and service capacity and access; among the general and the most disadvantaged population).

SDG indicator 3.8.2: Proportion of population with large household expenditures on health as a share of total household expenditure or income.

It was not until July 2017 that the UNGA adopted specific indicators for measuring the SDGs, including UHC (SDG target 3.8). These were based on the recommendations of the United Nations (UN) Inter-agency and Expert Group (IAEG) on Sustainable Development Goal Indicators, composed of national statisticians from 27 countries *(5)*. In the case of SDG target 3.8, the IAEG found a high degree of consensus among technical experts, civil society, national governments and UN agencies, thanks to a consultative process spanning 2013 and 2014 involving all relevant experts and stakeholders *(6–8)*.

This process on UHC monitoring built on a collaborative effort by WHO and the World Bank, announced at the February 2013 WHO-World Bank ministerial level meeting on universal health coverage *(9)*, to develop a monitoring framework to support countries in tracking their progress towards the goal of UHC. This work led to the publication of a discussion paper in December 2013 *(10)*, and the launch in 2014 of the WHO-World Bank global monitoring framework for UHC *(7, 8)*.

In their 2017 declaration, the G20 ministers of health invited "the WHO to identify appropriate indicator frameworks and to monitor progress on HSS [health systems strengthening] and UHC worldwide, working jointly with the World Bank, the OECD and other relevant stakeholders" *(11)*.

The framework used in this report builds on two SDG UHC indicators:

- 3.8.1 which captures the population coverage dimension of UHC (that everyone – irrespective of their living standards – should receive the health services they need); and
- 3.8.2 which captures the financial protection dimension of UHC (use of health services should not lead to financial hardship) (Box 1).

Both indicators must be measured together to capture the complete picture, and in particular not to miss those who are unable to access health care at all (and therefore do not pay for it at the point of use), and those who receive low-quality care *(12)*. WHO is the designated custodian agency for both SDG 3.8 indicators, with the United Nations Children's Fund (UNICEF), United Nations Population Fund (UNFPA) and United Nations Department of Economic and Social Affairs (UN DESA) Population Division as partner agencies for 3.8.1 and the World Bank for 3.8.2.

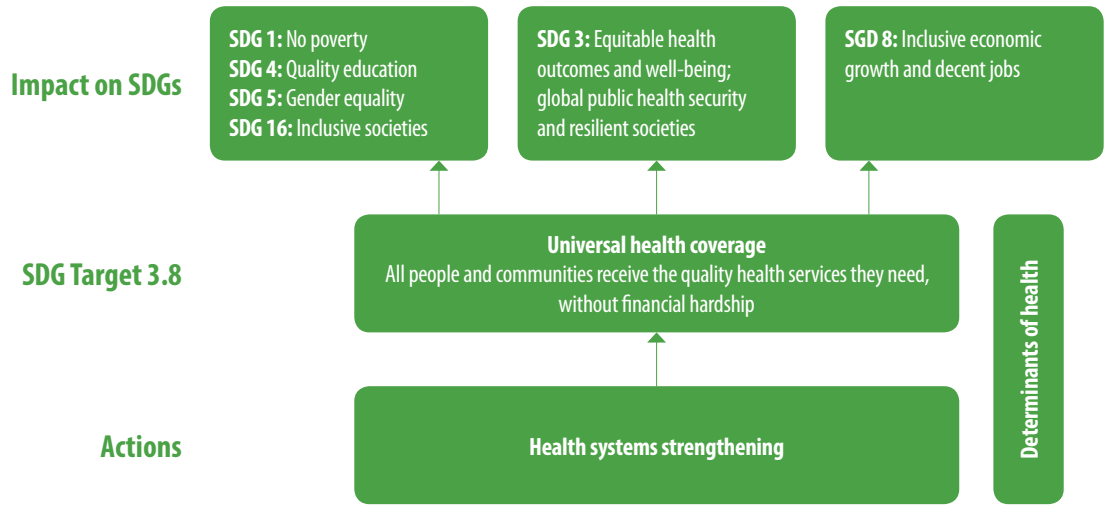
Equity is key to the SDGs in general and to UHC specifically, requiring as it does that everyone – irrespective of their circumstances – gets the services they need without experiencing financial hardship *(12)*. To measure UHC, it is therefore necessary to assess not only access to use of health services and the direct cost of care for a country's population overall, but also that different segments of the population, particularly the most disadvantaged, are not left behind – in line with the SDG spirit. This has led to an increased emphasis on monitoring distributions across dimensions of inequality, as well as averages. Accordingly, SDG goal indicators are to be disaggregated by income, sex, age, race, ethnicity, disability, geographical location and migratory status, as applicable *(5)*.

What UHC does and does not mean

UHC means that everyone – irrespective of their living standards – receives the health services they need, and that using health services does not cause financial hardship.

Progress towards UHC means that more people – especially the poor, who are currently at greatest risk of not receiving needed services – get the services they need. Implicit in the definition of UHC is that the services are high quality, meaning that people are diagnosed correctly

Fig. 2. Investing in health systems to reach UHC and the SDGs



Source: adapted from Kieny et al., 2017 WHO Bulletin *(13)*.

and receive the interventions currently agreed to be necessary. Progress towards UHC means a lowering of barriers to seeking and receiving needed care: for example, out-of-pocket payments, distance, poorly equipped facilities and poorly trained health workers.

But UHC also means that getting needed health services is associated less and less with financial hardship; that people receiving health services are still able to afford food and other necessities, and do not place their families at risk of poverty by getting the care they need.

UHC does not mean that health care is always free of charge, merely that out-of-pocket payments are not so high as to deter people from using services and causing financial hardship. Nor is UHC solely concerned with financing health care. In many poorer countries, lack of physical access to even basic services remains an enormous problem. Health systems have a role to play in achieving progress towards UHC. Health systems strengthening – enhancing financing but also strengthening governance, the organization of the health-care workforce, service delivery, health information systems and the provision of medicines and other health products – is central to progressing towards UHC (Fig. 2).

The 2017 global monitoring report on progress towards UHC

This joint report by the World Bank and World Health Organization on progress towards UHC is the second in the series. The first, launched in December 2015 *(12)*, shortly after the adoption of UHC as an SDG target, built on nearly three years' worth of collaborative work between WHO and the World Bank, dating back to the February 2013 WHO-World Bank ministerial-level meeting on universal health coverage, and leading to the joint WHO-World Bank global monitoring framework for UHC which underpinned the first global monitoring report *(7–9)*.

This report comes shortly after the UNGA's adoption of the two specific UHC indicators 3.8.1 and 3.8.2 earlier in 2017, and therefore places a strong emphasis on their measurement. Initial analyses on, or in support of, these indicators were reported in the first global monitoring report, but are given greater prominence here *(12)*.

In the 2015 report *(12)*, a set of individual tracer indicators were used to paint a picture of the coverage of essential services, while in the current report an index is computed from tracer indicators to summarize the coverage of essential services using one number, consistent with the definition of SDG indicator 3.8.1. On financial protection, this report expands the geographical scope considerably. Whereas the 2015 report was based on financial protection data from 37 countries covering less than 20% of the world's population, the current report draws on data from 132 countries representing over 90% of the world's population.

While the two UHC SDG indicators are important, they are a subset of the indicators used to monitor progress towards UHC and part of a broader UHC monitoring agenda, which draws on a wider range of established indicators, often tailored to specific regions and countries. This report, goes beyond the official SDG UHC indicators. Thus, in addition to reporting on 'catastrophic' out-of-pocket expenditures (SDG 3.8.2), the report also reviews

progress towards reducing impoverishment due to out-of-pocket expenditures. This second aspect of financial protection is not an official SDG indicator for UHC, but it links directly to the very first SDG goal, namely to end poverty in all its forms everywhere.

The monitoring efforts in this report relate directly to one of the defining characteristics of the SDGs: promoting accountability by encouraging countries to commit to reporting their progress. Most of the data provided in the following pages have been subject to an official consultation with WHO Member States carried out in 2017. Countries are the main actors in monitoring and evaluation, and national ownership is key to the success of achieving the SDGs. Each country's process of monitoring and evaluation will take account of national and potentially subnational priorities. Countries can also contribute to regional SDG monitoring frameworks. It is hoped that by developing metrics and reporting internationally comparable data, this report may encourage countries and regions to refine and tailor them to their local circumstances.

As the subsequent pages show, the process is fraught with challenges, not just in reaching the targets themselves, but also in terms of measuring progress towards them. The road to UHC is long, but the global commitment to achieving and measuring it is underway.

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CHAPTER 1

COVERAGE OF ESSENTIAL HEALTH SERVICES

Progress towards UHC is a continuous process that changes in response to shifting demographic, epidemiological and technological trends, as well as people's expectations. The goal of the service coverage dimension of UHC is that people in need of promotive, preventive, curative, rehabilitative or palliative health services receive them, and that the services received are of sufficient quality to achieve potential health gains.

Resource constraints mean that countries cannot provide all health services, but all countries should be able to ensure coverage of essential health services. This section presents methods and SDG baseline results for an index, which aims to summarize the coverage of essential health services with a single number, as well as estimates of gaps in service coverage and more detailed analyses of levels and trends in a subset of service coverage indicators by key dimensions of inequality.

Health service coverage: Key findings

- **Levels of service coverage vary widely across countries.** The UHC service coverage index has a value of 64 (out of 100) globally, with values ranging from 22 to 86 across countries in 2015. As measured by the index, coverage of essential services is highest in the SDG regions of Eastern Asia (77) and Northern America and Europe (77), whereas sub-Saharan Africa has the lowest index value (42), followed by Southern Asia (53).

- **High index values are associated with high life expectancy, even after controlling for national income and education.** The index is correlated with under-5 mortality rates (ρ=-0.86), life expectancy (ρ=0.88), and the Human Development Index (ρ=0.91). Moving from the minimum index value (22) to the maximum index value (86) observed across countries is associated with 21 additional years of life expectancy after controlling for gross national income per capita and mean years of adult education.

- **At least half of the world's population does not have full coverage with essential health services…** Precisely estimating this number is challenging, but based on a set of plausible sensitivity analyses, the number of people who are covered with most essential services ranged from 2.3 to 3.5 billion in 2015. This implies that at least half of the world's 7.3 billion people do not receive the essential health services they need.

- **…with substantial unmet need for a range of specific interventions.** For example, more than 1 billion people live with uncontrolled hypertension; more than 200 million women have inadequate coverage for family planning; and almost 20 million infants fail to start or complete the primary series of DTP-containing vaccine, with substantially more missing other recommended vaccines.

- **Coverage of essential services has increased since 2000.** Time trends for the UHC service coverage index are not yet available, but average coverage for a subset of nine tracer indicators used in the index with available time series increased by 1.3% per annum, which is roughly a 20% relative increase from 2000 to 2015. Among these tracer indicators, the most rapid rates of increase were seen in coverage of antiretroviral treatment for HIV (2% in 2000 to 53% in 2016) and use of insecticide-treated nets for malaria prevention (1% in 2000 to 54% in 2016).

- **Despite progress, large inequalities in basic maternal and child health services in low- and lower-middle-income countries persist.** Absolute wealth inequalities in the coverage of seven basic maternal and child health services have declined; however, only 17% of those in households in the poorest wealth quintile in low- and lower-middle-income countries received at least six of seven basic interventions, as compared with 74% in the wealthiest quintile.

Key measurement concepts

Effective service coverage

Effective service coverage is defined as the proportion of people in need of services who receive services of sufficient quality to obtain potential health gains *(1)*. Effective coverage indicators capture a country's efforts to meet people's needs for quality health services, and are the preferred indicators for monitoring the service coverage dimension of UHC. As an example, an indicator of effective coverage of treatment for HIV should measure not just whether an individual is receiving antiretroviral therapy, but also whether her viral load is suppressed. Unfortunately, for many important health areas, indicators of effective coverage are not widely available, either due to lack of investment in data collection or difficulties around defining an operational indicator for a particular health service. In these cases, other indicators associated with effective coverage must be used.

Service coverage

Indicators of service coverage, which is defined as the proportion of people in need of a service that receive it, regardless of quality, are more commonly measured than effective coverage indicators. For example, the number of antenatal care visits can be ascertained by self-report in a survey, but determining the quality of care received during those visits is more challenging. In the absence of information on effective coverage, these indicators are often used for monitoring the coverage of health services, at the expense of capturing information on the quality of the services received. There is not always a definitive line separating effective service coverage and service coverage for a given health service, and therefore in some cases which label to use for an indicator may not be clear. This report often uses 'service coverage' as short-hand for both.

Tracer indicators

Countries will provide a wide range of services as they progress towards UHC. It is not practical to monitor indicators for all of these services; therefore a manageable subset of indicators was chosen to represent overall coverage *(1, 2)*. Tracer indicators were selected based on several criteria, which are discussed in more detail below. It is important to note that these tracer indicators are not a recommended basket of services; rather they are chosen to capture the breadth of health services within UHC in a measurable way.

Proxy indicators

For several important health areas, including NCDs, mental health, surgical and emergency care, as well as routine health examinations, robust indicators of service coverage are not always available. In these cases, proxy indicators must be used to reflect these important areas. Proxy indicators are correlated with the provision of health services to those in need, and may be 'upstream' or 'downstream' of (effective) service coverage. Indicators of capacity, access or service utilization are upstream – they represent either the availability of services for those in need or the rate of use of such services, without providing information about the proportion of people in need of a particular service that actually receive it. In the other direction, 'downstream' indicators such as the prevalence of a risk factor or mortality rate of a disease or injury reflect the impact of service coverage, but are also a function of other factors that may be outside the control of the health system, such as a country's wealth or average education level.

Index of essential health services

The UHC service coverage index is a single indicator that is computed based on tracer indicators (some of which are proxies of service coverage) to monitor coverage of essential health services. Essential health services are services that all countries, regardless of their demographic, epidemiological or economic profile, are expected to provide. This is what is intended by the definition of SDG indicator 3.8.1, which is:

> Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, noncommunicable diseases and service capacity and access, among the general and the most disadvantaged population).

There are a number of methodological choices that must be made when constructing an index, including the selection of tracer indicators and the calculations used to combine them into a final index value. There are a number of examples of indexes meant to summarize population health *(3–5)*, including for UHC *(6–8)*, which often draw inspiration from the Human Development Index. For the first time, this report and accompanying journal article *(9)* operationalizes a measure of SDG indicator 3.8.1 on the coverage of essential health services, presenting methods and baseline results for 183 countries. The UHC service coverage index is straightforward to calculate, and can be computed with available country data, which allows for country-led monitoring of UHC progress.

Inequalities in service coverage

Inequalities in service coverage can be summarized by calculating coverage levels in different subpopulations, for example by household wealth quintiles, educational attainment, geographical region, age and sex. It is important to measure coverage across key dimensions of inequality since national averages can mask low coverage levels in disadvantaged population groups.

Operationalizing SDG indicator 3.8.1: an index of essential health services

Guiding principles

The index was developed as part of a multi-year process that included global reviews, country case studies, consultations with ministry of health officials, and a formal WHO country consultation with Member States in 2017 *(1, 2, 10–15)*. The development of the index followed four guiding principles, not all of which are fully achievable given current data availability. The first guiding principle concerned the preference for measures of effective service coverage. Second, in line with the definition of UHC, the index should include indicators for different types of services, namely: prevention, comprising health promotion and illness prevention, as well as indicators for treatment, comprising curative services, rehabilitation and palliation *(2)*. Note, this includes public health services and interventions that are not implemented by the health sector but which have health improvement as a key motivation *(1)*. Third, the index should cover all main health areas of reproductive, maternal, newborn and child health (RMNCH), infectious diseases, noncommunicable diseases and injuries. Following the definition of SDG 3.8.1, four categories of indicators were established: RMNCH, infectious diseases, noncommunicable diseases, service capacity and access. Lastly, the index should be disaggregated by key inequality dimensions.

Criteria for tracer indicators

In each of the four categories described by the definition of SDG 3.8.1, tracer indicators were selected based on several criteria *(2)* and ensuring that within each category the indicators reflect a range of programme service delivery strategies. First, an indicator should be relevant, reflecting epidemiological burden and the presence of cost-effective interventions. Second, it must also be feasible, with current, comparable data available for most countries, which ideally can be disaggregated for equity analysis. Third, an indicator should be conceptually sound, with a measurable numerator and denominator, a clear target and ideally, a definition that captures effective coverage *(16)*. Lastly, an indicator should be usable, in the sense it is easy to communicate: indicators that are already reported across countries, including those in the SDG monitoring framework, are appealing as they reduce reporting burden.

Identifying indicators that fulfil these criteria is challenging (Box 1.1 and Box 1.2), and few of the selected indicators fulfil all criteria. The greatest challenge is lack of available data for indicators of service coverage. These data limitations motivate the use of proxy indicators, in particular for NCD treatment coverage, and by definition within the service capacity and access category. Use of proxy indicators ensures that the first two criteria, relevance and feasibility, are met for all indicators.

Box 1.1. Challenges of monitoring effective service coverage

There are three key challenges associated with monitoring effective service coverage, which is defined as service coverage that results in the maximum possible health gains. The first challenge is accurate measurement of the population in need of the service. Administrative records from service providers and self-reported prior diagnosis are often unreliable sources of information, as those who do not have access to health services remain undiagnosed. A full assessment of population need requires alternative sources of data, such as a set of survey questions or biomarkers collected in a household health examination survey. Because few conditions requiring treatment can be diagnosed in this way, this substantially limits the set of effective coverage indicators that may be reliably monitored.

Determining effectiveness of service coverage – that is, the degree to which services result in health improvement – is a second challenge (a comprehensive discussion of measuring quality is discussed in Box 1.2). For some indicators, it is possible to directly measure quality of care. For example, monitoring of treatment for hypertension can include measurement of whether hypertension is effectively controlled, and monitoring of cataract surgical coverage can include measurement of current visual acuity *(17)*. However, generally speaking, measuring effectiveness of care is more complicated than measuring service provision.

The third key challenge is to monitor equity in access to quality health services. Making sure that no one is left behind as countries strive for UHC requires access to data disaggregated by inequality dimensions, such as wealth or geographical location. Disaggregated data are commonly available for RMNCH interventions, malaria prevention, and water and sanitation services in low- and middle-income countries, but may not be available for other health topics and indicators required for UHC monitoring. Therefore, investments are needed in data collection, especially for conducting regular household health examination surveys and developing electronic and harmonized facility reporting systems. In addition, it is crucial to build capacities for analysing and reporting health inequality data. Only then can countries tie this information to the policies they are implementing to improve health equity.

Box 1.2. Measuring quality of care

Measurement of health-care quality begins with understanding what is meant by quality, which is a multifaceted concept *(18)*. The Health Care Quality Indicators project, initiated in 2001 by the OECD, which aims to develop and report common indicators for international comparisons *(19)*, has distilled quality to three main dimensions: effectiveness, patient safety, and responsiveness/people-centredness *(19, 20)*. In countries with well-developed health information systems, data for monitoring are often derived from administrative reporting systems; in contrast, in low- and middle-income countries, such data are typically unavailable or unreliable, and instead specialized studies may be carried out.

Effectiveness
Effective service coverage is defined as service coverage that results in the desired health gains. The WHO/World Bank monitoring framework has focused on integrating health service effectiveness into monitoring tracer coverage indicators whenever possible (see Box 1.1 on monitoring challenges), but has also recognized that effectiveness may be measured by using indicators other than coverage *(2, 10)*. One approach takes the form of monitoring exposure to health risks, such as uncontrolled blood pressure, or health status as a proxy for effective coverage.

Many researchers have assessed health systems performance on the basis of mortality that should not have occurred if effective care were provided *(21–25)*. Such data reflect both health promotion and provision of effective personal health care, but also factors outside the health system, such as environmental, social and economic influences. In addition, high-quality data on mortality by cause of death are not available for many low- and middle-income countries.

Another way to measure effectiveness of care is to assess providers' medical practice using medical vignettes (hypothetical cases that the provider 'treats') or standardized patients (actors recruited from the local community trained to present the same condition to multiple providers who are blinded from the study). For the conditions that have been studied, the standardized patient research consistently shows that less than half of patients receive what they needed for their condition, and typically less than 5% receive what they needed without additional and unnecessary medications, including antibiotics *(26–27)*.

Patient safety
Patient safety is concerned with avoiding injuries to people who receive care. The OECD has identified two types of patient safety indicators: frequency of '*never*' events that should never occur, such as failure to remove surgical foreign bodies at the end of a surgery; and frequency of '*adverse*' events such as obstetric trauma, which can be reduced but not eliminated *(28)*. Both types of indicators rely upon reporting mechanisms that are best-developed in some high-income countries. The OECD acknowledges that higher adverse event rates may simply signal more developed monitoring systems and a stronger patient safety culture, rather than worse care *(28)*. In the absence of such reporting systems, the World Bank has recently tested a different approach, conducting a specialized study that observes medical practice; for instance, whether proven infection prevention and control actions are correctly carried out *(29)*.

Responsiveness/people-centredness
This dimension of quality comprises patient experiences (providing care that responds to individual preferences, needs and values) and integratedness (seamless, continuous and holistic care, tailored to the patient's needs) *(19, 20)*. These are generally measured by interviewing patients about their health-care experiences, for example whether explanations provided by doctors were easy to understand. It is also important to note that what a patient perceives as good health care might not correspond to effective health care *(30)*. There is also concern that participation in patient satisfaction surveys can be biased by language and cultural barriers *(31)*. The research from low-income countries typically shows very high levels of patient satisfaction, making the data hard to interpret *(32)*.

Selected tracer indicators

Sixteen tracer indicators were selected, four for each of the four categories specified by the definition of SDG indicator 3.8.1. Data availability was a major consideration in the final list of indicators, with the expectation that substitutions will be made as new data become available. The list of tracer indicators, with information on their characteristics, data availability, rationale for inclusion, limitations and possible refinements are provided in Table 1.1.

For indicators of cardiovascular disease prevention and diabetes management, no standardized data sets of effective coverage of cardiovascular disease and diabetes treatment, nor treatment for elevated cardiovascular risk, are currently available. In the meantime, the prevalence of normal blood pressure (including those whose blood pressure is controlled by medication) and mean fasting plasma glucose (an indicator for diabetes) were selected as proxy measures (Table 1.1). These reflect the success of effective health promotion, screening and treatment programmes.

The service capacity and access category uses proxy indicators for the suite of coverage measures that cannot currently be monitored due to data limitations (Box 1.1). This includes important areas such as routine medical examinations, treatment for mental illnesses, emergency care and surgical procedures. The selected proxy indicators in this category include hospital bed density, the density of physicians, psychiatrists and surgeons, access to essential medicines, and compliance with the International Health Regulations to reflect health security.

It should be noted that proxy measures like hospital bed density, physician density, as well as alternatives like service utilization rates, are difficult to interpret as the optimal level for these indicators is unclear and they do not relate to a specific need for services. Despite this, low levels for these indicators are indicative of poor access and use of essential health services.

Table 1.1. Sixteen tracer indicators selected to monitor progress towards UHC on coverage of essential health services

Tracer area	Tracer indicator	Type	Primary data sources	Measurability of key inequality dimensions[a]	Countries with primary data since 2010	Data source	Rationale, limitations and possible refinements
Reproductive, maternal, newborn and child health							
1. Family planning	Demand satisfied with modern method among women 15–49 years who are married or in a union (%)	Effective service coverage	Household survey	W, E, R, A	112	UNPD estimates *(33)*	Demand satisfied with a modern method is SDG indicator 3.7.1. It has a relatively complex denominator derived from multiple survey questions, and data collection often focuses on women in a union, as opposed to all sexually active women.
2. Pregnancy and delivery care	Antenatal care, four or more visits (ANC4) (%)	Service coverage	Household survey	W, E, R, A	98	WHO global database *(34)*	Number of ANC visits captures contact with the health system but does not capture quality of care received and may not lead to improved mortality outcomes. Births attended by skilled health personnel (SDG indicator 3.1.2) is a preferred alternative; however, lack of standardized measurement of 'skilled' health personnel makes cross-country comparisons difficult. WHO/UNICEF efforts to improve comparability for reporting on SDG 3.1.2 should resolve these issues and allow 3.1.2 to replace ANC4 in the index.
3. Child immunization	One-year-old children who have received 3 doses of diphtheria-tetanus-pertussis vaccine (DTP3), (%)	Service coverage	Administrative system, household survey	W, E, R, S	183	WHO/UNICEF estimates *(35)*	DTP3, which is identical to coverage with pentavalent vaccine in most countries, is an indicator of a routine infant immunization system. However, several other vaccines such as for measles (second dose), pneumococcal pneumonia and rotavirus diarrhoea, typically have lower coverage and the fraction of children receiving all vaccines in a national schedule is typically much lower (although not possible to measure directly with existing data systems in most countries). This indicator could be replaced with second dose of measles vaccine, following the recent recommendation of the Strategic Advisory Group of Experts on Immunization.
4. Child treatment	Care-seeking behaviour for children with suspected pneumonia (%)	Service coverage	Household survey	W, E, R, S	94	UNICEF global database *(36)*	Pneumonia is a leading cause of child illness and death. Suspected pneumonia is determined based on a series of survey questions about illnesses in the past two weeks, which may include mild respiratory illnesses; the indicator does not currently capture the quality of care received as a mother's recall of treatment specifics tends to be poor. The main alternative indicator of child treatment that is widely measured is use of oral rehydration solution (ORS) therapy for child diarrhoea, which is also a leading cause of child death. The inclusion of the sanitation indicator in the index is relevant for diarrhoea prevention.

Tracer area	Tracer indicator	Type	Primary data sources	Measurability of key inequality dimensions[a]	Countries with primary data since 2010	Data source	Rationale, limitations and possible refinements
Infectious diseases							
1. Tuberculosis treatment	TB effective treatment coverage (%)	Effective service coverage	Administrative system, household survey	(R)	179	WHO estimates *(37)*	This indicator combines two more common ones – the case-detection rate and the treatment success rate – to estimate the proportion of TB cases that are detected and successfully treated. Calculation of the case-detection rate requires estimates of incident cases (including those not detected by the health system). Treatment-success rate is measured through administrative data, and includes all patients who successfully complete treatment without bacteriological evidence of failure.
2. HIV treatment	People living with HIV receiving ART (%)	Service coverage	Administrative system, household survey, surveillance system	(R), (S), (A)	136	UNAIDS estimates *(38)*	Provision of ART averts a substantial number of deaths in high-burden HIV countries, and can be a marker of how well a health system reaches marginalized populations with higher prevalence in lower-burden countries. Recent surveys have started measuring effective coverage of ART by collecting data on viral load suppression. The numerator – people on ART – is generally obtained from health facility data, while the denominator is often estimated from household surveys, sentinel surveillance sites and facility data.
3. Malaria prevention	Population at risk sleeping under insecticide-treated bednets (%)	Service coverage	Administrative system, household survey	W, E, R, S	29[b]	WHO/ Malaria Atlas Project estimates *(39)*[b]	There are major ITN distribution programmes in malaria-endemic countries. Coverage estimates should account for geographical heterogeneity in malaria risk when analysing national household surveys. Due to net deterioration, effective coverage rates can decline without resupply.
4. Water and sanitation	Households with access to at least basic sanitation (%)	Service coverage	Household survey	W, R	176	WHO/UNICEF estimates *(40)*	While not always implemented by the health sector, access to clean water and safely managed sanitation are important public health interventions. The current indicator of at least basic sanitation is typically much lower than access to at least a basic water source, and therefore is used as the tracer indicator for this area. This tracer indicator could be replaced with SDG 6.1.1 or 6.2.1, once they are more widely reported.
Noncommunicable diseases							
1. Prevention of cardiovascular disease	Prevalence of normal blood pressure, regardless of treatment status (%)[c]	Proxy	Household survey	(E), (R), S, A	85	NCD-RisC/ WHO estimates *(41)*	Hypertension is the leading risk factor for CVD. The prevalence of normal blood pressure is the sum of the percentage of individuals who do not have hypertension, and the percentage of individuals whose hypertension is controlled by medication. The absence of hypertension is a result of prevention efforts via promotion of physical activity and healthy diets, as well as other factors. Hypertension controlled with medication is a result of effective treatment. This indicator is thus a proxy for both effective health promotion and effective medical services. This indicator will be replaced with a measure of treatment coverage among people with hypertension, once the data become available.

Tracer area	Tracer indicator	Type	Primary data sources	Measurability of key inequality dimensions[a]	Countries with primary data since 2010	Data source	Rationale, limitations and possible refinements
2. Management of diabetes	Mean fasting plasma glucose (FPG), (mmol/L)[c]	Proxy	Household survey	(E), (R), S, A	6[d]	WHO estimates *(42)*	An individual's FPG may be low because of effective treatment with glucose-lowering medication, or because the individual is not diabetic as a result of health promotion activities or other factors such as genetics. Mean FPG is thus a proxy for both effective promotion of healthy diets and behaviours and effective treatment of diabetes. However, diabetes treatment guidelines do not recommend lowering blood glucose to non-diabetic levels for all patients, meaning that a population with a large prevalence of diabetes should not necessarily attain a low mean FPG. This indicator will be replaced with the proportion of people with diabetes receiving treatment once data become available.
3. Cancer detection and treatment	Cervical cancer screening among women aged 30–49 years (%)	Service coverage	Household survey	—	<30	Insufficient data currently available	Data on this indicator are collected in some household surveys, although not yet widely enough to be used for global monitoring. The indicator does not reflect whether effective treatment is available. This indicator was chosen over other potential cancer screening indicators, such as for breast or prostate cancer, because of clearer guidelines for the former, and because cervical cancer screening is the only one included in the core indicator set of the NCD Global monitoring framework.
4. Tobacco control	Adults aged ≥15 years not smoking tobacco in last 30 days (%)[c]	Proxy	Household survey	(W), (E), (R), S, (A)	125	WHO estimates *(43)*	Prevalence of smoking (SDG indicator 3.a.1) is a proxy for adoption and enforcement of a suite of effective anti-tobacco measures. This indicator could be replaced with a measure of effective implementation of tobacco control policies.
Service capacity and access							
1. Hospital access	Hospital beds per capita (w/ threshold)	Proxy	Facility data	(R)	158	WHO global database *(44)*	This indicator is a proxy for coverage of the full range of essential inpatient services. It has higher data availability in low- and middle-income countries than inpatient admission rates, with which it is highly correlated (rho=0.84 in low- and middle-income countries). A threshold is used to capture low capacity levels; very high values are not necessarily desirable. Inpatient service utilization rates, subject to a threshold, could be used in place of hospital beds as more data become available.
2. Health worker density	Health professionals per capita (w/ threshold): physicians, psychiatrists and surgeons	Proxy	Administrative system	(R)	180	WHO global database *(45)*	Comparable data on outpatient utilization rates are not currently available across low- and middle-income countries. Due to this, physician density, part of SDG indicator 3.c.1, is included as a proxy for coverage of the full range of essential outpatient services not captured by tracer indicators included elsewhere in the index. Nurses and midwives are currently excluded due to lack of comparable data across countries in existing global databases. Nurses and midwives could be included once comparable data become available. Psychiatrist and surgeon density are proxies for coverage of mental health and surgical and emergency care respectively. As with hospital beds per capita, a threshold is used to capture low densities for all three cadres.

Tracer area	Tracer indicator	Type	Primary data sources	Measurability of key inequality dimensions[a]	Countries with primary data since 2010	Data source	Rationale, limitations and possible refinements
3. Access to essential medicines	Proportion of health facilities with WHO-recommended core list of essential medicines available	Proxy	Facility survey	(R)	<30	Insufficient data currently available	Medicines are the main intervention resulting from clinical services, and their availability is a proxy for access to needed medications. This tracer will be included once data become widely available.
4. Health security	International Health Regulations core capacity index	Proxy	Key informant	—	181	WHO database *(46)*	Since many health risks are rare, preparedness measures must be tracked to capture health security as part of UHC. This indicator – SDG 3.d.1 – is based on key-informant reports to WHO, but could be informed by Joint External Evaluations in the future. This indicator measures country capacity for early warning, risk reduction and management of national and global health risks, and serves as a proxy for the effectiveness of those capacities.

ART: antiretroviral therapy; CVD: cardiovascular disease; HIV: human immunodeficiency virus; ITN: insecticide-treated nets; NCD: noncommunicable disease; SDG: sustainable development goal; TB: tuberculosis; UHC: universal health coverage; UNAIDS: Joint United Nations Programme on HIV/AIDS; UNPD: United Nations Population Division; UNICEF: United Nations Children's Fund; WHO: World Health Organization.

[a] W = household wealth quintile; E = educational attainment; R = place of residence (typically urban vs. rural); S = sex; and A = age. Letters in parentheses indicate that data sources exist to estimate coverage by the indicated dimension but that more analytical work is needed to prepare disaggregated estimates.

[b] Only pertains to countries with highly endemic malaria.

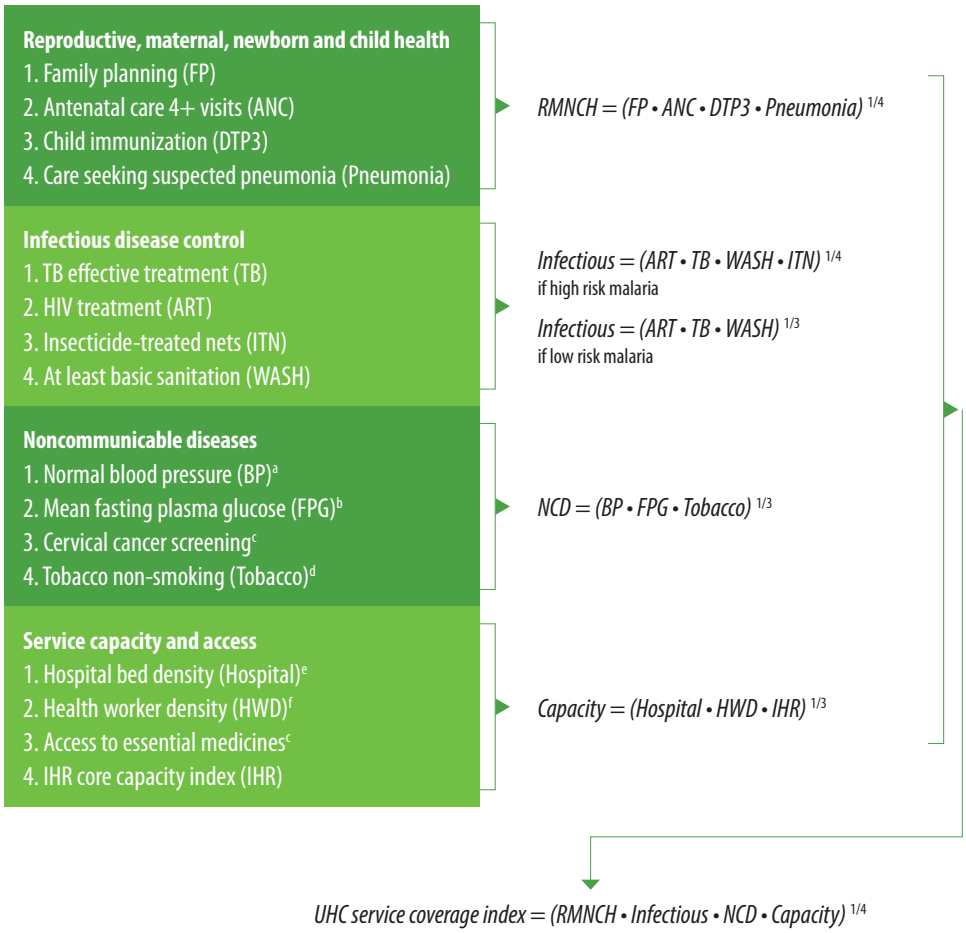
[c] Age-standardized.

[d] Data availability for 178 countries is based on the 2011 analysis used to calculate the index *(41)*. This analysis used predominantly older data, but included one data source collected in 2010. During the country consultation process, five countries submitted recent data on mean FPG. Estimates of mean FPG have not been updated as the aim is to move toward a true coverage indicator as explained above. The NCD-RisC collaboration has estimated that recent (since 2010) national or subnational household survey data, including a measure of diabetes, are available for 87 countries or territories.

Calculating the index

Indicators of cervical cancer screening coverage and access to essential medicines are currently excluded from the index calculations due to low data availability. Service coverage is typically measured on a scale of 0 to 100%, with 100% as the target, and therefore the UHC service coverage index is presented on a scale of 0 to 100. Most of the tracer indicators can be incorporated directly into the index on their natural scale, for example the percentage of people living with HIV who are receiving antiretroviral treatment. However, there were several exceptions requiring further manipulation of the data, which are explained in Fig. 1.1. The index is constructed from geometric means of the tracer indicators; first, within each of the four categories, and then across the four category-specific means to obtain the final summary index (Fig. 1.1). Geometric means are used instead of arithmetic means as they favour equal coverage levels across services as opposed to higher coverage for some services at the expense of others.

Fig. 1.1. Calculating the UHC service coverage index



IHR: International Health Regulations; NCD: noncommunicable diseases; RMNCH: reproductive, maternal, newborn and child health; UHC: universal health coverage.

[a] The percentage of the adult population with normal blood pressure is based on age-standardized estimates. These distributions are rescaled to provide finer resolution for the index, based on the observed minima across countries. The rescaled indicator = (X–50)/(100–50)*100, where X is the prevalence of normal blood pressure.

[b] Mean fasting plasma glucose (FPG) is not measured on a scale bounded between 0 and 100%. While very high levels are unhealthy, very low levels are not expected to provide additional health benefits or could even be harmful. To account for this range, while also providing a well-distributed range of indicator values across countries, from 0 to 100 after rescaling, estimates of national mean FPG were rescaled using a minimum of 5.1 mmol/L (the midpoint of minimum theoretical risk) and a maximum of 7.1 mmol/L (the maximum across national means). The rescaled indicator for mean FPG = (7.1–X)/(7.1–5.1), where X is mean FPG.

[c] Cervical cancer screening and access to essential medicines are excluded due to low data availability.

[d] As in (a), tobacco non-smoking is also based on age-standardized estimates, and is rescaled to provide finer resolution based on a minimum bound of 50%, so that the rescaled indicator = (X–50)/(100–50)*100, where X is prevalence of tobacco non-smoking.

[e] Hospital bed density values were rescaled and capped based on a threshold of 18 per 10 000, based on minimum rates observed in high income OECD countries. Values below 18 per 10 000 are rescaled as X/18*100, where X is hospital beds per 10 000, and values above 18 per 10 000 are set to 100.

[f] As in (e), health worker density (HWD) is rescaled and capped based on threshold values. Physician density has a threshold of 0.9 per 1000, psychiatrists have a threshold of 1 per 100 000, and surgeons have a threshold of 14 per 100 000. After rescaling these values (i.e., minimum (100, X/threshold*100), where X is the cadre-specific density, they are combined into a HWD composite variable for entry into the above index calculations, computed as (physicians * psychiatrists * surgeons).[1/3]

Data sources

Common primary data sources used for indicators of service coverage include surveys, facility data and other administrative data (Table 1.1). Nationally representative, population-based surveys are often the best source as they can enable the measurement of those who need an intervention, in addition to counting those who already receive it, and allow for the disaggregation of service coverage by different subpopulations for equity analysis. The use of facility data or other administrative sources presents challenges as they may capture the number of people receiving a service (the numerator) but fail to count all those who need a service (the denominator), and typically do not collect variables relevant for equity analyses other than geographical location. They may also be subject to reporting incentives. However, an advantage of administrative data sources is that they are often reported annually through routine systems, and therefore provide more timely data than household surveys, which are typically conducted every three to five years.

UN agencies lead substantial measurement and reporting efforts for many of the selected tracer indicators, which feed into SDG reporting processes where relevant. Therefore, priority was given to official UN estimates for the year 2015 to compute SDG baseline values for the coverage index. However, it should be noted that no country reports values for all tracer indicators in every year. Simply excluding an indicator without data to compute the index creates expected bias as some services tend to have higher coverage than others. The alternative is to use some form of imputation to fill these data gaps. Most UN estimates of tracer indicators use statistical or mathematical models to combine different data sources and fill data gaps to produce annual values for each country. In cases where UN estimates were not available, the most recent value from 2000 to 2015 for each country's indicators was used to compute the index. In cases where no country value was available from that time period, a regional median from countries with data was computed and used as the country value. More details are available in Annex 2.

First findings on SDG indicator 3.8.1

Data availability on tracer indicators varied from country to country but was fairly similar across regions (Fig. 1.2) and generally high, with countries having recent primary data for 72% of tracer indicators on average. This figure reflects only primary data, not estimates computed to fill in data gaps.

Fig. 1.2. Percentage of tracer indicators with primary data source available since 2010, by country

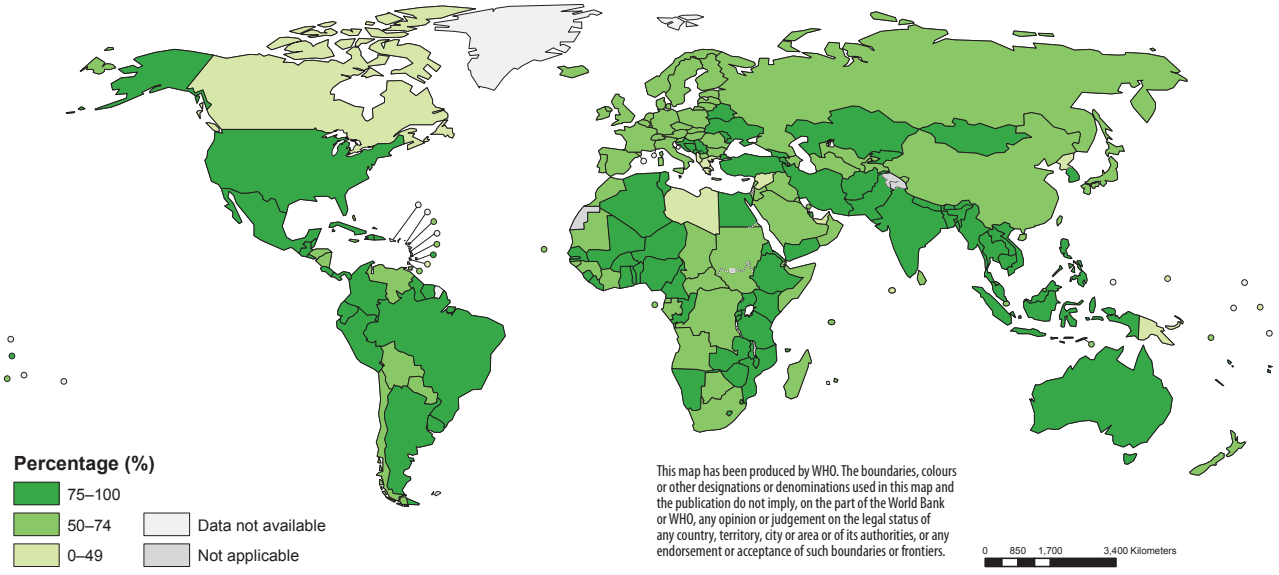
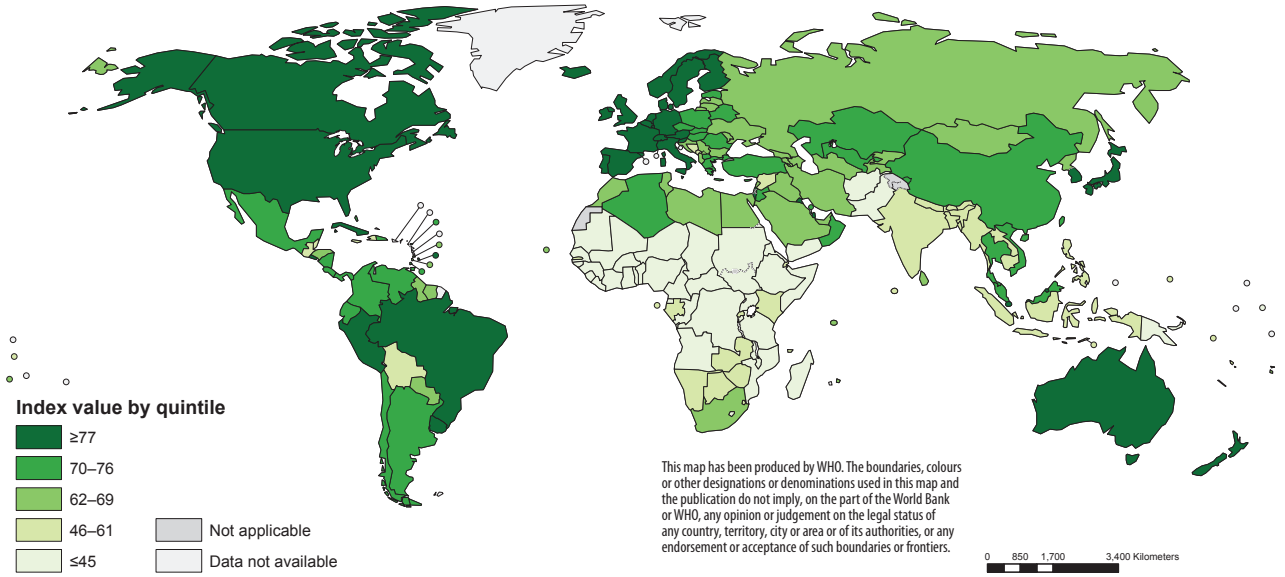


Fig. 1.3. UHC service coverage index by country, 2015, for monitoring SDG indicator 3.8.1



SDG: Sustainable Development Goal; UHC: universal health coverage.

Current values for the UHC service coverage index ranged from 22 to 86 across 183 countries, with a median value of 65 (Fig. 1.3). The service coverage index is highly correlated with other measures of health and development, for example, under-5 mortality rates (ρ=–0.86), life expectancy (ρ=0.88) and the Human Development Index (ρ=0.91), and modestly correlated with gross national income (GNI) per capita (ρ=0.65). High-income countries tend to have high values on the index, while the lowest values are seen among low-income countries and some countries affected by conflict (see Annex 2 for UHC service coverage index and tracer indicator values by country).

The UHC service coverage index is more predictive of life expectancy than the GNI, and remains predictive of life expectancy after controlling for GNI and mean years of adult education. For example, a regression of national life expectancy on the service coverage index, the log of GNI per capita and mean years of adult education, indicates that going from 0 to 100 on the index is associated with a 32-year (95% confidence interval, CI: 25–39 years) increase in life expectancy. Over the range of observed country values (22 to 86), this translates into a difference of 21 years in life expectancy.

The service coverage index is constructed from subindices representing the four categories of RMNCH, infectious diseases, NCDs, and service capacity and access. Table 1.2 depicts these subindices, along with the full service coverage index, across modified SDG regions weighted by population size. The UHC service coverage index is highest in Europe and Northern America (77) and the Eastern Asia region (77), while sub-Saharan Africa (42) and Southern Asia (53) have the lowest average values. The strongest gradient across regions is for the service capacity and access subindex; the mean value for sub-Saharan Africa is only 27 compared with 99 in Eastern Asia. The NCD subindex is fairly evenly distributed across regions and less correlated with other categories. This is largely because tobacco use is low in some areas with weaker health systems, such as sub-Saharan Africa and Southern Asia, and high in Europe.

Table 1.2. Regional (population-weighted) means for the UHC service coverage index and its four component subindices

Area	UHC service coverage index	RMNCH	Infectious diseases	NCDs	Service capacity and access
Global	64	75	54	63	71
Africa	46	55	40	67	37
Northern Africa	64	73	50	62	77
Sub-Saharan Africa	42	51	37	69	27
Asia	64	75	51	63	71
Eastern Asia	77	86	64	64	99
Southern Asia	53	66	41	64	47
South-Eastern Asia	59	78	45	59	63
Central Asia	70	81	56	58	93
Western Asia	65	69	59	57	79
Europe and Northern America	77	88	73	58	96
Latin America and the Caribbean	75	81	65	68	88
Oceania	74	83	71	62	84

NCDs: noncommunicable diseases; RMNCH: reproductive, maternal, newborn and child health; UHC: universal health coverage.

Small differences in country rankings are not meaningful, as many country values are close together and there is uncertainty in the measurement of tracer indicators, particularly for countries with low data availability (Fig. 1.2), and in methods used to calculate the index *(9)*. Currently, the index does not adequately distinguish between countries with the highest level of service coverage provision. Therefore, country index values of 80 and over are reported as '≥80' for presentation purposes, to avoid comparisons that are not meaningful (see Annex 1 for country values). This should not be interpreted as a target.

Gaps in health service coverage

To communicate the magnitude of the task ahead to increase health service coverage to improve health outcomes and achieve the health-related SDGs, perhaps no single statistic is more in demand than the number of people with coverage of essential health services. These numbers are challenging to compute precisely (Box 1.3), and can be supplemented by considering the gaps in selected essential health services.

This is illustrated in Fig. 1.4, which shows the number of people with unmet need for each of nine UHC service coverage index tracer indicators that are measured on a percentage scale and have global estimates of unmet need available. Across selected individual indicators, unmet need ranges from 2.3 billion for at least basic household sanitation to 5 million for effective tuberculosis treatment. This set of nine indicators does not reflect the total unmet need for health services, but it provides evidence that very large gaps in coverage persist.

Box 1.3. How many people are covered with essential health services?

Fully answering this question is challenging because there is no dataset that contains information on all people's needs for health services and whether they received those services. The first UHC Global Monitoring Report stated that, in 2013, over 400 million people were not receiving at least one of seven essential health services that they needed. These represented Millennium Development Goal priority areas of family planning, antenatal care, births attended by skilled health personnel, DTP3 immunization, HIV treatment, TB treatment and ITN use among children. This calculation did not encompass the broad range of essential health services that individuals should receive. Here, we estimate the number of people who are covered with the broad and representative range of health services that they should receive in any country.

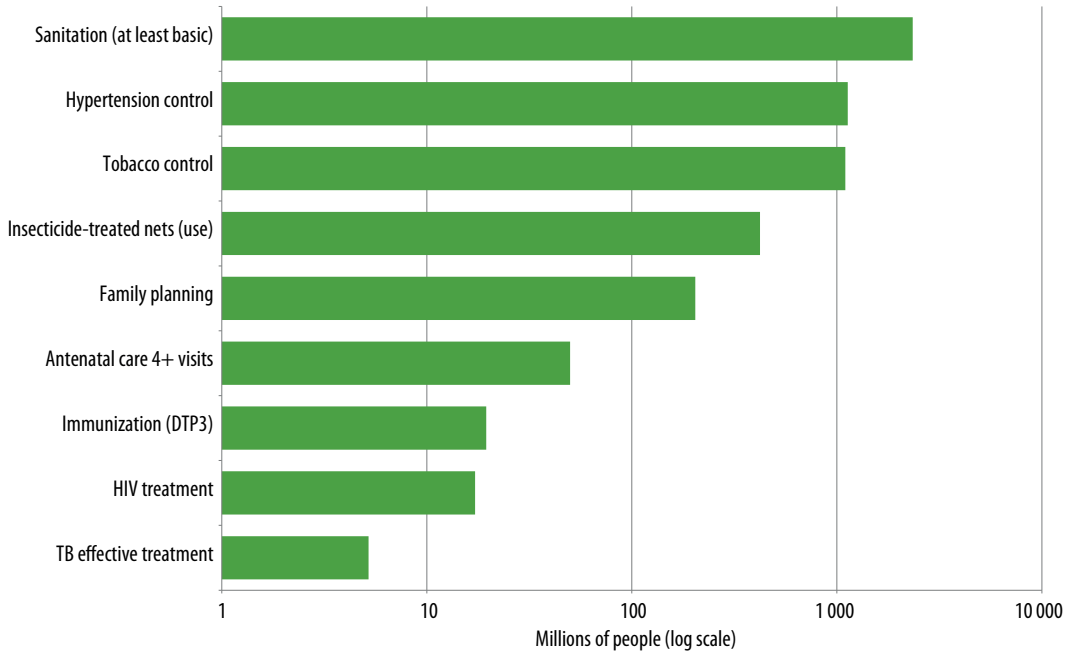
A simple algorithm is used to estimate the number of people who have full coverage with essential health services.[a] First, a set of tracer coverage indicators are selected, based on those in the UHC service coverage index. These tracer indicators track, but do not define, a full package of essential health services, ranging across health areas (such as reproductive health and noncommunicable diseases) and service delivery platforms (such as community services, primary care and specialized services). Second, average coverage of these tracer indicators is calculated for each country. This number represents the average chance that an individual who needs an essential health service will receive it. It does not represent the percentage of people who are covered with all needed services, because any given individual may be covered with some services, but not others.

The analysis of co-coverage of basic services in mother-child pairs (see the following section on inequalities in maternal and child health service coverage), however, offers a way to estimate the relationship between average coverage of services and the proportion of people with full coverage with essential health services. A regression equation fitted to these data is used to convert average coverage of essential services in each country to the proportion of people that are expected to have full coverage with essential services. To set a realistic goal for full coverage, this is operationalized as the percentage of mother-child pairs who receive at least six out of seven basic services.

There is substantial uncertainty around this approach. Given a set of plausible sensitivity analyses,[a] the number of people with full coverage with essential services ranged from 2.3 to 3.5 billion in 2015. This implies that at least half of the world's 7.3 billion people do not receive the essential health services they need.

[a] For methodological details, please see technical note online: http://www.who.int/healthinfo/universal_health_coverage/report/2017/en/

Fig. 1.4. Number of people in need but not receiving a selected essential health service[a]



DTP3: third dose of diphtheria-tetanus-pertussis containing vaccine; HIV: human immunodeficiency virus; TB: tuberculosis.

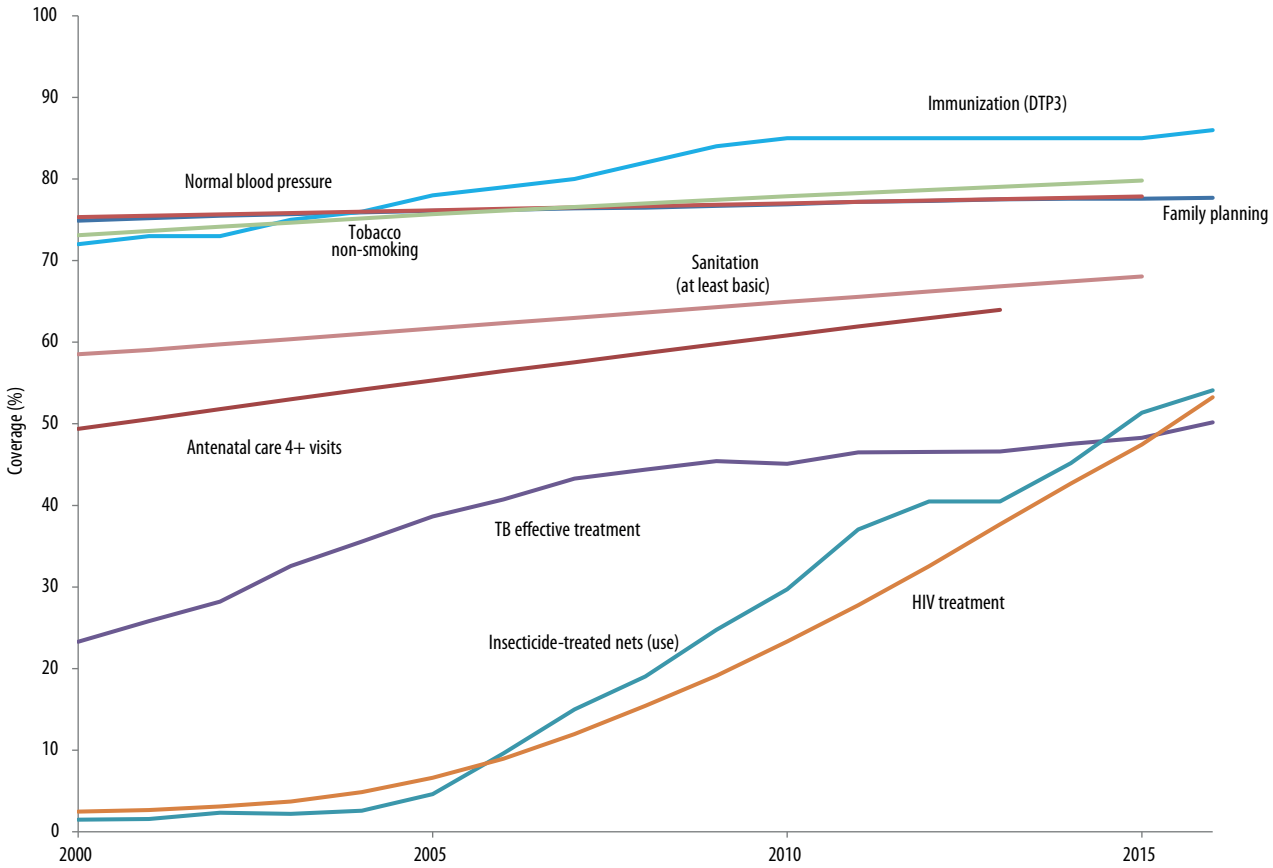
[a] 2016 estimates: TB effective treatment, HIV treatment, Immunization (DTP3), Family planning, Insecticide-treated nets (use); 2015 estimates: Tobacco control, Hypertension control, Sanitation (at least basic); 2013 estimates: Antenatal care 4+ visits.

Time trends in service coverage

Country and global trends are available for the same nine tracer indicators in the UHC service coverage index that are measured on a percentage scale and already discussed (see 'Gaps in health service coverage' and Fig. 1.5). The average coverage of these indicators increased by 1.3% per annum, which is roughly a 20% relative increase from 2000 to 2015.

The largest relative increases are seen in indicators for HIV, TB and malaria services, arguably reflecting resource allocation priorities that have dominated global public health in recent years. Progress in DTP3 immunization coverage between 2000 and 2010 has slowed in more recent years. Although normal blood pressure indicators have improved slightly at the global level, this obscures diverse underlying trends at the regional level. High-income countries have experienced substantial improvements, while the prevalence of normal blood pressure has remained stable or even deteriorated in Eastern, Southern and South-Eastern Asia, Oceania (excluding Australia and New Zealand), and sub-Saharan Africa *(41)*.

Fig. 1.5. Trends in global coverage of selected health service tracer indicators, 2000–2016



DTP3: diphtheria-tetanus-pertussis containing vaccine (third dose); HIV: human immunodeficiency virus; TB: tuberculosis.

Inequalities in maternal and child health services in low- and lower-middle-income countries

With complete data, the UHC service coverage index could be computed and compared across different dimensions of inequality, for example across wealth and education gradients, different geographical regions within a country, and age and sex. This is currently not possible for all tracer indicators due to data limitations; however, a subset of indicators can be used to illustrate variation in inequality across countries *(9)*. The most readily available information on inequalities in health service coverage are for RMNCH indicators measured through household surveys. As these indicators are measured at the individual level in a single survey, it is possible to assess the fraction of needed services that each person receives. This measurement approach is often referred to as 'co-coverage' *(47)*.

To assess levels and trends in inequalities in maternal and child service coverage indicators, co-coverage of seven basic health services, collected in Demographic and Health Surveys (DHS) carried out in low- and lower-middle-income countries, were considered. The seven services were: four or more antenatal care (ANC) visits, at least one tetanus vaccination during pregnancy, skilled birth attendance, Bacillus Calmette–Guérin vaccination, the third dose of a diphtheria-tetanus-pertussis containing vaccine, measles vaccination and access to improved drinking water in the household. All seven indicators were calculated for children aged 12–59 months, using information available from their mothers' most recent pregnancy where relevant (for instance for ANC). This analysis shows what proportion and number of these basic services each mother-child pair received, and can be summarized across key dimensions of inequality.

In low- and lower-middle-income countries, large gaps in maternal and child health services persist and are not evenly distributed across population groups (Fig. 1.6 and Fig. 1.7).[1] While 39% of mother-child pairs in these countries received at least six of seven basic interventions, 4% of mother-child pairs received no interventions at all. When the data are stratified by wealth quintile, significant inequalities emerge: overall, only 17% of those in households in the poorest wealth quintile in their countries received at least six basic interventions, versus

[1] In this paragraph and Fig. 1.6 and Fig. 1.7, all analyses were carried out using the most recent survey in each country during the time period 2005-2015. Data were available for 48 countries, covering 90% of 2010 live births in lower-middle and low-income countries; the median survey year was 2012. To create estimates for all low- and lower-middle-income countries, country data were weighted by the number of live births in 2010.

Fig. 1.6. Mother-child pairs in low- and lower-middle-income countries, by number of basic interventions received out of seven, 2005–2015

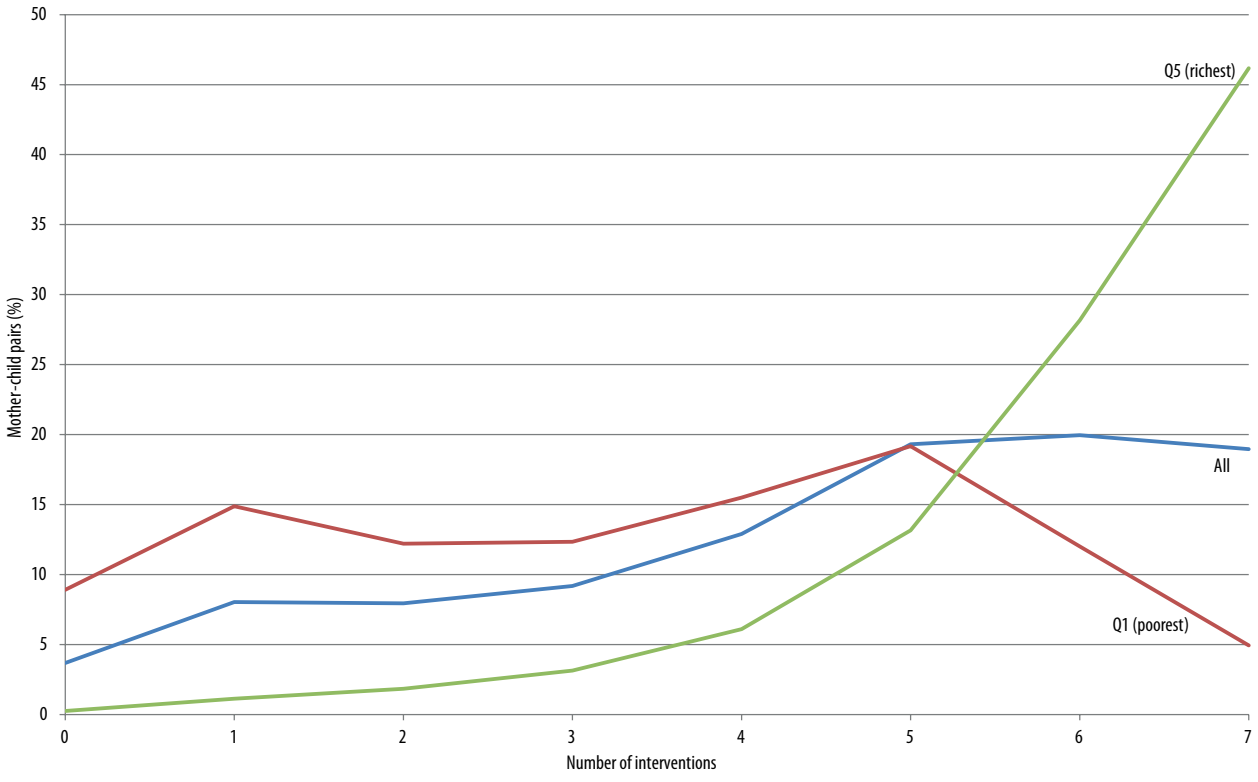
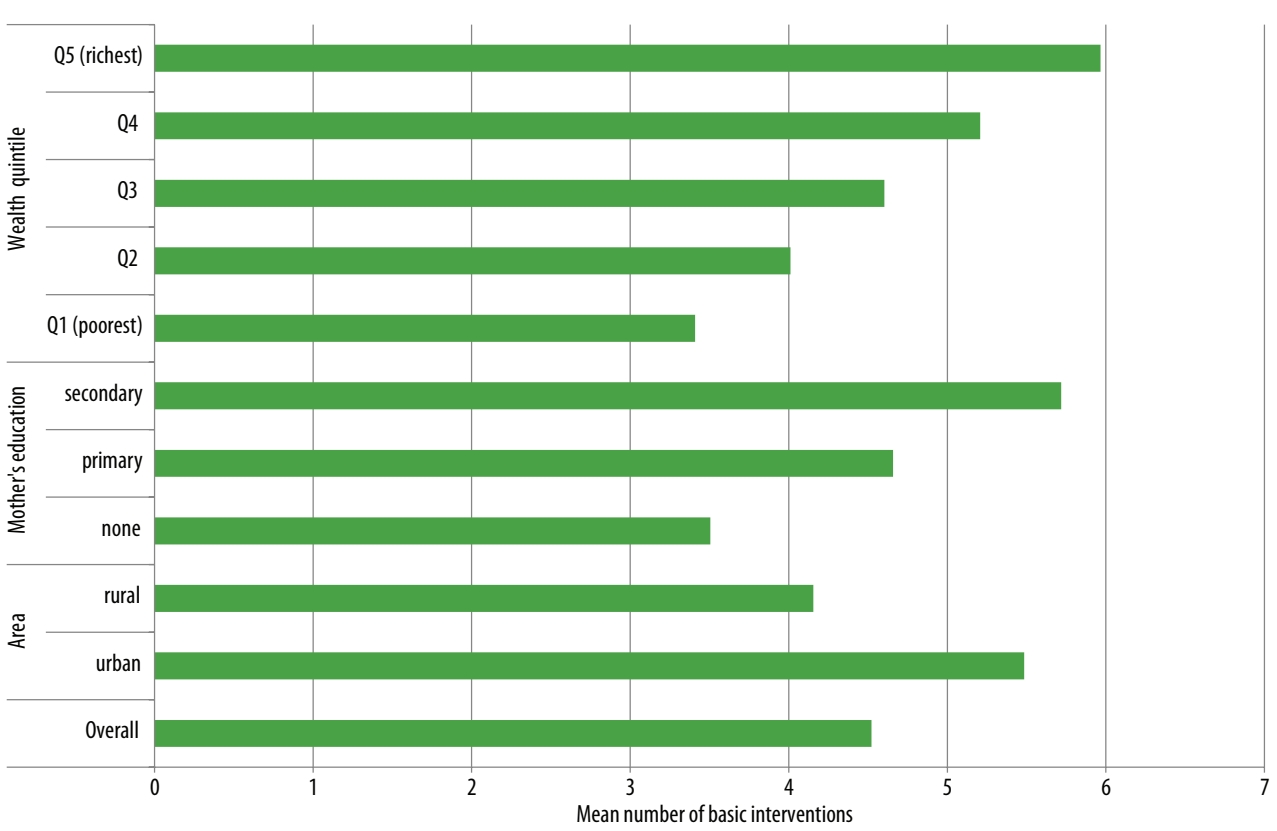


Fig. 1.7. Mean number of basic interventions that mother-child pairs receive out of seven, overall and by inequality dimensions, low- and lower-middle-income countries, 2005–2015



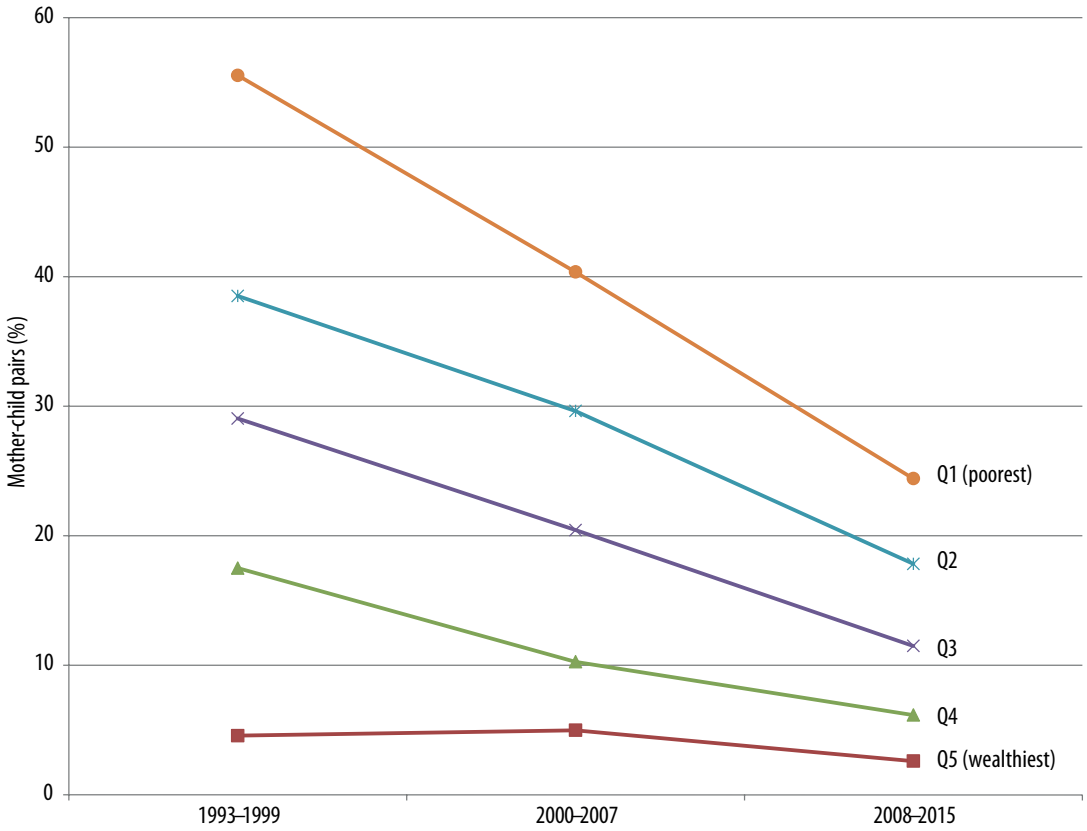
74% in the richest quintile. Those in the poorest wealth quintile in each country were most likely to receive no interventions, with 9% receiving none of them. The mean number of interventions received ranged from three in the poorest wealth quintile to six in the wealthiest, with an overall average of five out of seven. Mother-child pairs living in rural areas had lower coverage than those living in urban areas.

Trends in maternal and child health service coverage inequalities over time

Unless health interventions are designed to promote equity, efforts to attain UHC may have the unintended consequence of bringing early and accelerated gains for the most-advantaged section of society, and at the same time leaving the most disadvantaged behind. As a result, the national average of service coverage may improve, but inequalities may worsen at the same time *(48)*. In order to assess time trends in inequalities in service coverage in low- and lower-middle-income countries, survey data were subdivided into three periods: 1993–1999, 2000–2007 and 2008–2015. Data were available from 23 low- and lower-middle-income countries for all three periods, representing approximately 38% of live births in these regions; therefore, summary statistics should not be considered representative.

Considering large gaps in coverage, the median percentage of mother-child pairs that received three or fewer basic health services declined between 1993–1999 and 2008–2015 across all wealth quintiles among 23 low- and lower-middle-income countries with available data (Fig. 1.8). Absolute reductions were larger in poorer wealth quintiles, and therefore absolute inequalities in missed health services were reduced over this time period. The median percentage of mother-child pairs receiving three or fewer of the basic services declined by 25 percentage points among the poorest wealth quintiles, falling from 56% to 24% across the time period. However, mother-child pairs in the poorest wealth quintile were still far more likely to experience a large gap in service coverage than mother-child pairs in the wealthiest quintile: the median proportion of mother-child pairs receiving three or fewer basic interventions was only 3% in the wealthiest quintile. This reinforces the importance of structuring health services so that no one is left behind.

Fig. 1.8. Percentage of mother-child pairs covered with three or fewer basic health services out of seven by within-country wealth quintile[a]



[a] Median value from national surveys carried out in 23 low- and lower-middle-income countries in each time period.

Next steps for an index of essential health services

For the first time, an index of essential health services that is consistent with the definition of SDG indicator 3.8.1 has been operationalized *(9)*. It must be stressed that the selected tracer indicators are a subset of measurable indicators, and not a recommended basket of services. Global, regional and national UHC monitoring frameworks should continue to develop and report relevant indicators of service coverage (Box 1.4). These efforts could be used to adapt the index, or provide a fuller picture by reporting on individual indicators. The desire for information to monitor UHC must be balanced against the costs of collecting it. Streamlining household health surveys so that they cover a wide range of health areas may be more efficient than conducting separate surveys on specific health topics. This also makes it more straightforward to characterize time trends and disaggregate a broad set of service coverage indicators for equity analysis (Box 1.5).

The current UHC service coverage index has several limitations, not all of which can be currently addressed due to data constraints. Some expected changes, for example updating indicators to match SDG indicator definitions as they become available, are described in Table 1.1. Beyond SDG alignment, future work will likely include the following:

- Replacing proxy indicators for NCD service coverage. Global databases on treatment coverage for hypertension and diabetes should be completed in 2018, and these indicators can be used in lieu of current proxy indicators.
- Investigating the feasibility of using inpatient and outpatient service utilization rates as indicators of service capacity, access and use.
- Increasing relevance to higher income countries. Many high-income countries are approaching 100% coverage for tracer indicators in the RMNCH and service capacity and access categories. Other tracer indicators, or a hybrid method that incorporates avoidable mortality, should be assessed.
- Expanding the set of tracer indicators with equity information to allow fuller disaggregation of the index.

Box 1.4. WHO Western Pacific Region adaptation of the UHC service coverage index

The WHO Regional Office for the Western Pacific (WPRO) has developed a framework for monitoring progress towards the SDGs and UHC *(49–50)*. It includes a total of 88 indicators under three groups: 27 indicators fall under SDG 3 (Health), 20 are from other SDGs, and 41 are additional indicators of progress towards UHC. The following criteria were used to determine a list of 'fit for purpose' indicators.

1. Focus on common health issues and indicators across the Western Pacific Region to allow within-country and cross-country comparisons, mutual learning and sharing of experience.
2. Align the regional-level indicators with existing global collections where possible, to encourage information/data exchange between Member States in the Region.
3. Ensure that, in addition to tracking progress in SDGs and UHC, the indicators can be used to review progress and to support policy and programme development at multiple levels (national, subnational, local) and for different population groups.
4. Ensure where possible that information to track progress towards SDGs and UHC is disaggregated by sex, age, socioeconomic status, education, ethnicity and place of residence.
5. Ensure the indicators are theoretically sound and commonly understood.
6. Ensure that the indicators reflect a balance in the selection of targets, not overemphasizing one health condition, but capturing characteristics that reflect the health profile of country populations.

Following this framework, WPRO is in the process of producing a report describing the Region's current SDG and UHC baseline situation and presenting the results of analyses that countries may consider when incorporating SDG and UHC monitoring into policy and decision-making. The aim is for countries to use this report as a benchmark not only to support their own monitoring efforts and activities, but to assist in the formulation of policies, programmes and practices targeting health system development to reaching UHC.

Box 1.5. Tunisia – UHC tailored surveys

The Tunisian Health Examination Survey (THES) is specifically designed to collect data to monitor progress towards UHC using a set of standard modules. The Tunisian Ministry of Health and National Institute of Public Health, in collaboration with the National Office of Family and Population and the Research Laboratory in Epidemiology and Prevention of Cardiovascular Diseases, designed and executed this survey to generate information to support evidence-informed health policy and strategy development. It is in recognition of a lack of more complete and recent high-quality information about the health of people living in Tunisia, the way they use health services and their household health spending, that the survey was carried out, to inform the national government's health policy.

The survey collected data on adults' self-reported health status and determinants including risk factors such as alcohol and tobacco use; diagnosed chronic diseases such as heart disease, diabetes and depression and their treatment; health care utilization; responsiveness of health-care services; health insurance coverage; household expenditure including out-of-pocket spending on health (total and disaggregated for different types of health services and goods); contributions to insurance schemes and reimbursements; and sources of finance to pay for health (for instance current income, selling assets or borrowing). Women of reproductive age were interviewed about their reproductive health and their children's immunization coverage. In addition, a suite of biological measurements were taken, including blood glucose, glycosylated haemoglobin (HbA1c), total cholesterol, height, weight, blood pressure and visual acuity.

Results from this survey reveal that while 97.2% of children received full vaccination coverage and 86% of mothers had antenatal care, only 42.7% of those with diabetes and only 5.5% of those with depression received treatment in the past two weeks. Among eligible women only 10.8% had been screened for cervical cancer with a Pap smear and only 8.1% had mammography screening for breast cancer. Additionally, of the 26.4% of the population that were hypertensive, 37.9% were aware of their hypertension, 30.7% were on current treatment and only 9.7% were adequately controlled. There were also significant differences between socioeconomic groups and governorates. Awareness and treatment of diabetes, for example, were highest in the Central-East (60.4% both aware and on treatment) and lowest in the North-West (45.2% both aware and on treatment).

Regarding financial protection against catastrophic health expenditures (see Chapter 2), the survey also revealed that 9.1% of the total population incurred catastrophic out-of-pocket spending on health (defined as out-of-pocket health expenditures exceeding 25% of total household expenditure). Looking at the incidence rate by area of residence, rural populations were slightly more affected by catastrophic health expenditures (9.9%) compared with urban populations (8.8%). Twelve per cent of respondents also stated that they did not receive health care when they last needed it. While over 40% of these respondents did not seek treatment because they felt they were not sick enough, 16.9% – especially those from the poorer segments of the population – said this was because they could not afford the cost of the visit and 5% said they could not afford the cost of the transport. The poor more often reported affordability as a reason for not accessing care.

The THES provides an illustration of the measurement of key markers of progress towards Universal Health Coverage. While immunization and antenatal care coverage are high, the coverage for chronic conditions and cancer screening will need considerable policy interventions and targeted efforts to strengthen programmes to increase public awareness, detection and appropriate management in primary care settings. Additionally, efforts will need to be made to reduce socioeconomic inequalities in coverage of key health interventions and to reduce gaps in the quality of care, costs and work conditions between the public and private health sectors. Finally, a significant number of households are not protected from financial risk due to out-of-pocket spending on health, including the most vulnerable who are choosing to forgo treatment due to unaffordable costs.

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CHAPTER 2

FINANCIAL PROTECTION

Financial protection in health occurs when families who get needed care do not suffer undue financial hardship as a result. This chapter presents various measures of financial protection and their operationalization, and presents data on levels and trends, beginning with the official SDG indicators, and then moving to various non-SDG indicators that are also considered important in monitoring financial protection. Box 2.1 presents key findings.

Box 2.1 Financial protection: key findings

- **808 million people worldwide incur catastrophic health spending defined as out-of-pocket expenditures exceeding 10% of household total consumption or income.** In 2010, 808 million people (11.7% of the world's population) incurred catastrophic spending at the 10% threshold. At the 25% threshold, the figures are 179 million and 2.6%. These thresholds are both part of the official catastrophic expenditures 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".

- **Latin America and Asia have the highest rates of people with out-of-pocket expenditures exceeding 10% or 25% of household total consumption or income.** Latin America and the Caribbean has the highest rate at the 10% threshold (14.8%). Asia has the second-highest rate (12.8%), and is the region where most people facing catastrophic payments are concentrated.

- **Catastrophic payment incidence has been increasing between 2000 and 2010.** Both the percentage and the size of the population facing catastrophic payments have increased at all thresholds since 2000. At the 10% threshold, the region with the fastest increase in population facing catastrophic payments is Africa (+5.9% per annum on average) followed by Asia (+3.6% per annum). North America is the only region where both the incidence and the population exposed has decreased (–0.9% per year).

- **97 million impoverished by out-of-pocket spending at the 2011 PPP $1.90-a-day poverty line.** An estimated 97 million people were impoverished by health care expenditures at the $1.90-a-day poverty line in 2010, equivalent to 1.4% of the world's population. At the 2011 PPP $3.10-a-day poverty line, the figure is 122 million (1.8%). At these two international poverty lines impoverishment rates in upper-middle-income countries and high-income countries are close to or equal to zero.

- **Africa and Asia have the highest impoverishment rates at the 2011 PPP $1.90-a-day poverty line.** Africa and Asia have 1.4% and 1.9% rates of impoverishment respectively at the $1.90-a-day poverty line in 2010. These two regions account for 97% of the world's population impoverished by out-of-pocket health spending.

- **Impoverishing payment incidence has been falling at the 2011 PPP $1.90-a-day poverty line but not at the 2011 PPP $3.10 line.** At the $1.90-a-day poverty line, the number and percentage of people globally impoverished fell between 2000 and 2010 from 130 million (2.1%) to 97 million (1.4%). By contrast, at the $3.10-a-day line, the percentage and number of people impoverished increased from 106 million (1.7%) to 122 million (1.8%).

- **Uneven progress across UN regions on impoverishing spending at the 2011 PPP $1.90-a-day and 2011 PPP $3.10-a-day line.** Africa has seen reductions at both the $1.90 and $3.10-a-day poverty lines, while Asia saw a marked reduction at the $1.90 line and an increase at the $3.10 line.

Measures of financial protection

Catastrophic spending on health (SDG and non-SDG indicators)

There is no right or wrong approach to measuring catastrophic health expenditures. Different studies adopt different approaches. Some studies define out-of-pocket health expenditures as catastrophic when they exceed a given percentage (for example, 10% or 25%) of income or consumption *(1)*. This is the approach adopted in SDG 3.8.2. Other studies relate health expenditures not just to income or consumption, but rather to income or consumption less a deduction for necessities, the argument being that this may provide a better measure of a household's ability or capacity to pay out-of-pocket for health services. These approaches are part of WHO regional frameworks to monitor catastrophic expenditures *(2,3,7)*. Studies of catastrophic health spending often report the incidence of such spending not only among the sample as a whole, but also among different groups especially those defined in terms of consumption or income, for example, income 'quintiles'. Some studies – including this report – also make use of a summary measure of inequality known as the 'concentration index'.[1]

Impoverishing spending on health (non-SDG indicators)

Impoverishment is not an official SDG indicator of universal health coverage per se, but links UHC directly to the first SDG goal, namely to end poverty in all its forms everywhere. Impoverishment is defined as occurring when a household's consumption including out-of-pocket spending is more than the poverty line but its consumption excluding out-of-pocket spending is less than the poverty line *(1)*. The idea is that a household that is impoverished by out-of-pocket spending was forced by an adverse health event to divert spending away from non-medical budget items such as food, shelter, clothing, etc. to such an extent that its spending on these items is reduced below the level indicated by the poverty line. Impoverishment can be computed as the change in poverty headcount with and without out-of-pocket spending included in consumption or income.

This 'headcount' measure does not tell us how far such households are pushed below the poverty line. Nor does it capture the fact that some already-poor households may be pushed even further into poverty by their out-of-pocket health spending. These two facets of impoverishment can be captured by the change in the 'poverty gap' attributable to out-of-pocket spending. In the case of a household impoverished by out-of-pocket spending, the change in the gap is the amount by which out-of-pocket spending pushes the household below the poverty line. In the case of an already-poor household, the change in the poverty gap is equal to the full amount of the household's out-of-pocket spending. These amounts are then averaged across all households to get the overall average change in the poverty gap due to out-of-pocket health spending. If multiplied by the poverty line, it gives the average per capita amount by which consumption or income falls short of the poverty line.

[1] The concentration index is zero if, on balance, catastrophic expenditures are equally common among rich and poor households; negative if they are more common among poor households; and positive if they are more common among rich households.

Operationalizing measures of financial protection

Defining and measuring out-of-pocket spending

Out-of-pocket payments are those made by people at the time of getting any type of service (preventive, curative, rehabilitative, palliative or long-term care) provided by any type of provider. They include cost-sharing (the part not covered by a third party like an insurer) and informal payments (for example, under-the-table payments), but they exclude insurance premiums. Out-of-pocket payments could be financed out of a household's income, including remittances, its savings, or by borrowing. They exclude any reimbursement by a third party, such as the government, a health insurance fund or a private insurance company.

In practice, household surveys that are used to collect data on out-of-pocket payments for health suffer some shortcomings. In some countries, it is sometimes unclear whether the payments are net or gross of reimbursement from third party payers. Sometimes, recall periods are probably too long (for example, 12 months for medicines) or too short (for example, one month for inpatient care) to get accurate data. Whenever the recall period is less than 12 months, analysts usually have little choice when annualizing the data but to multiply by the relevant number (for example, 12 in the case of a one-month recall) but this may well not produce an accurate estimate. Most surveys ask about spending on all health care items (pharmaceutical products, hospital services, medical services and paramedical services), but it is difficult to be sure that all surveys are equally comprehensive. Surveys without a focus on health-seeking behaviour do not have information on the indirect costs associated with utilization (e.g. transportation costs). Nor do they have information on the opportunity costs of care-seeking (e.g. income losses). These types of costs can represent a substantial burden, but are not included in the estimates below.

Defining and measuring income and consumption

Some studies relate out-of-pocket spending to income, some to consumption. When income is used, no allowance is made for the fact that households are able to reduce the variability of consumption over time – including in response to health events necessitating out-of-pocket payments – by borrowing (or dissaving) and saving. Using consumption, which measures what households consume rather than what they receive in income, allows for this. But it leads to the perverse conclusion that a household that borrows to finance health care ends up being classified as better off than one with a similar income that does not need to spend on health care, and does not therefore borrow to finance it. Consumption gross of borrowing to finance health care may therefore overstate a household's living standards, making a household that is badly off appear to be relatively well off. By contrast, income may understate a household's living standards, making a household that is genuinely relatively well off (in consumption terms) appear to be relatively badly off.

The choice between consumption and income matters less when measuring the *incidence* of catastrophic spending than when measuring *inequality* in catastrophic spending. Choosing consumption gross of health expenditures may result in catastrophic spending occurring among households that appear to be well off, but may, in reality, be well off only because they are borrowing to finance their health spending. By contrast, choosing income may result in catastrophic spending occurring frequently among households that appear to be badly off, but may, in reality, be able to consume more than their income by borrowing or using savings. Similarly, for the measurement of impoverishment, choosing income might underestimate the long-term consequences of health expenditures, while choosing consumption might overstate the degree to which health expenditures result in impoverishment in the short term as households might be able to smooth their consequences over time by dissaving or borrowing *(1, 5)*.

In practice, analysts are not always free to choose whether to use consumption or income – many surveys allow only one to be computed. Measuring both has its challenges. A household's consumption is often different from its expenditures: families may grow vegetables and keep animals so their food consumption exceeds their expenditures on food; families may own their home outright so their consumption of 'housing' exceeds their expenditures on housing items; and so on. Often attempts are made to go beyond expenditure to get a measure of consumption, by capturing the value of home production, and imputing the consumption value of durables including housing *(6)*.

Measuring income also has its challenges, especially in countries where a large fraction of the population is not in formal employment. In low-income and lower-middle-income countries, it has traditionally been claimed that measuring consumption is simpler than measuring income, while in upper-middle income and high-income countries, it has traditionally been claimed that income can be measured satisfactorily. Recent years have seen changes in these positions, with income (and consumption) being estimated in an increasing number of surveys in low-income and lower-middle-income countries, and the difficulties of measuring income being increasingly acknowledged in upper-middle income and high-income countries. This report mostly uses consumption rather than income; in a small number of countries, however, income is used because consumption is not available; and for a selection of countries where both are available, results on inequalities in catastrophic spending are presented using both.

Defining and measuring ability to pay

Some studies do not relate out-of-pocket spending to a household's actual consumption or income but instead relate out-of-pocket spending to a household's consumption or income less an amount of money deemed required for necessities, such as food and housing. This adjustment is argued to better capture a household's ability or capacity to pay for health expenditures. One approach *(1)* to define ability to pay is therefore to deduct actual food expenditure from consumption, and relate out-of-pocket spending to nonfood consumption. Another *(2, 3)* is to deduct an estimate of the amount of money a household requires to meet its basic food needs. [2] A third approach *(4)* is to deduct the prevailing poverty line, essentially an allowance for basic needs. A fourth approach *(7)* is to deduct an amount of money representing the amount a household needs to meet basic food and shelter needs. The main results in the report employ two methods: no deduction for necessities; and a deduction for actual food spending (the first of the deduction approaches). It also discusses preliminary findings for 25 European countries conducted by the WHO Regional Office for Europe based on the fourth of the deduction approaches. Since food expenditures do not rise proportionately with income, and, in the other approaches, deductions for food, housing and utilities are usually fixed amounts, making these adjustments disproportionately affects households at low levels of consumption and income. Empirically catastrophic spending is usually less concentrated among "the poor" (or more concentrated among "the rich") when the budget share approach is used (Box 2.2).

[2] The food allowance is set equal to average food spending among households whose food spending share (as a percentage of total consumption) is in the 45th to 55th percentile range, the assumption being that, at least in low- and middle-income countries, the food intake of this group averages 2000 kilocalories.

Box 2.2. Different ways to measure catastrophic spending on health

Some studies define out-of-pocket health expenditures as catastrophic when they exceed a given percentage (for example, 10% or 25%) of income or consumption. This so-called 'budget share' approach is adopted in SDG 3.8.2. Empirically catastrophic spending is usually less concentrated among "the poor" (or more concentrated among "the rich") when the budget share approach is used.

Other studies relate health expenditures to income or consumption less a deduction for necessities rather than to total income or consumption. The argument is that everyone needs to spend at least some minimum amount on basic needs such as food and housing, and these absorb a larger share of a poor household's consumption or income than that of a rich household. 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 their budget on health care and still have enough resources left over not to experience financial hardship.

There are different approaches to deducting expenditures for basic needs. The main differences between them include: deducting actual spending versus a standard amount; using one item or a basket of items; the method used to derive the standard amount; and treatment of households whose actual spending is below the standard amount.

Some studies deduct all of a household's actual spending on food *(1)*. However, although poor households often devote a higher share of their budget to food, it may not be a sufficient proxy for non-discretionary 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 on health care will appear to have greater capacity to pay than households that spend more on food.

A second approach, aimed at addressing the role of preferences in food spending, is to deduct a standard amount from a household's total resources to represent basic spending on food *(2, 3)*. In practice, it 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 the actual food and the standard food approaches therefore treat households whose actual food spending is below the standard amount in the same way. Nevertheless, with the standard food approach, catastrophic spending may be less concentrated among the rich than with the actual food spending approach.

A third approach is to deduct the prevailing poverty line, essentially an allowance for all basic needs *(4)*. Depending on the poverty line used, this is likely to result in a greater concentration of catastrophic spending among the poor than the rich, compared to the budget share approach. It also has the merit of providing a link between catastrophic health expenditures and impoverishment: those 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 catastrophic spending larger than one are pushed into poverty by their health spending.

Building on the second and third approaches, in the WHO European Region an amount representing spending on three basic needs (food, housing (rent) and utilities) is deducted consistently for all households *(7)*. As a result, catastrophic expenditure is more likely to be concentrated among the poor with this approach, compared to the budget share approach. It also provides a link between catastrophic health spending and impoverishment (Box 2.7).

Poverty lines

This report uses two different poverty lines in measuring impoverishment due to out-of-pocket spending. The first is the international $1.90-a-day line measured in 2011 PPPs. This is often referred to as the 'extreme poverty line' which was estimated at $1.25-a-day in 2005 PPPs, and underlies SDG target 1.1 *(8)* The second is a $3.10-a-day international poverty line in 2011 PPPs, which updates the $2.00-a-day poverty line in 2005 PPPs commonly used for lower-middle-income countries *(8)*.[3]

For global monitoring, this report focuses on international poverty lines. Elsewhere *(9)*, results are reported for a relative poverty line, set at 50% of median household consumption – which comes closest to the common definition of a poverty line in high-income countries. As countries and regions assess their own progress towards UHC, they could also use relevant locally defined poverty lines (national or regional).

As the rest of this chapter will show, a lot of progress has been made in monitoring catastrophic and impoverishing health spending since the 2015 report on universal health coverage (Box 2.3).

[3] In October 2017, the World Bank revised the $3.10-a-day poverty line to $3.20-a-day.

Box 2.3. Financial protection 2015–2017 monitoring: what has changed?

- **More countries.** The 2015 UHC global monitoring report (UHC GMR) analyzed 37 countries representing one sixth of the world's population. This report analyses 132 countries representing 93% of the world's population in 2015.
- **More countries with trend data.** The 2015 report analysed trend data for 23 countries. This report analyses trend data for 93 countries. Moreover, for many countries, the report uses more than two years' worth of data. In total, this report uses 553 datapoints for catastrophic spending and 516 for impoverishment.
- **Quality checks and country consultations.** The original dataset consisted of 971 household surveys, each of which was analysed. The estimates of per capita consumption and the health budget share were then compared with WHO and World Bank data, and the time-series of the catastrophic and impoverishing estimates were checked manually. Most of the retained datapoints were shared with countries' nominated focal points through a WHO consultation process.
- **Different catastrophic payment indicators.** The 2015 report defined catastrophic payments as those exceeding 25% of total consumption, 40% of nonfood consumption, and 40% of consumption less a fixed expenditure allowance for food. This report presents results for 10% of consumption and 25% of consumption, both of which are official SDG indicators, as well as 40% of nonfood consumption. In addition, results are presented for selected European countries for 40% of consumption less a fixed allowance for food and housing expenditures.
- **More evidence on inequalities in catastrophic spending.** The 2015 report showed inequalities in catastrophic spending incidence defined as payments exceeding 25% of total consumption across quintiles of total consumption. This report also reports inequalities for 40% of nonfood consumption across quintiles of total consumption and for the SDG indicators across income quintiles for a subsample of the 132 countries.
- **Impoverishment measures based on international poverty lines in 2011 PPPs.** The 2015 report used international poverty lines in 2005 PPPs, specifically the $1.25-a-day extreme poverty line and the $2.00-a-day line of moderate poverty. In addition, it adjusted poverty lines to match the economic level of each country. This report uses international poverty lines in 2011 PPPs as of September 2011. It includes the $1.25-a-day poverty line (now $1.90-a-day) and the updated $2.00-a-day line (now $3.10-a-day). This report does not adjust poverty lines to match the economic level of each country.
- **Different measures of impoverishment.** The 2015 report measured the proportion of the population neither pushed into poverty nor further pushed into poverty. This report measures the incidence of impoverishment (the population pushed into poverty) as the difference in the poverty headcount with and without out-of-pocket spending included in household total consumption or income. This report does not measure the fraction of the population neither pushed into poverty nor further pushed into poverty, but it does assess the contribution of out-of-pocket payments to the depth of poverty. This captures the monetary impact of out-of-pocket expenditures for both households pushed into poverty and those pushed further into poverty due to out-of-pocket health spending.
- **Trends in catastrophic payments and impoverishment.** The 2015 report measured progress over time for 23 countries. This report presents annual percentage point changes in incidence for 93 and 84 countries respectively.
- **Global and regional estimates for three years.** The 2015 report presented mean and median rates of catastrophic and impoverishing spending in the 37 countries, with different countries having different survey years. This report estimates global and regional incidence by estimating rates of catastrophic and impoverishing spending for each country in the world for each of three years – 2000, 2005 and 2010.

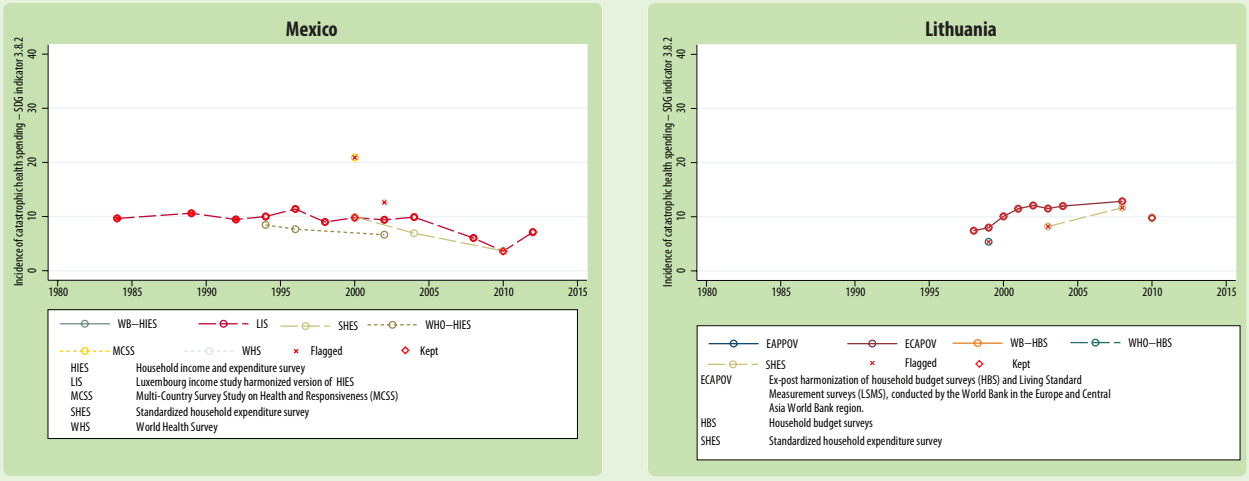
Global Data – and dealing with 'missing data'

Household surveys

To measure the incidence of catastrophic spending and impoverishment, data are needed from nationally representative household surveys containing information on out-of-pocket health spending, and household consumption or expenditure or income. Availability of data to produce global estimates may not necessarily align with availability of data at national or regional levels. For this report, WHO and the World Bank have assembled the largest global database on financial protection to date. Regional and national collaborations are also ongoing but the results of such collaborations have not been included in the global dataset. The process described hereafter focuses on the assembly of the global database on financial protection. Similarly, all results reported here are based on the global dataset, unless otherwise indicated. For the assembly of the global dataset, a total of 1,566 potentially suitable household surveys were identified from microdata catalogues and other sources. Of these, 595 were discarded, because they were either inaccessible or lacked key variables for the analysis. The remaining 971 datasets were analysed, and estimates of catastrophic spending and impoverishment were obtained, along with ancillary data. These 'datapoints' were then subject to a quality assurance process *(9, 10):* datapoints not close enough to a benchmark value were discarded, as were datapoints that did not form part of a consistent time series (Box 2.4).

Box 2.4. Example of data screening process on financial protection

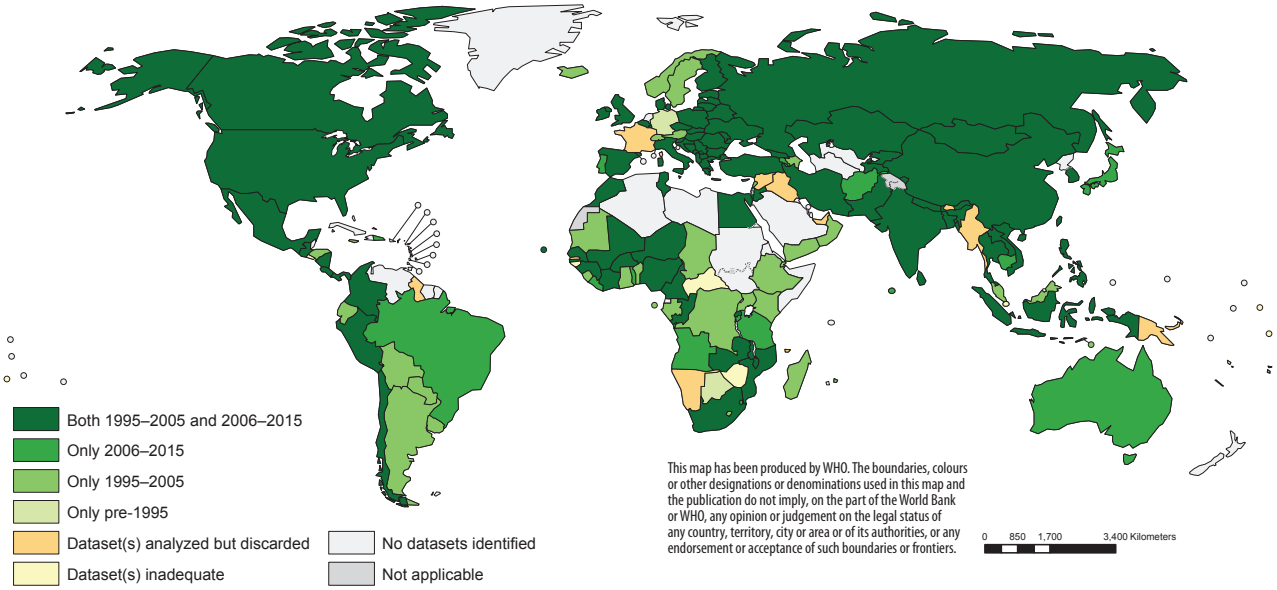
The trends in the various series for each country were plotted as in the two examples below, which show catastrophic spending rates (at the 10% threshold) for Lithuania and Mexico. Datapoints that were identified as of concern in the quality assurance process were flagged. There was a preference for a single series for each country; in some cases, this meant retaining flagged datapoints providing they were not too problematic.



At the end of this confirmation process, 553 datapoints for catastrophic spending (512 for impoverishment) remained from 132 countries or territories (121 in the case of impoverishment) spanning the period 1984–2015. These breakdown across countries as indicated in Fig. 2.1. Overall, the global dataset has information on countries representing at least 90% of the world population in 2015.[4] There are, however, gaps – some countries did not have a usable survey at all; others only had a pre-2005 usable survey.

[4] Ninety-three per cent for the analysis of catastrophic health spending and 90% for impoverishment.

Fig. 2.1. Data availability for financial protection in the global database



Notes: Total number of countries or territories can be split into those without any data identified to produce global estimates (61); those with datasets identified analyzed but discarded (12); dataset identified but found inadequate (10); with datasets available only pre-1995 (2); only for the period 1995–2005 (35); only for the period 2006–2015 (17); for both periods 1995–2005 and 2006–2015 (79). Availability of data to produce global estimates 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.

Missing data, global and regional estimation

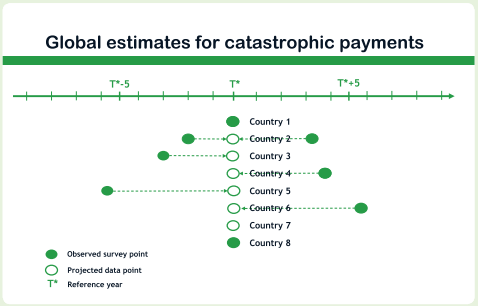
Very few countries had a survey in each of the three years selected for the global and regional estimation exercise – 2000, 2005 and 2010. Methods needed to be developed therefore to get around this 'missing data' problem. The global estimates for the share of the population facing catastrophic or impoverishing payments are generated by 'lining up' the underlying survey data into reference years. This process is similar to the process used by the World Bank to generate the global poverty estimates *(11)*.

The same principles are used to construct global incidence estimates for the reference years 2000, 2005 and 2010. For each of these reference years, survey data are included from up to five years before and up to five years after the reference year. The lining up process is described in the text and illustrated in the figure in Box 2.5, for a reference year T*, and a +/– five-year window around the reference year. Global estimates are produced for the incidence of catastrophic and impoverishing health spending but not for the depth of impoverishment.

Box 2.5. Estimation of country-level data to produce regional and global estimates of catastrophic and impoverishing health spending

Lining up survey data into reference years

1. **Reference year point.** In countries for which there is an observed datapoint in the reference year T* (country 1 and country 8), this point is used.
2. **Two points within band.** When there are at least two datapoints around the reference year (country 2) and in the window [T*–5; T*+5], linear interpolation is used to project the value of catastrophic payments in the reference year.
3. **One point within band.** If only one datapoint is available either before (country 3) or after (country 4) the reference year, and within the +/– five-year window, a multilevel model of the rate of catastrophic payments (impoverishment) is first estimated using the aggregate share of OOP over total consumption expenditure (and household final consumption) as explanatory variable. Then the estimated elasticity of catastrophic payments (impoverishment) to the aggregate share of OOP over total consumption (controlling for household final consumption) is used to project the observed survey point in the reference year.
4. **Fitted.** For countries with no datapoint in the 10-year window around the reference year (country 5, 6 and 7), the model mentioned in (3) above is used to project the survey point to the reference year, using the share of aggregate OOP over total consumption if the variable is available. If this variable is not available, we use the regional median value of catastrophic (impoverishing) payments instead to impute the datapoint in the reference year.



The breakdown of datapoints in each of these four categories is provided in the following table. For example, for the reference year 2010 and the estimation of the incidence of catastrophic health spending, there are a total of 101 countries with at least one datapoint between 2005 and 2015; these countries together represent 86.1% of the world's population.

Categories of datapoints used to construct global estimates of catastrophic and impoverishing health spending

	[1995–2005] Ref. year 2000				[2000–2010] Ref. year 2005				[2005–2015] Ref. year 2010			
	Countries (No.)		Global population (%)		Countries (No.)		Global population (%)		Countries (No.)		Global population (%)	
	Cata.	Impov.	Cata.	Impov.	Cata.	Impov.	Cata.	Impov.	Cata.	Impov.	Cata.	Impov.
Reference year point	27	25	38.4	38.2	36	34	19.9	19.2	54	54	31.4	31.4
Two points within band	19	13	6.6	5.2	29	23	54	52.5	13	13	21.8	21.8
One point within band	61	42	38	34.2	48	43	15.5	13.5	34	27	32.9	29.4
Total observed	107	80	83	77.6	113	100	89.4	85.2	101	94	86.1	82.6
Fitted	15	10	6.9	4.7	11	2	0.8	0.1	23	12	4.1	3.1
Regional median	89	103	10.1	17.1	87	92	9.8	14.5	87	88	9.8	14.1

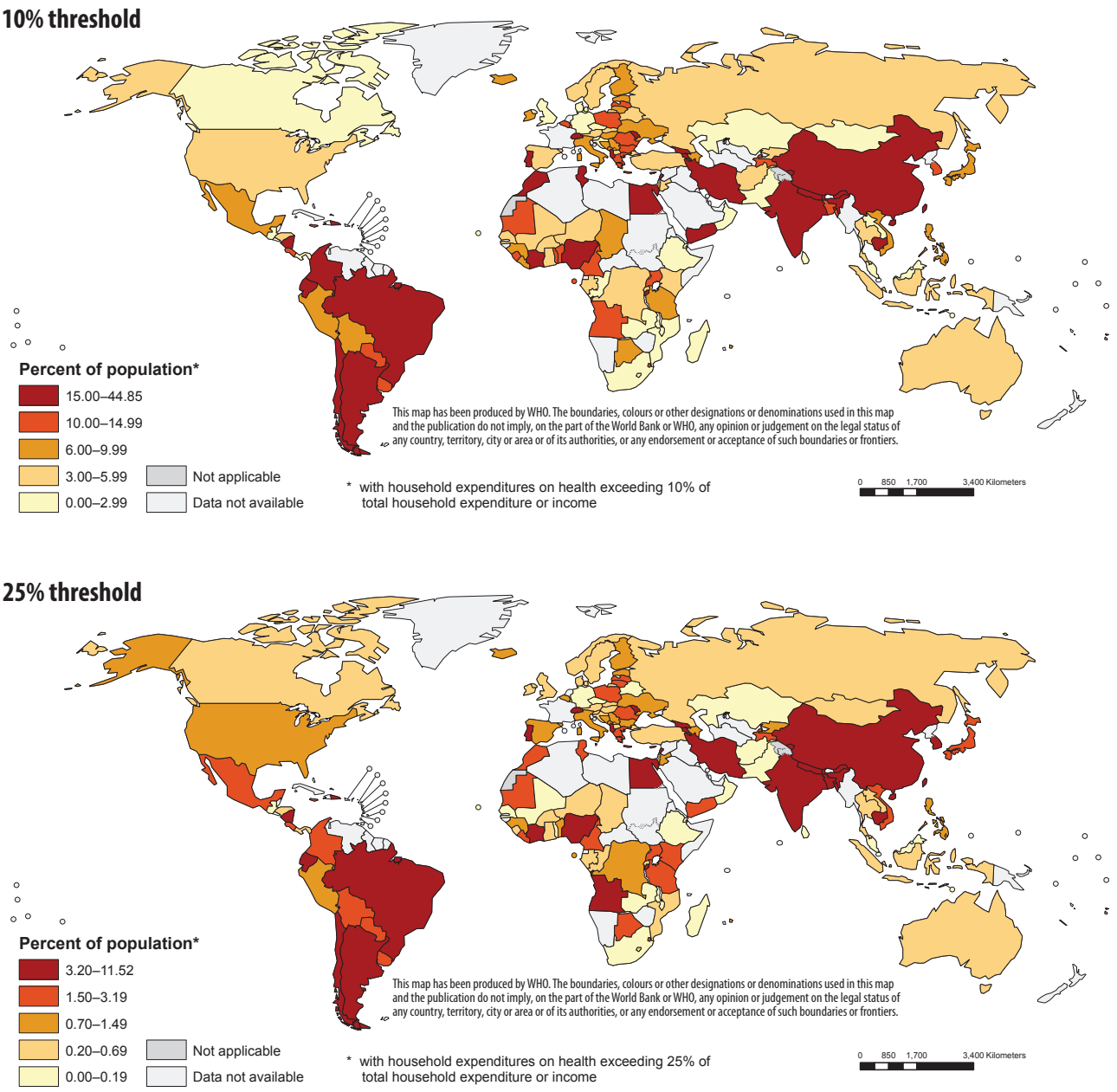
Cata: catastrophic health spending; Impov: impoverishing health spending.

Levels and trends in catastrophic spending: the SDG 3.8.2 indicators

Cross-country variation in catastrophic spending

The incidence of catastrophic out-of-pocket payments in the most recent surveys available varies markedly across countries (Fig. 2.2). The mean and median catastrophic out-of-pocket payment rates at the 10% threshold are 9.2% and 7.1% (IQR: 10.0). Rates are inevitably lower at the 25% threshold with mean and median incidence rates of 1.8% and 1.0% (IQR: 2.1). Coincidentally, the median incidence at the 25% threshold is the same as that reported in the first UHC GMR despite fewer countries *(37)* being used there (Box 2.3).

Fig. 2.2 Incidence of catastrophic health spending: SDG indicator 3.8.2, latest year



Notes: 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. Global estimates are based on 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.

Global and regional estimates of catastrophic spending

Aggregating across countries, it is estimated that in 2010, 808 million people incurred catastrophic spending at the 10% threshold, equivalent to 11.7% of the world's population in 2010. At the 25% threshold, the figures are 179 million and 2.6% (Table 2.1). In 2010, Asia is the region which concentrates most of the population facing catastrophic payments. Between 66% and 77% of the population exposed globally is from Asia, depending on the threshold, while the region represents a little less than 60% of the world population. The new data contrasts with earlier studies of catastrophic health spending in terms of the number of people affected (Box 2.6). In terms of incidence rates of catastrophic payments, there are substantial variations across UN regions with Latin America and the Caribbean having the highest rate of catastrophic spending on health at the 10% threshold (14.8%) in 2010, Asia having the second-highest rate (12.8%), Northern America having the second-lowest rate (4.6%), and Oceania having the lowest rate (3.9%).

Table 2.1. Global and regional trends in catastrophic payments – SDG indicator 3.8.2

10% threshold

	2000		2005		2010	
	% Population	Million	% Population	Million	% Population	Million
Global	9.7%	588.5	11.4%	741.3	11.7%	808.4
Africa	8.7%	70.7	10.3%	94.1	11.4%	118.7
Asia	10.4%	381.6	12.2%	479.2	12.8%	531.1
Latin America and the Caribbean	13.4%	70.5	17.5%	98.3	14.8%	88.3
Northern America and Europe	6.2%	64.6	6.5%	68.6	6.4%	68.8
Northern America	5.5%	17.2	5.3%	17.4	4.6%	15.6
Europe	6.5%	47.4	7.0%	51.2	7.2%	53.2
Oceania	3.5%	1.1	3.4%	1.1	3.9%	1.4

25% threshold

	2000		2005		2010	
	% Population	Million	% Population	Million	% Population	Million
Global	1.9%	112.8	2.4%	154.9	2.6%	179.3
Africa	1.5%	12.3	1.9%	17.7	2.5%	25.6
Asia	2.1%	77.1	2.8%	108.7	3.1%	128.7
Latin America and the Caribbean	2.6%	13.6	3.2%	18.0	2.5%	14.9
Northern America and Europe	0.9%	9.6	1.0%	10.3	0.9%	9.8
Northern America	1.0%	3.1	0.9%	3.0	0.8%	2.6
Europe	0.9%	6.5	1.0%	7.3	1.0%	7.2
Oceania	0.5%	0.1	0.4%	0.1	0.5%	0.2

Notes: The World Bank and WHO 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. Global estimates are based on data available 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.

Box 2.6. Previous global estimates of catastrophic spending

The only global study of catastrophic spending prior to the 2015 UHC GMR was conducted by WHO in 2007, based on 116 surveys covering 89 countries with a median survey year of 1997. The study defined catastrophic spending as out-of-pocket payments exceeding 40% of total consumption net of an allowance for food expenditure. It reported mean and median rates of catastrophic spending of 2.3% and 1.5% respectively, and concluded that an estimated 150 million people globally incur catastrophic spending annually *(2, 10)*.

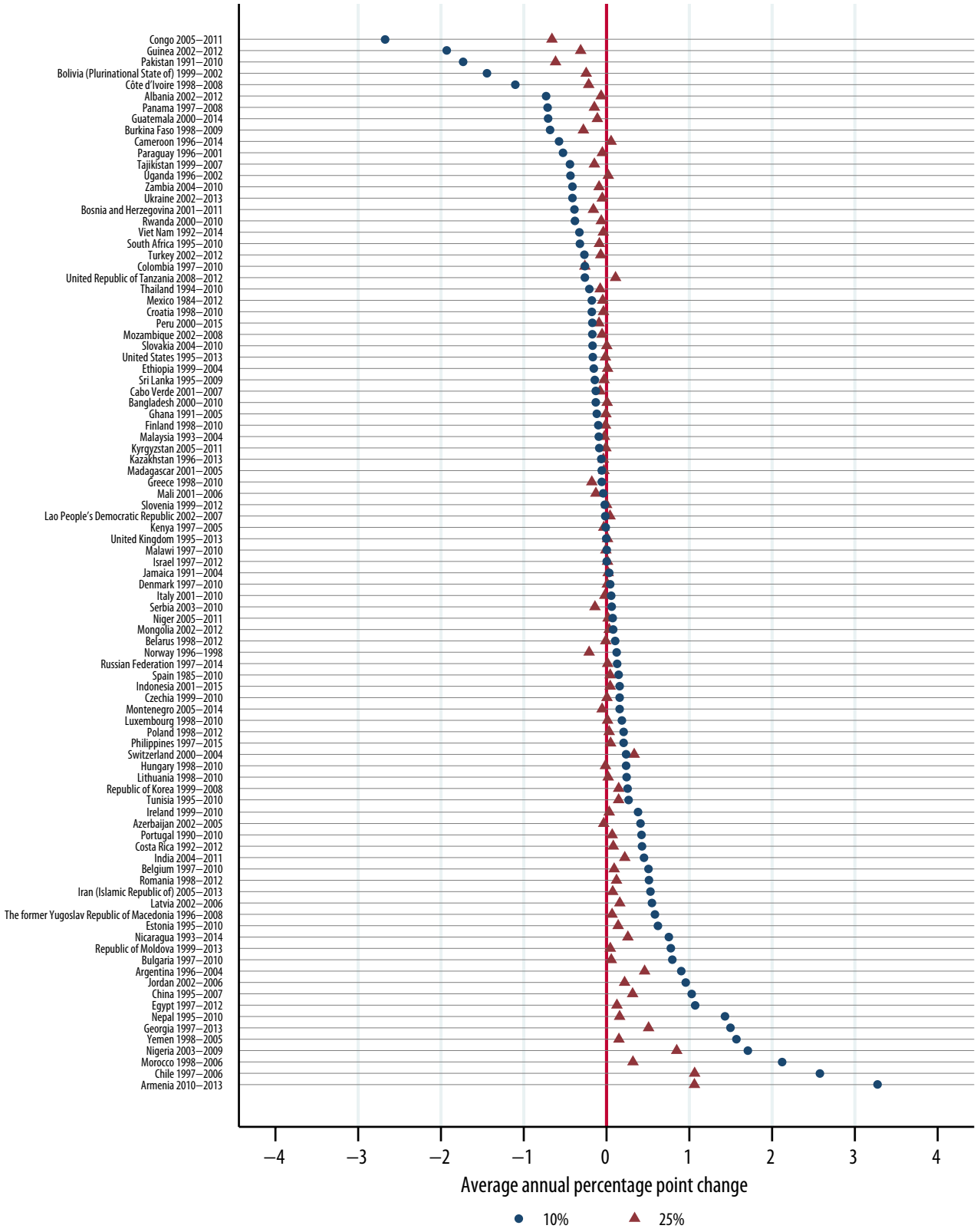
The new global data in this report has an additional 418 datasets for 44 additional countries, and a median year of 2004. Using a definition of catastrophic expenditures that comes closest to that used in the 2003 WHO study, i.e. out-of-pocket health expenditures exceeding 40% of nonfood consumption, global incidence is estimated to be 2.7% in 2000 or 166 million people. This increases to 3% in 2005 (193 million people) where it is estimated to have stayed up to 2010; but with a growing population, this translates into an additional 15 million people spending more than 40% of their nonfood consumption out-of-pocket on health. In terms of incidence, the increase is less sharp between 2000 and 2005 with the nonfood measure than with the SDG indicators; the nonfood measure shows no change between 2005 and 2010 while the SDG 3.8.2-10% and SDG 3.8.2-25% indicators show an increase.

Trends in catastrophic spending

At the 10% threshold, the average annual change in catastrophic spending incidence ranges from –2.7% per annum in Congo (2005–2011) to 3.3% per annum in Armenia (2010–2013) (Fig. 2.3). In 48 (52%) of the 94 countries for which we have two or more years of data, the incidence of catastrophic out-of-pocket spending increased over time. At the 25% threshold, catastrophic payment incidence increased in 54% of countries. In the 2015 UHC GMR only 48% of the 23 countries with trend data had an increasing rate. The population-unweighted median annual changes in catastrophic out-of-pocket payment rates are 0.03% and 0.01% per annum for the 10% and 25% thresholds respectively, while the population-weighted figures are 0.45% and 0.22%; the fact the latter are larger than the former means that catastrophic payment incidence has been falling more slowly or rising more quickly in more populous countries.

Both the percentage and the size of the population facing catastrophic payments have increased at all thresholds since 2000 (Table 2.1). At the 10% threshold, the region with the fastest increase in population facing catastrophic payments is Africa (+5.9% per annum on average) followed by Asia (+3.6% per annum). Northern America is the only region where both the incidence and the population exposed decreased (–0.9% per year).

Fig. 2.3. Annual percentage point change in incidence of catastrophic health spending: SDG indicator 3.8.2



Notes: 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. Global estimates are based on data available 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.

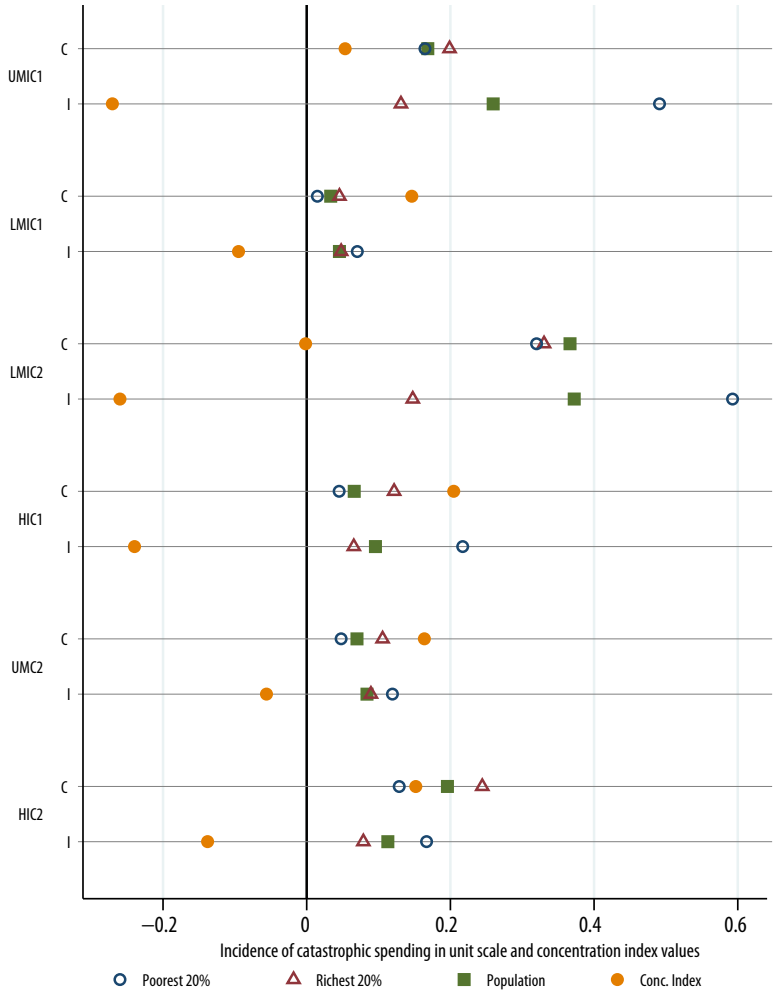
Inequalities in catastrophic spending

As already explained (Box 2.2), whether catastrophic spending incidence is higher among the poor or rich likely depends in part on (a) whether living standards are measured using consumption or income, and (b) any deduction is made from income or consumption for expenditure on necessities.

The sensitivity of inequality to the choice between income and consumption is due to the fact that a low-income household may appear relatively well off if its living standards are assessed using consumption gross of out-of-pocket health spending if it borrows (or draws on its savings) to finance its out-of-pocket spending. Because of this, we will likely find out-of-pocket health spending more highly concentrated among well-off households (or less concentrated among badly off households) if we measure living standards using consumption [gross of out-of-pocket spending] than if we measure living standards using [current] income.

This is indeed what we find across countries at different income levels where we have both consumption and income in the dataset (Fig. 2.4 presents results for a subset of these countries). If we rank households by income, we find the least well-off fifth of the sample have a relatively high rate of catastrophic spending. But if we rank households by consumption, we find the least well-off fifth have a relatively low rate. For this subset of countries, the concentration index for catastrophic spending incidence is always negative when households are ranked by income, indicating the poor face higher rates, and mostly positive when they are ranked by consumption gross of out-of-pocket expenditures, indicating the well off face higher rates.

Fig. 2.4. Inequalities in incidence of catastrophic health spending SDG indicator 3.8.2, ranking by consumption vs. income, latest year, selected countries



Notes: C: households ranked by consumption; HIC: higher-income country; I: households ranked by income; LMIC: lower-middle-income country; UMIC: upper-middle-income country.

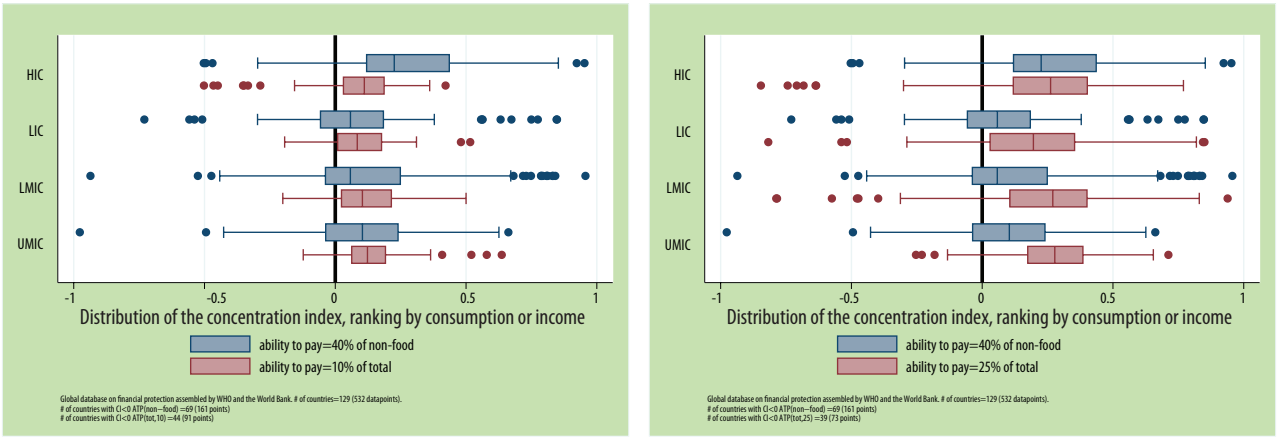
Catastrophic health spending is defined as out-of-pocket expenditures exceeding 10% of household total consumption or income (budget share approach, SDG indicator 3.8.2). The figure shows the incidence of catastrophic expenditures in the unit scale (e.g. 0.2 means 20%) at the national level (population) as well as for the poorest and richest 20%. The figure also shows the concentration index for the incidence of catastrophic expenditure for two HICs,UMICs and LMICs.

Source: Calculations by the World Bank from the *Luxembourg Income Study* harmonized datasets.

Whether or not the incidence of catastrophic spending is more concentrated among the poor also depends on whether deductions for expenditures on necessities are made, and on how these deductions are made, as discussed earlier in Box 2.2.

Fig. 2.5. presents results for 129 countries and 532 datapoints. It shows that when ranking households by total consumption or income, the incidence of catastrophic spending defined as 40% of nonfood consumption (the actual food approach) is more often concentrated among the poor than when catastrophic spending is defined as 10% or 25% of total consumption or income (i.e. no deduction is made for spending on necessities). The concentration index for the actual food approach is negative for 30% of datapoints overall, but these are mainly in low- and middle-income countries; it is mainly positive in high-income countries. The concentration index for the budget share approach is negative in only 17% and 14% of datapoints when the 10% and 25% threshold of total consumption respectively are used. The measure used by WHO/Europe finds that catastrophic incidence is consistently concentrated among the poor across the 25 countries included in the study (Box 2.7).

Fig. 2.5 Inequalities in incidence of catastrophic spending using the SDG indicator 3.8.2, or the actual nonfood approach, latest year



ATP: Ability to pay; CI: concentration index; HIC: higher-income country; LMIC: lower-middle-income country; LIC: low-income country; UMIC: upper-middle-income country.

Notes: Catastrophic health spending is defined as out-of-pocket spending exceeding 10% and 25% of total consumption or income (budget share approach with two thresholds – SDG indicator 3.8.2), as well as out-of-pocket spending exceeding 40% of nonfood consumption (actual food approach). The distribution of the concentration index across 129 countries, latest year is illustrated by the means of box-plots. The 129 countries are grouped according to the World Bank income group of the latest year (HIC, UMIC, LIC LMIC). For each group the median value of the concentration index corresponds to line which divides the box into two parts. The upper limit of the box indicates the value below which fall 75% of the concentration indices (the 75th percentile). The lower limit of the box indicates the value below which the concentration index falls (the 25th percentile). 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. Global estimates are based on a data availability for global monitoring which may not necessarily align with availability of data at national or regional levels.

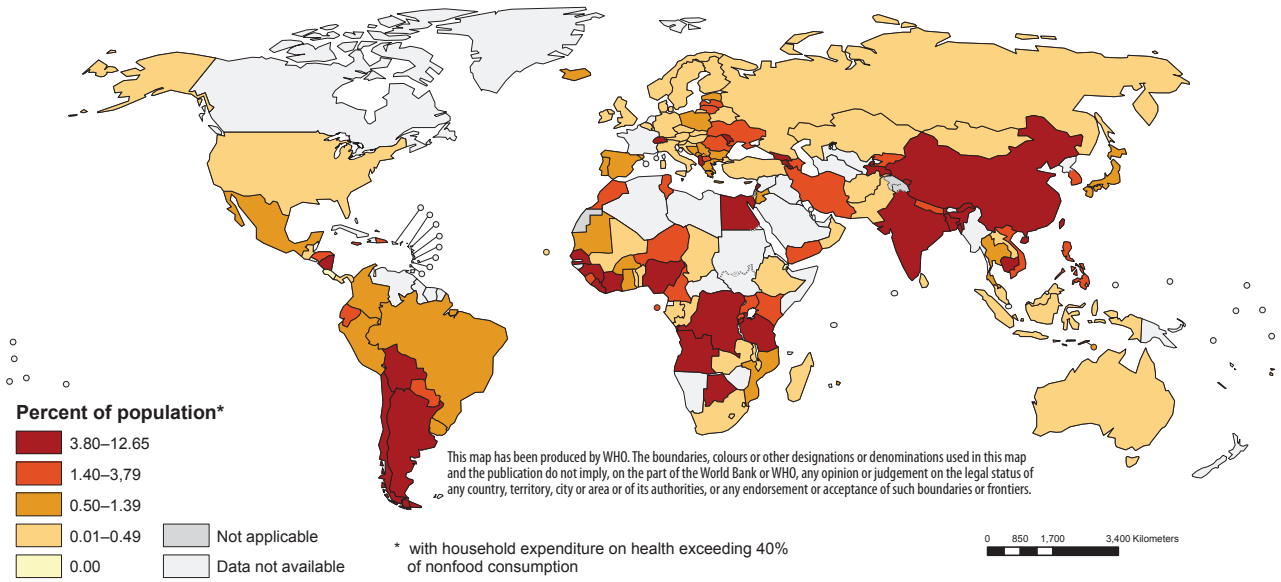
Source: Global database on financial protection assembled by WHO and the World Bank.

Levels and trends in catastrophic spending: non-SDG indicators

Nonfood spending as a measure of ability to pay

Setting the catastrophic payment threshold at 40% of nonfood consumption gives population-unweighted mean and median catastrophic incidence rates of 2.1% and 1.0%. Fig. 2.6 shows the incidence of catastrophic spending across the world using the nonfood measure, with, as in Fig. 2.2, cut-points selected so as to divide the countries with data into five equal-sized groups. The Americas are noticeably lighter in shade than in Fig. 2.2, and Africa and Asia (poorer regions by comparison) noticeably darker, reflecting the fact that the nonfood-based measure records a higher incidence of catastrophic spending among the poor than the total consumption measure. An estimated 208 million people (3% of the world's population) incurred catastrophic health spending using this definition (Table 2.2). The increase in the population facing catastrophic payments at a threshold of 40% of nonfood expenditure is driven entirely by Asia (+2.6% per annum) and Africa (+4.9% per annum). In the other regions, the exposed population is either stable (Oceania) or decreasing (Europe, Latin America and the Caribbean, North America).

Fig. 2.6 Incidence of catastrophic health spending, 40% nonfood consumption, latest year



Notes: 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. Global estimates are based on 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.

Table 2.2 Global and regional estimates for catastrophic payments defined using 40% nonfood consumption threshold

	2000		2005		2010	
	% Population	Million	% Population	Million	% Population	Million
Global	2.7%	166.8	3.0%	193.1	3.0%	208.2
Africa	2.6%	21.1	3.1%	28.6	3.3%	34.0
Asia	3.4%	124.3	3.7%	146.4	3.9%	160.8
Latin America and the Caribbean	1.9%	10.2	1.8%	9.8	1.1%	6.8
Northern America and Europe	1.1%	11.2	0.8%	8.2	0.6%	6.4
Northern America	0.5%	1.5	0.4%	1.2	0.3%	1.1
Europe	1.3%	9.7	1.0%	7.0	0.7%	5.3
Oceania	0.3%	0.1	0.2%	0.1	0.2%	0.1

Notes: 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. Global 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.

National and regional analyses have a vital role to play in identifying the factors that strengthen and undermine financial protection and highlighting implications and options for policy. Box 2.7 illustrates how this is done in the WHO European region.

Box 2.7. Monitoring financial protection in the WHO European Region

What is WHO/Europe doing? In 2014 the WHO European Region initiated a multi-year project to generate fresh evidence on financial protection using a new method of measuring catastrophic and impoverishing health spending and a comprehensive approach to monitoring. The project aims to monitor financial protection in a way that produces actionable evidence for policy; promotes pro-poor policies to break the link between ill health and poverty; and is relevant to all WHO Member States in the European Region, including high-income countries.

How is this approach different? First, the method developed to measure catastrophic out-of-pocket payments builds on the capacity to pay approach used by WHO as part of a broader UHC monitoring agenda and aims to address some of its limitations (Box 2.2) *(7, 12)*. It deducts consistently for all households a standard amount representing spending on three basic needs: food, housing (rent) and utilities. The standard amount is referred to as a basic needs or poverty line. With this approach, the incidence of catastrophic expenditure is more likely to be concentrated among the poor than with the budget share approach or with other capacity to pay approaches (Box 2.2). Second, households are classified according to their risk of being impoverished after out-of-pocket payments using the basic needs line. Third, the European Region is working with national experts to produce in-depth, context-specific analysis of financial protection over time to enhance policy relevance at country level.

In 2018, these country-specific reports will form the basis for a regional monitoring report that will review trends in the incidence and drivers of financial hardship over time within countries; trends in inequalities in financial protection within and across countries; and issues around access, including unmet need for health care. The regional report will also highlight examples of good practice and implications for policy.

What are the findings? Combining this method with context-specific analysis provides rich and actionable evidence for policy. Based on preliminary results for 25 countries in the WHO European Region *(7)* we find that:

- Households in the poorest quintile are most likely to experience catastrophic health spending in all countries.
- Outpatient medicines are a major driver of catastrophic health spending: in countries with a relatively high incidence of catastrophic health spending, most catastrophic out-of-pocket payments are for outpatient medicines; among poor households, most catastrophic out-of-pocket payments are for outpatient medicines in most countries.
- Changes in financial protection can be linked to changes in policy within a country and to policy differences across countries; in Latvia, for example, the abolition of co-payment exemptions after the economic crisis did not change the overall incidence of catastrophic health spending but did increase financial hardship for poor households *(13)*.
- Across countries, the incidence of catastrophic health spending rises steadily as the out-of-pocket share of total spending on health increases, but there are outliers; this highlights the importance of careful policy design, in addition to higher public spending on health, in strengthening financial protection.

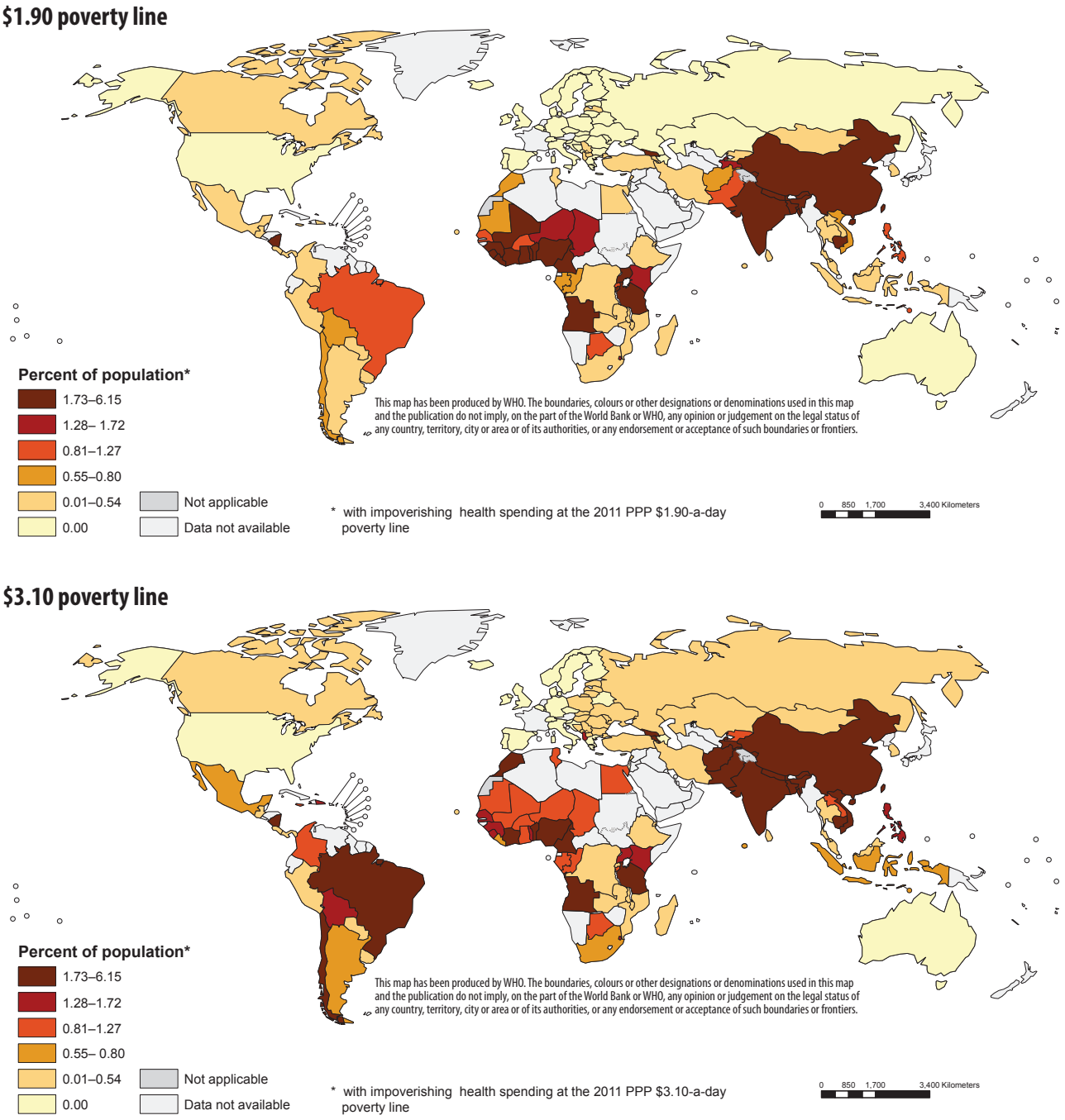
Which countries are covered by the WHO/Europe study: Albania, Austria, Croatia, Cyprus, Czechia, Estonia, France, Georgia, Germany, Greece, Hungary, Ireland, Kyrgyzstan, Latvia, Lithuania, Netherlands, Poland, Portugal, Republic of Moldova, Slovakia, Slovenia, Sweden, Turkey, Ukraine and United Kingdom.

Levels and trends in impoverishment due to out-of-pocket spending: non-SDG indicators

Cross-country variation in impoverishment

The incidence of impoverishing out-of-pocket payments at the $1.90-a-day poverty line in our most recent surveys varies markedly across countries (Fig. 2.7), from 0.0% in all high-income countries to 4.5% in a lower- middle-income country. The population-weighted median rates of impoverishment are 1.86% at the $1.90-a-day line, and 2.44% at the $3.10-a-day line.

Fig. 2.7. Incidence of impoverishment due to out-of-pocket health spending – 2011 PPP $1.90-a-day and 2011 PPP $3.10-a-day poverty lines, latest year



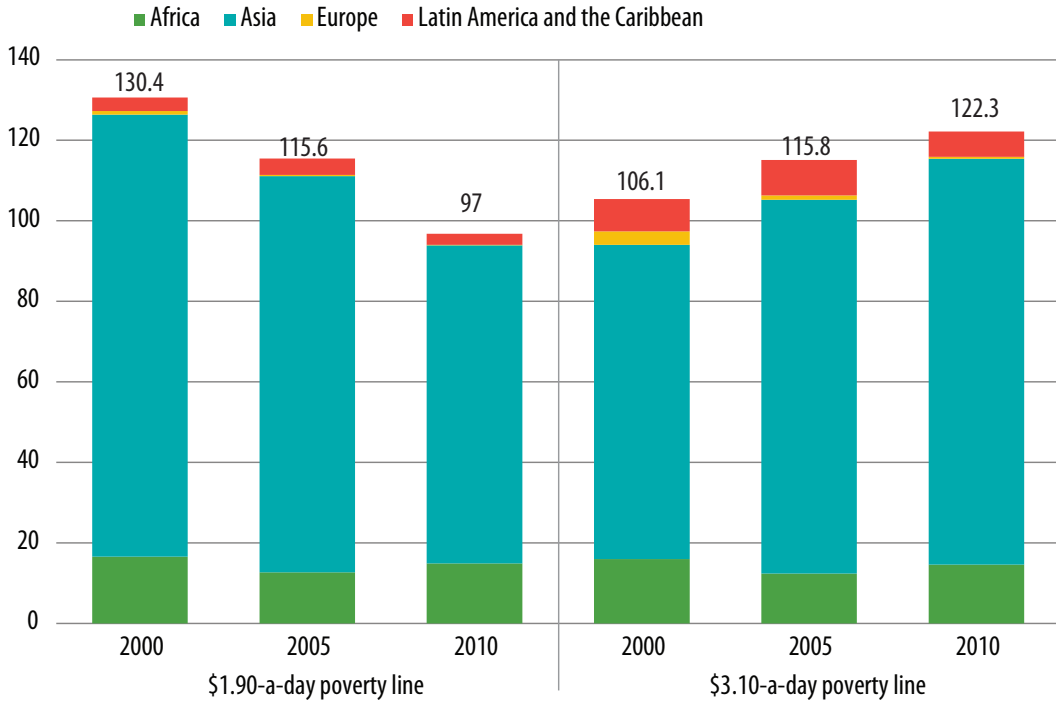
Notes: WHO and World Bank estimated values are based on standard definitions and methods to ensure cross-country comparability which may not correspond to the methods used at regional and/or national level to monitor impoverishment due to out-of-pocket spending. In particular, the international poverty lines of $1.90-a-day and $3.10-a-day are more appropriate for low-income and lower-middle-income countries, with the $1.90-a-day line being geared to extreme poverty – rarely seen in upper-middle-income and high-income countries. Global 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.

Global and regional estimates of impoverishment

Aggregating across countries, it is estimated that in 2010, 97 million people were impoverished by out-of-pocket health spending at the $1.90-a-day poverty line, equivalent to 1.4% of the world's population (Fig. 2.8). At the $3.10-a-day poverty line, the figure is 122 million (1.8%). Estimates for 2010 vary across UN regions, with Asia and Africa having the highest rates of impoverishment at the $1.90-a-day poverty line (1.9% and 1.4% respectively). These two regions account for 97% of the world's population impoverished by out-of-pocket health spending at the $1.90-a-day poverty line.

Fig. 2.8. Global and regional trends in impoverishment due to out-of-pocket health spending – 2011 PPP $1.90-a-day and 2011 PPP $3.10-a-day poverty lines



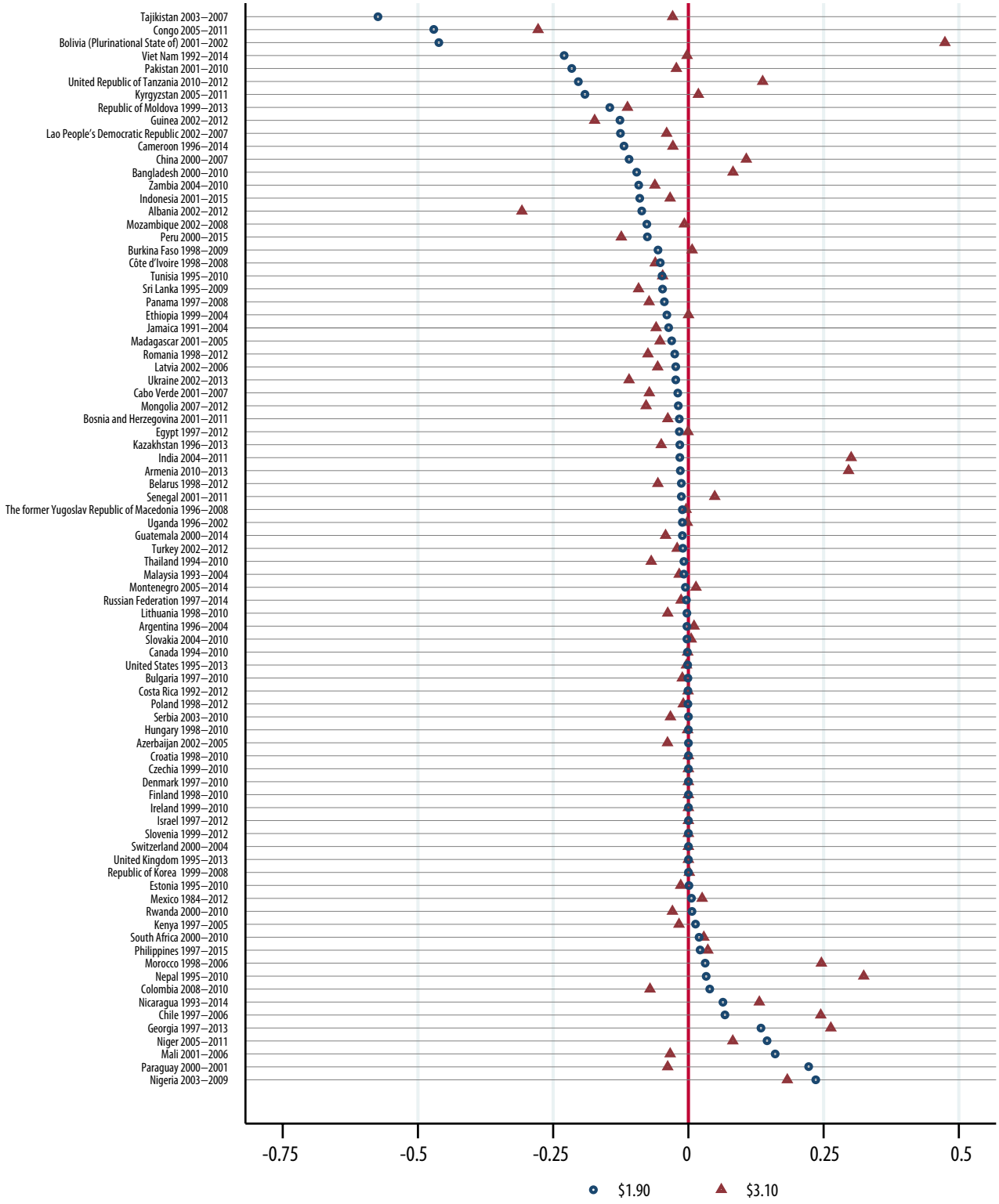
Notes: North America and Oceania not shown in the figure because at both international poverty lines impoverishment rates in these two regions are close to or equal to zero. The WHO and World Bank estimated values are based on standard definitions and methods to ensure cross-country comparability which may not correspond to the methods used at regional and/or national level to monitor impoverishment due to out-of-pocket spending. In particular, the international poverty lines of $1.90-a-day and $3.10-a-day are more appropriate for low-income and lower-middle-income countries, with the $1.90-a-day line being geared to extreme poverty – rarely seen in upper-middle-income and high-income countries. Global 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.

Trends in impoverishment

At the $1.90-a-day line, the average annual change in impoverishment ranges from 0.6% per annum in Tajikistan (2003–2007) to 0.2% per annum in Nigeria (2003–2009) (Fig. 2.9). In 17 (20%) of the countries for which we have two or more years of data, the incidence of impoverishing out-of-pocket spending using the $1.90

Fig. 2.9. Annual percentage point change in incidence of impoverishment due to out-of-pocket health spending – 2011 PPP $1.90-a-day and 2011 PPP $3.10-a-day poverty lines



Notes: 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 impoverishment due to out-of-pocket spending. In particular, the international poverty lines of $1.90-a-day and $3.10-a-day are more appropriate for low-income and lower-middle-income countries, with the $1.90-a-day line being geared to extreme poverty – rarely seen in upper-middle-income and high-income countries. Global 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.

poverty line increased over time. The figure for the $3.10 line is 29%. The population-weighted median annual changes in impoverishing out-of-pocket payment rates are 0.02% per annum at the $1.90-a-day line and 0.11% per annum at the $3.10-a-day line.

At the $1.90-a-day poverty line, the number and percentage of people globally impoverished fell between 2000 and 2010 from 130 million (2.1%) to 97 million (1.4%) (Fig. 2.8). By contrast, at the $3.10-a-day line, the percentage and number of people impoverished increased – from 106 million (1.7%) to 122 million (1.8%). The incidence of impoverishment has evolved differently across UN regions between 2000 and 2010: Africa has seen reductions at both the $1.90 and $3.10 lines, while Asia saw a marked reduction at the $1.90 line and an increase at the $3.10 line with 2010 values above 2000 ones. This reflects the rise in living standards in Asia, pushing the population above the higher poverty line and increasing the likelihood of families being pushed across the poverty line, rather than further below it, through out-of-pocket spending on health.

Depth of impoverishing health spending

The poverty gap increase attributable to out-of-pocket health expenditures, in the most recent surveys available for global monitoring, varies markedly across countries (Fig. 2.10) at the $3.10-a-day poverty line, from 0 cents per capita in international dollars in high-income countries to a maximum of 12 cents per capita in low-income countries at 2011 PPP factors. This amount can be interpreted as the per capita amount by which on average out-of-pocket spending pushes or further pushes the household below the poverty line. The population-weighted median of the poverty gap increase attributable to out-of-pocket health expenditures among the 121 countries, is 1.22 cents per capita in 2011 PPPs at the 2011 PPP $1.90-a-day line and 3.74 cents per capita in 2011 PPPs at the $3.10-a-day line.

For the 84 countries for which surveys are available for two or more years, the population-weighted median annual changes in the poverty gap increase attributable to out-of-pocket health expenditures, are -0.12 cents per annum in 2011 PPPs at the $1.90-a-day line and-0.03 cents

Fig. 2.10. Poverty gap due to out-of-pocket health spending expressed in per capita international dollar amounts– 2011 PPP $1.90-a-day and 2011 PPP $3.10-a-day poverty lines

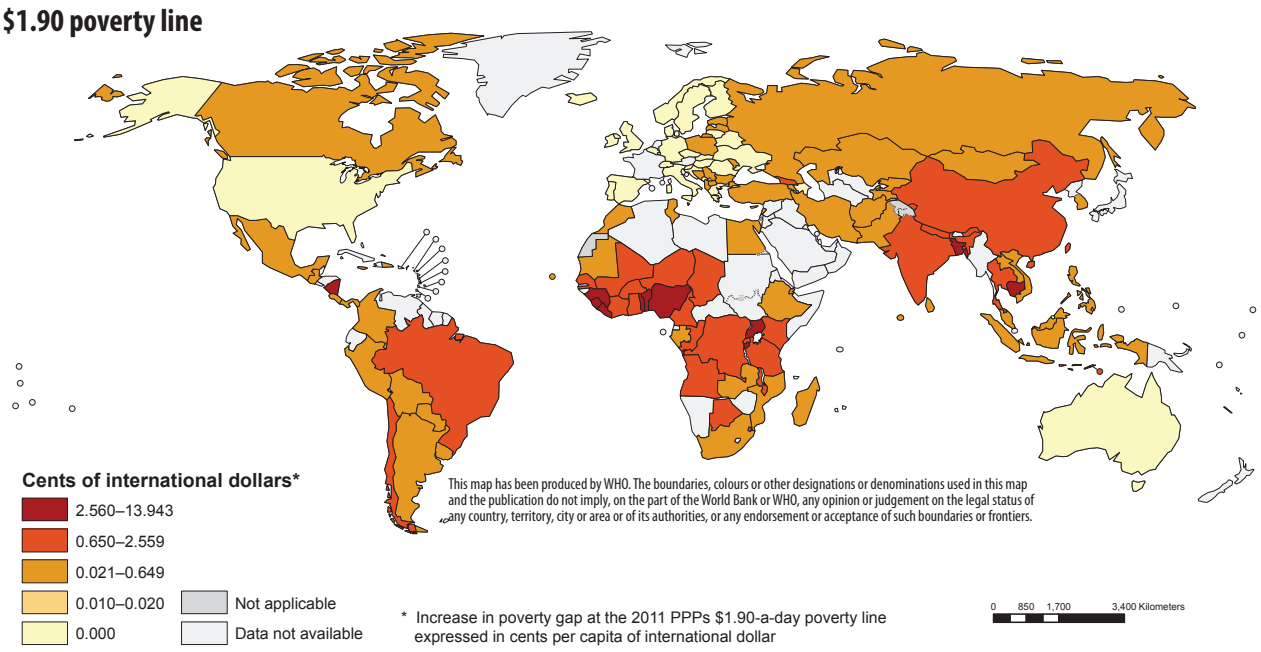
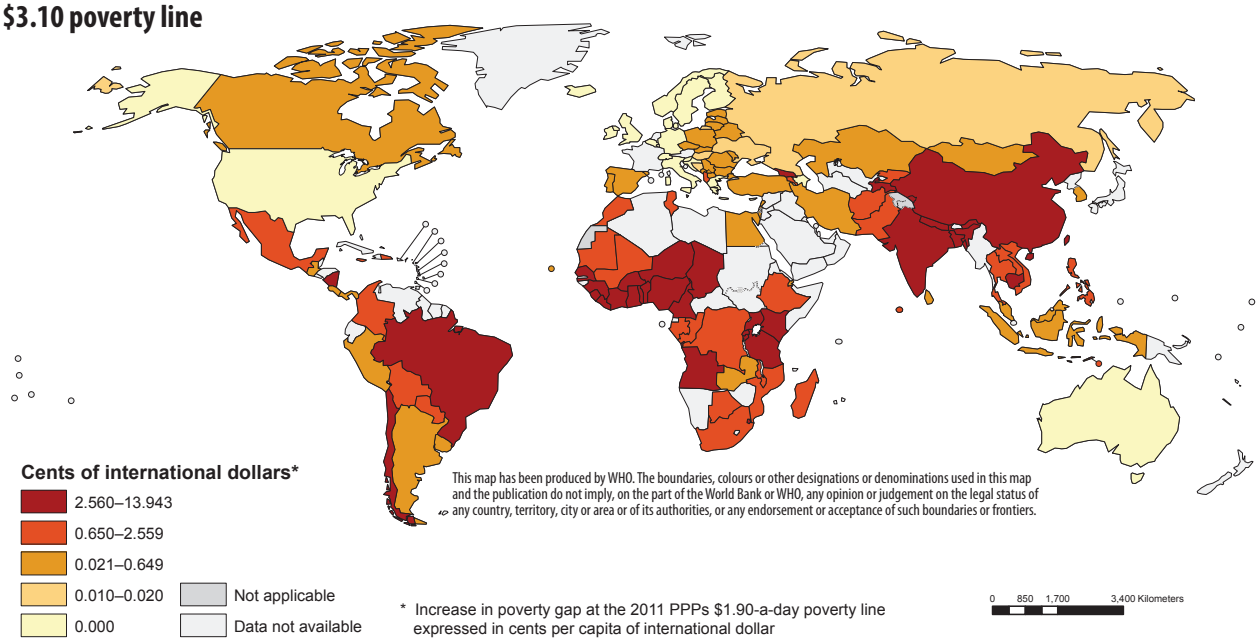


Fig. 2.10. *continued*

$3.10 poverty line



Cents of international dollar: international dollar; OOP: out-of-pocket health payments.

Notes: The 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 impoverishment due to out-of-pocket spending. In particular, the international poverty lines of $1.90-a-day and $3.10-a-day are more appropriate for low-income and lower-middle-income countries, with the $1.90-a-day line being geared to extreme poverty – rarely seen in upper-middle-income and high-income countries. Global 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.

per annum in 2011 PPPs at the $3.10-a-day line. Thus, at the $1.90-a-day poverty line, the incidence and depth of impoverishment have both been falling; in contrast, at the $3.10-a-day line, the incidence of impoverishment has been increasing, but the depth has been falling (albeit only marginally).

A low incidence of catastrophic and/or impoverishing spending on health could result from people being protected from financial hardship due to out-of-pocket expenditures but it could also result from people not getting the care they need because they cannot access it or because they cannot afford it. This is why financial protection needs to be discussed jointly with service coverage Box 2.8.

Going forward

This chapter focuses on financial protection indicators. It demonstrates that it is possible to monitor financial protection with standard methods that enable cross-country comparisons and are important complementary metrics to national and regional monitoring frameworks in the SDG era. Going forward the aim is to produced disaggregated indicators of catastrophic spending on health by socioeconomic groups and place of residence (urban-rural) and for indicators of impoverishing spending on health use other relevant nationally, regionally, internationally defined poverty lines than those of extreme and moderate poverty.

Box 2.8 Service coverage and financial protection

Universal Health Coverage can be measured through SDG indicators 3.8.1 and 3.8.2 on service coverage and financial protection. **SDG indicator 3.8.1 (service coverage)**, an index of coverage of essential services, provides an assessment of a country's overall progress towards providing needed quality essential health services. High values of the index indicate high levels of service coverage. The provision of health services always needs to be financed. When this is done through out-of-pocket payments, this often causes financial hardship. **SDG indicator 3.8.2 (financial protection)** identifies the proportion of the population suffering catastrophic expenditures defined as the fraction of the population with out-of-pocket spending on health exceeding 10% or 25% of household total expenditure or income. Low incidence of catastrophic expenditures can result from the health financing system's capacity to limit out-of-pocket payments, but it can also be due to low levels of service coverage provision.

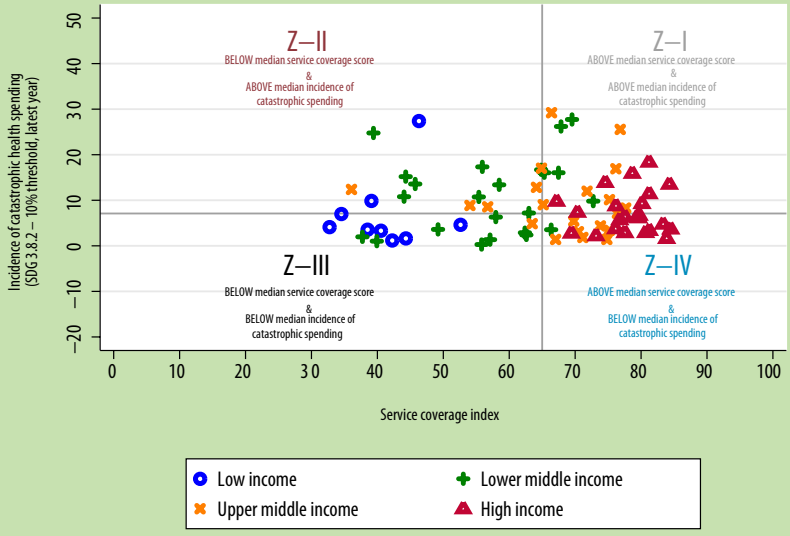
To assess the joint levels of service coverage and financial protection using the SDG indicators, the sample is restricted to those countries with primary data on catastrophic spending on health for the period 2008-2015, and primary data sources for more than half of the service coverage index components. This yields 76 countries which account for 62% of the world's population in 2015, and includes 9 countries classified as low-income in 2015 (32% of the population living in LICs in 2015), 23 lower-middle-income countries in 2015 (87% of LMIC population), 21 upper-middle-income countries in 2015 (37% of UMIC population) and 23 high-income countries in 2015 (69% of HIC population).

The figure below is divided into four zones delimited by the median value of the service coverage index across 183 countries and median incidence of catastrophic spending at the 10% threshold across 132 countries for which there are primary data. Using median incidence of catastrophic spending at the 25% threshold only yield different results in a few cases explicitly discussed hereafter but not shown in the figure. Median values are of course influenced by the composition of the sample so any cross-country comparison is relative without any suggestion that median values identify targets.

A total of 22 countries have comparatively high rates of service coverage and financial protection, which is the aim of UHC (in Z-IV). Another 22 countries have very high values of the service coverage index but their incidence of catastrophic spending is also comparatively high (in Z-I). All 23 high-income countries have above median levels of service coverage (in Z-IV or Z-I) but not all of them perform equally well in protecting households from catastrophic expenditures. The proportion of people devoting more than 10% of their household budget to health is above median incidence rates in 39% HICs and 43% at the 25% threshold. Within a country the incidence of catastrophic expenditures at 25% threshold is always lower than its rate at the 10% threshold but across countries a country could be above median with one threshold but not with the other.

In 16 countries, many people are incurring high out-of-pocket expenses, yet average service coverage is low (in Z-II). For another 16 countries, the challenge would be to increase service coverage without increasing financial hardship (in Z-III). Out of 9 low-income countries 7 are in Z-III. In these countries, service coverage is low and that might be why the fraction of the population spending more than 10% or 25% of their budget on health is also low. The 23 LMICs analyzed are mostly characterized by below median levels of service coverage index (in Z-II or Z-III) and upper-middle-income ones by above median levels of service coverage index (in Z-IV or Z-I). In terms of incidence of catastrophic spending on health, the 23 LMICs are mostly above the median incidence rate whereas the evidence is mixed for UMICs with most of them characterized by above median incidence rates at the 10% threshold but below median incidence rates at the 25% threshold.

Joint visualization of service coverage index and incidence of catastrophic spending across countries defined as out-of-pocket expenditures exceeding 10% of household total consumption or income



Notes: total number of countries 76 — 9 LMICs; 23 LMICs; 21 UMICs; 23 HICs
Source: WHO—World Bank global database as of December 2017

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ANNEXES

Annex 1.
UHC indicators (service coverage and financial protection) by country

Annex 1 Country	SDG-UHC indicator 3.8.1: Service coverage index, 2015	Data availability to construct SDG-UHC 3.8.1[a]	Availability of estimates for SDG-UHC indicator 3.8.2	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	34	high	yes	2007	4.84	0.07
Albania	62	low	yes	2012	16.72	4.95
Algeria	76	high	no	–	–	–
Angola	36	medium	yes	2008	12.38	4.54
Antigua and Barbuda	75	medium	no	–	–	–
Argentina	76	high	yes	2004	16.90	4.70
Armenia	67	high	yes	2013	16.05	4.87
Australia	≥80	high	yes	2010	3.71	0.50
Austria	≥80	medium	yes	1999	4.31	0.66
Azerbaijan	64	medium	yes	2005	8.12	1.10
Bahamas	72	medium	no	–	–	–
Bahrain	72	medium	no	–	–	–
Bangladesh	46	high	yes	2010	13.57	4.84
Barbados	79	high	no	–	–	–
Belarus	74	high	yes	2012	4.38	0.15
Belgium	≥80	medium	yes	2010	11.45	1.39
Belize	61	high	no	–	–	–
Benin	41	high	yes	2003	11.11	0.85
Bhutan	59	high	no	–	–	–
Bolivia (Plurinational State of)	60	medium	yes	2002	8.23	3.20
Bosnia and Herzegovina	57	high	yes	2011	8.56	1.27
Botswana	60	medium	yes	1993	8.54	1.82
Brazil	77	high	yes	2008	25.56	3.46
Brunei Darussalam	≥80	medium	no	–	–	–
Bulgaria	64	medium	yes	2010	12.84	0.76
Burkina Faso	39	high	yes	2009	3.52	0.62
Burundi	43	high	yes	2006	15.03	4.25
Cabo Verde	62	medium	yes	2007	2.05	0.02
Cambodia	55	high	yes	2009	19.97	5.64
Cameroon	44	high	yes	2014	10.78	2.98
Canada	≥80	low	yes	2010	2.64	0.51
Central African Republic	33	medium	no	–	–	–
Chad	29	medium	yes	2003	6.28	0.22
Chile	70	medium	yes	2006	33.07	11.52
China	76	medium	yes	2007	17.71	4.76
Colombia	76	high	yes	2010	16.92	2.82
Comoros	47	high	no	–	–	–
Congo	38	high	yes	2011	1.97	0.36
Costa Rica	75	high	yes	2012	10.13	1.81
Côte d'Ivoire	44	medium	yes	2008	15.19	3.57
Croatia	69	high	yes	2010	2.80	0.26
Cuba	78	high	no	–	–	–
Cyprus	73	low	yes	2010	16.07	1.50
Czechia	73	medium	yes	2010	2.22	0.05
Democratic People's Republic of Korea	68	low	no	–	–	–
Democratic Republic of the Congo	40	medium	yes	2004	5.81	0.84

Availability of estimates on impoverishing spending on health	Incidence of impoverishment due to out-of-pocket health spending (%)		Poverty gap due to out-of-pocket health spending expressed in cents of international dollars at 2011 PPP factors		Country
	Poverty line: at 2011 PPP $1.90-a-day	Poverty line: at 2011 PPP $3.10-a-day	Poverty line: at 2011 PPP $1.90-a-day	Poverty line: at 2011 PPP $3.10-a-day	
yes	0.58	2.55	0.25	2.16	Afghanistan
yes	0.36	1.42	0.12	1.08	Albania
no	–	–	–	–	Algeria
yes	2.01	2.55	1.47	4.36	Angola
no	–	–	–	–	Antigua and Barbuda
yes	0.24	0.62	0.11	0.63	Argentina
yes	0.49	2.57	0.18	1.83	Armenia
yes	0.00	0.00	0.00	0.00	Australia
no	–	–	–	–	Austria
yes	0.00	0.00	0.00	0.00	Azerbaijan
no	–	–	–	–	Bahamas
no	–	–	–	–	Bahrain
yes	4.51	4.08	6.47	12.23	Bangladesh
no	–	–	–	–	Barbados
yes	0.00	0.00	0.00	0.00	Belarus
yes	0.00	0.00	0.00	0.00	Belgium
no	–	–	–	–	Belize
yes	3.09	2.04	2.96	6.12	Benin
no	–	–	–	–	Bhutan
yes	0.74	1.67	0.60	1.95	Bolivia (Plurinational State of)
yes	0.00	0.03	0.00	0.02	Bosnia and Herzegovina
yes	0.87	1.09	1.18	2.42	Botswana
yes	1.04	2.01	0.74	2.58	Brazil
no	–	–	–	–	Brunei Darussalam
yes	0.00	0.13	0.00	0.11	Bulgaria
yes	1.15	0.93	1.55	2.70	Burkina Faso
yes	2.05	1.03	3.23	4.97	Burundi
yes	0.14	0.26	0.09	0.48	Cabo Verde
yes	2.99	6.15	8.19	13.94	Cambodia
yes	1.86	1.86	1.15	3.44	Cameroon
yes	0.03	0.03	0.12	0.16	Canada
no	–	–	–	–	Central African Republic
yes	1.36	0.82	2.03	3.46	Chad
yes	0.65	2.59	0.73	2.65	Chile
yes	2.13	3.09	1.22	4.49	China
yes	0.47	0.91	0.20	0.97	Colombia
no	–	–	–	–	Comoros
yes	0.71	1.05	0.70	1.74	Congo
yes	0.09	0.43	0.09	0.36	Costa Rica
yes	2.98	3.34	2.22	6.02	Côte d'Ivoire
yes	0.00	0.00	0.00	0.00	Croatia
no	–	–	–	–	Cuba
yes	0.00	0.00	0.00	0.00	Cyprus
yes	0.00	0.00	0.00	0.00	Czechia
no	–	–	–	–	Democratic People's Republic of Korea
yes	0.12	0.12	1.42	1.59	Democratic Republic of the Congo

Annex 1

Country	SDG-UHC indicator 3.8.1: Service coverage index, 2015	Data availability to construct SDG-UHC 3.8.1[a]	Availability of estimates for SDG-UHC indicator 3.8.2	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
Denmark	≥80	medium	yes	2010	2.93	0.49
Djibouti	47	medium	yes	1996	1.42	0.04
Dominican Republic	74	high	yes	2007	17.00	4.36
Ecuador	75	high	yes	1998	15.23	3.28
Egypt	68	high	yes	2012	26.20	3.90
El Salvador	77	high	no	–	–	–
Equatorial Guinea	45	medium	no	–	–	–
Eritrea	38	high	no	–	–	–
Estonia	76	medium	yes	2010	8.79	1.19
Ethiopia	39	high	yes	2004	0.82	0.18
Fiji	66	high	yes	2002	3.37	0.24
Finland	79	medium	yes	2010	6.35	0.97
France	≥80	medium	no	–	–	–
Gabon	52	medium	yes	2005	5.67	0.22
Gambia	46	high	no	–	–	–
Georgia	66	high	yes	2013	29.21	8.98
Germany	79	medium	yes	1993	1.41	0.07
Ghana	45	high	yes	2005	3.11	0.49
Greece	70	low	yes	2010	14.64	1.78
Grenada	72	medium	no	–	–	–
Guatemala	57	high	yes	2014	1.36	0.04
Guinea	35	medium	yes	2012	6.97	1.25
Guinea-Bissau	39	medium	no	–	–	–
Guyana	68	high	no	–	–	–
Haiti	47	high	no	–	–	–
Honduras	64	medium	yes	1998	3.45	0.43
Hungary	70	medium	yes	2010	7.38	0.31
Iceland	≥80	medium	yes	1995	6.90	0.94
India	56	high	yes	2011	17.33	3.90
Indonesia	49	high	yes	2015	3.61	0.41
Iran (Islamic Republic of)	65	high	no	2013	15.81	3.76
Iraq	63	medium	no	–	–	–
Ireland	78	medium	yes	2010	6.40	0.69
Israel	≥80	medium	yes	2012	6.72	0.95
Italy	≥80	medium	yes	2010	9.29	1.08
Jamaica	60	medium	yes	2004	10.20	2.88
Japan	≥80	medium	yes	2008	6.17	2.01
Jordan	70	medium	yes	2006	5.31	0.91
Kazakhstan	71	high	yes	2013	1.83	0.08
Kenya	57	high	yes	2005	5.83	1.51
Kiribati	40	low	no	–	–	–
Kuwait	77	medium	no	–	–	–
Kyrgyzstan	66	high	yes	2011	3.54	0.81
Lao People's Democratic Republic	48	high	yes	2007	2.98	0.26
Latvia	64	medium	yes	2006	10.91	1.83
Lebanon	68	medium	yes	1999	44.85	10.03
Lesotho	45	high	yes	2002	1.80	0.21
Liberia	34	high	yes	2007	7.86	1.60
Libya	63	low	no	–	–	–
Lithuania	67	medium	yes	2010	9.79	1.64
Luxembourg	≥80	medium	yes	2010	3.38	0.15
Madagascar	30	medium	yes	2005	0.77	0.03
Malawi	44	high	yes	2010	1.64	0.10

Availability of estimates on impoverishing spending on health	Incidence of impoverishment due to out-of-pocket health spending (%)		Poverty gap due to out-of-pocket health spending expressed in cents of international dollars at 2011 PPP factors		Country
	Poverty line: at 2011 PPP $1.90-a-day	Poverty line: at 2011 PPP $3.10-a-day	Poverty line: at 2011 PPP $1.90-a-day	Poverty line: at 2011 PPP $3.10-a-day	
yes	0.00	0.00	0.00	0.00	Denmark
yes	0.13	0.05	0.08	0.35	Djibouti
yes	0.41	1.63	0.12	1.36	Dominican Republic
no	–	–	–	–	Ecuador
yes	0.12	1.07	0.04	0.62	Egypt
no	–	–	–	–	El Salvador
no	–	–	–	–	Equatorial Guinea
no	–	–	–	–	Eritrea
yes	0.00	0.08	0.01	0.06	Estonia
yes	0.44	0.35	0.42	0.90	Ethiopia
no	–	–	–	–	Fiji
yes	0.00	0.00	0.00	0.00	Finland
no	–	–	–	–	France
yes	0.64	1.11	0.20	1.06	Gabon
no	–	–	–	–	Gambia
yes	3.07	5.33	2.18	7.28	Georgia
yes	0.00	0.00	0.00	0.00	Germany
no	–	–	–	–	Ghana
yes	0.00	0.00	0.00	0.00	Greece
no	–	–	–	–	Grenada
yes	0.29	0.22	0.03	0.26	Guatemala
yes	2.48	1.46	9.07	11.61	Guinea
no	–	–	–	–	Guinea-Bissau
no	–	–	–	–	Guyana
no	–	–	–	–	Haiti
no	–	–	–	–	Honduras
yes	0.00	0.03	0.00	0.02	Hungary
yes	0.00	0.00	0.00	0.00	Iceland
yes	4.16	4.61	2.13	7.69	India
yes	0.07	0.66	0.01	0.39	Indonesia
no	0.1	0.01	0.17	0.09	Iran (Islamic Republic of)
no	–	–	–	–	Iraq
yes	0.00	0.00	0.00	0.00	Ireland
yes	0.00	0.00	0.00	0.00	Israel
yes	0.00	0.00	0.00	0.00	Italy
yes	0.50	1.16	0.24	1.22	Jamaica
no	–	–	–	–	Japan
no	–	–	–	–	Jordan
yes	0.00	0.02	0.00	0.01	Kazakhstan
yes	1.36	1.61	1.52	3.36	Kenya
no	–	–	–	–	Kiribati
no	–	–	–	–	Kuwait
yes	0.33	0.90	0.16	0.91	Kyrgyzstan
yes	0.40	0.99	0.18	1.21	Lao People's Democratic Republic
yes	0.04	0.11	0.00	0.06	Latvia
yes	0.03	0.03	0.01	0.04	Lebanon
no	–	–	–	–	Lesotho
yes	2.19	0.62	2.86	4.14	Liberia
no	–	–	–	–	Libya
yes	0.00	0.01	0.00	0.00	Lithuania
yes	0.00	0.00	0.00	0.00	Luxembourg
yes	0.20	0.11	0.60	0.77	Madagascar
yes	0.52	0.33	0.86	1.41	Malawi

Annex 1

Country	SDG-UHC indicator 3.8.1: Service coverage index, 2015	Data availability to construct SDG-UHC 3.8.1[a]	Availability of estimates for SDG-UHC indicator 3.8.2	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
Malaysia	70	high	yes	2004	0.74	0.04
Maldives	55	low	yes	2009	20.14	1.61
Mali	32	high	yes	2006	3.38	0.09
Malta	79	medium	yes	2010	15.93	2.81
Mauritania	33	medium	yes	2004	10.54	1.81
Mauritius	64	medium	yes	1996	6.79	1.02
Mexico	76	high	yes	2012	7.13	1.91
Micronesia (Federated States of)	60	low	no	–	–	–
Mongolia	63	high	yes	2012	2.39	0.46
Montenegro	54	high	yes	2014	8.86	0.96
Morocco	65	medium	yes	2006	22.00	2.70
Mozambique	42	high	yes	2008	1.19	0.31
Myanmar	60	high	no	–	–	–
Namibia	59	high	no	–	–	–
Nepal	46	high	yes	2010	27.41	3.31
Netherlands	≥80	medium	no	–	–	–
New Zealand	≥80	medium	no	–	–	–
Nicaragua	70	medium	yes	2014	27.74	8.89
Niger	33	high	yes	2011	4.14	0.36
Nigeria	39	high	yes	2009	24.77	8.92
Norway	≥80	medium	yes	1998	5.09	0.50
Oman	72	medium	yes	1999	0.63	0.10
Pakistan	40	high	yes	2010	1.03	0.02
Panama	75	high	yes	2008	1.41	0.22
Papua New Guinea	41	low	no	–	–	–
Paraguay	69	medium	yes	2001	10.32	2.04
Peru	78	high	yes	2015	8.29	1.21
Philippines	58	high	yes	2015	6.31	1.41
Poland	75	medium	yes	2012	13.93	1.61
Portugal	≥80	medium	yes	2010	18.38	3.31
Qatar	77	high	no	–	–	–
Republic of Korea	≥80	high	yes	2008	13.53	4.01
Republic of Moldova	65	high	yes	2013	16.05	3.56
Romania	72	medium	yes	2012	11.99	2.29
Russian Federation	63	medium	yes	2014	4.87	0.60
Rwanda	53	high	yes	2010	4.61	0.70
Saint Lucia	69	medium	no	–	–	–
Saint Vincent and the Grenadines	65	low	no	–	–	–
Samoa	56	high	no	–	–	–
Sao Tome and Principe	54	medium	yes	2000	10.20	0.96
Saudi Arabia	68	medium	no	–	–	–
Senegal	41	high	yes	2011	3.33	0.19
Serbia	65	high	yes	2010	9.04	0.74
Seychelles	68	medium	no	–	–	–
Sierra Leone	36	high	yes	2003	10.42	0.64
Singapore	≥80	medium	no	–	–	–
Slovakia	76	medium	yes	2010	3.77	0.44
Slovenia	78	medium	yes	2012	2.90	0.26
Solomon Islands	50	medium	no	–	–	–
Somalia	22	medium	no	–	–	–
South Africa	67	medium	yes	2010	1.41	0.12
South Sudan	30	medium	no	–	–	–
Spain	77	medium	yes	2010	5.73	1.21

Availability of estimates on impoverishing spending on health	Incidence of impoverishment due to out-of-pocket health spending (%)		Poverty gap due to out-of-pocket health spending expressed in cents of international dollars at 2011 PPP factors		Country
	Poverty line: at 2011 PPP $1.90-a-day	Poverty line: at 2011 PPP $3.10-a-day	Poverty line: at 2011 PPP $1.90-a-day	Poverty line: at 2011 PPP $3.10-a-day	
yes	0.09	0.23	0.02	0.13	Malaysia
yes	0.52	0.63	0.19	1.29	Maldives
yes	1.91	0.95	1.14	2.40	Mali
yes	0.00	0.00	0.00	0.00	Malta
yes	0.65	1.21	0.30	1.52	Mauritania
no	–	–	–	–	Mauritius
yes	0.28	0.69	0.08	0.66	Mexico
no	–	–	–	–	Micronesia (Federated States of)
yes	0.02	0.15	0.01	0.10	Mongolia
yes	0.00	0.26	0.00	0.04	Montenegro
yes	0.63	3.18	0.27	2.42	Morocco
yes	0.23	0.12	0.47	0.70	Mozambique
no	–	–	–	–	Myanmar
no	–	–	–	–	Namibia
yes	1.85	5.63	1.00	6.11	Nepal
no	–	–	–	–	Netherlands
no	–	–	–	–	New Zealand
yes	3.08	5.20	5.35	10.08	Nicaragua
yes	1.64	0.99	1.51	3.21	Niger
yes	3.72	3.63	3.33	7.87	Nigeria
yes	0.00	0.00	0.00	0.00	Norway
no	–	–	–	–	Oman
yes	1.00	2.44	0.28	2.53	Pakistan
yes	0.04	0.04	0.02	0.09	Panama
no	–	–	–	–	Papua New Guinea
yes	0.31	0.51	0.08	0.76	Paraguay
yes	0.05	0.20	0.01	0.15	Peru
yes	0.83	1.44	0.41	1.86	Philippines
yes	0.00	0.09	0.00	0.03	Poland
yes	0.00	0.00	0.00	0.00	Portugal
no	–	–	–	–	Qatar
yes	0.00	0.04	0.00	0.02	Republic of Korea
yes	0.00	0.43	0.01	0.27	Republic of Moldova
yes	0.00	0.30	0.00	0.14	Romania
yes	0.00	0.01	0.01	0.01	Russian Federation
yes	0.94	0.39	1.81	2.56	Rwanda
no	–	–	–	–	Saint Lucia
no	–	–	–	–	Saint Vincent and the Grenadines
no	–	–	–	–	Samoa
no	–	–	–	–	Sao Tome and Principe
no	–	–	–	–	Saudi Arabia
yes	1.10	1.42	1.24	3.06	Senegal
yes	0.05	0.16	0.01	0.14	Serbia
no	–	–	–	–	Seychelles
yes	2.56	1.30	3.47	5.78	Sierra Leone
no	–	–	–	–	Singapore
yes	0.00	0.02	0.00	0.00	Slovakia
yes	0.00	0.00	0.00	0.00	Slovenia
no	–	–	–	–	Solomon Islands
no	–	–	–	–	Somalia
yes	0.45	0.61	0.33	0.95	South Africa
no	–	–	–	–	South Sudan
yes	0.00	0.00	0.00	0.00	Spain

Annex 1

Country	SDG-UHC indicator 3.8.1: Service coverage index, 2015	Data availability to construct SDG-UHC 3.8.1[a]	Availability of estimates for SDG-UHC indicator 3.8.2	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
Sri Lanka	62	medium	yes	2009	2.89	0.10
Sudan	43	medium	no	–	–	–
Suriname	68	high	no	–	–	–
Swaziland	58	high	yes	2009	13.39	2.04
Sweden	≥80	medium	yes	1996	5.53	0.69
Switzerland	≥80	medium	yes	2004	19.70	6.68
Syrian Arab Republic	60	low	no	–	–	–
Tajikistan	65	medium	yes	2007	11.30	2.72
Thailand	75	high	yes	2010	3.38	0.68
The former Yugoslav Republic of Macedonia	70	medium	yes	2008	5.44	0.57
Timor-Leste	47	medium	yes	2001	2.59	0.00
Togo	42	high	yes	2006	10.65	0.02
Tonga	62	medium	no	–	–	–
Trinidad and Tobago	75	medium	no	–	–	–
Tunisia	65	high	yes	2010	16.69	2.37
Turkey	71	high	yes	2012	3.10	0.32
Turkmenistan	67	medium	no	–	–	–
Uganda	44	high	yes	2002	12.01	2.57
Ukraine	63	high	yes	2013	7.21	1.07
United Arab Emirates	63	low	no	–	–	–
United Kingdom	≥80	medium	yes	2013	1.64	0.48
United Republic of Tanzania	39	high	yes	2012	9.87	2.48
United States of America	≥80	high	yes	2013	4.77	0.78
Uruguay	79	high	yes	1995	13.87	1.85
Uzbekistan	72	medium	no	–	–	–
Vanuatu	56	high	no	–	–	–
Venezuela (Bolivarian Republic of)	73	medium	no	–	–	–
Viet Nam	73	high	yes	2014	9.81	2.07
Yemen	39	high	yes	2005	17.06	2.40
Zambia	56	high	yes	2010	0.29	0.01
Zimbabwe	55	high	no	–	–	–

SDG: sustainable development goals; UHC: universal health coverage.

[a] Data availability is classified as follows, based on information available in global data bases: high=75% or more of the tracer indicators with primary data since 2010; medium=50% or more (but less than 75%) of the tracer indicators with primary data since 2010; low=less than 50% of tracer indicators with primary data since 2010. 'Primary data' refers to original data sources and excludes estimates based on modelling and predictions.

Availability of estimates on impoverishing spending on health	Incidence of impoverishment due to out-of-pocket health spending (%)		Poverty gap due to out-of-pocket health spending expressed in cents of international dollars at 2011 PPP factors		Country
	Poverty line: at 2011 PPP $1.90-a-day	Poverty line: at 2011 PPP $3.10-a-day	Poverty line: at 2011 PPP $1.90-a-day	Poverty line: at 2011 PPP $3.10-a-day	
yes	0.05	0.44	0.01	0.29	Sri Lanka
no	–	–	–	–	Sudan
no	–	–	–	–	Suriname
yes	1.36	1.29	2.24	3.79	Swaziland
yes	0.00	0.00	0.00	0.00	Sweden
yes	0.00	0.00	0.00	0.00	Switzerland
no	–	–	–	–	Syrian Arab Republic
yes	1.42	3.39	0.53	3.74	Tajikistan
yes	0.12	0.34	0.83	1.09	Thailand
yes	0.09	0.28	0.09	0.38	The former Yugoslav Republic of Macedonia
yes	1.00	0.65	0.80	1.85	Timor-Leste
yes	2.54	1.59	2.72	5.05	Togo
no	–	–	–	–	Tonga
no	–	–	–	–	Trinidad and Tobago
yes	0.44	1.17	0.19	1.19	Tunisia
yes	0.09	0.20	0.00	0.13	Turkey
no	–	–	–	–	Turkmenistan
yes	2.68	1.48	3.39	5.71	Uganda
yes	0.00	0.02	0.00	0.02	Ukraine
no	–	–	–	–	United Arab Emirates
yes	0.00	0.00	0.00	0.00	United Kingdom
yes	2.38	1.86	2.26	4.96	United Republic of Tanzania
yes	0.00	0.00	0.00	0.00	United States of America
yes	0.04	0.27	0.01	0.11	Uruguay
no	–	–	–	–	Uzbekistan
no	–	–	–	–	Vanuatu
no	–	–	–	–	Venezuela (Bolivarian Republic of)
no	–	–	–	–	Viet Nam
no	–	–	–	–	Yemen
yes	0.14	0.10	0.16	0.28	Zambia
no	–	–	–	–	Zimbabwe

Annex 2.
Current values of the UHC index of coverage of essential health services and values of each of the tracer indicators used to calculate the index, by country[a]

Values are for 2015 unless otherwise noted. Values displayed have not been transformed or rescaled for incorporation into the index calculations. For tracer indicators, data are displayed in bold font if primary data were available since 2010; normal font if primary data were available since 2000; and faded font if estimates for the country were imputed without primary country data.

Annex 2 Country	UHC service coverage index (SDG 3.8.1)	Index data availability[b]	Family planning demand satisifed with modern methods (%)	Antenatal care, 4+ visits (%)[c]	Child immunization (DTP3) (%)	Care-seeking behaviour for child pneumonia (%)[c]	Tuberculosis effective treatment (%)[d]	HIV treatment (%)	Insecticide-treated nets for malaria prevention (%)[e]
Afghanistan	34	high	**43**	**18**	**65**	**62**	**51**	**5**	–
Albania	62	low	25	67	**99**	70	**67**	**28**	–
Algeria	76	high	**76**	**67**	**95**	**66**	**70**	**65**	–
Angola	36	medium	**25**	56	**64**	39	**22**	**23**	**40**
Antigua and Barbuda	75	medium	80	**100**	**99**	88	**58**	46	–
Argentina	76	high	**85**	**90**	**94**	**94**	**45**	**63**	–
Armenia	67	high	**40**	**96**	**94**	**57**	**69**	**29**	–
Australia	≥80	high	**84**	**95**	**93**	90	**69**	**79**	–
Austria	≥80	medium	**84**	97	**93**	92	**64**	72	–
Azerbaijan	64	medium	32	66	**96**	33	**67**	**34**	–
Bahamas	72	medium	83	**85**	**95**	77	**73**	**29**	–
Bahrain	72	medium	59	**100**	**98**	90	**38**	**42**	–
Bangladesh	46	high	**74**	**31**	**97**	**42**	**53**	**13**	–
Barbados	79	high	**76**	**98**	**97**	87	**87**	**44**	–
Belarus	74	high	**74**	**100**	**99**	**93**	**63**	**42**	–
Belgium	≥80	medium	**90**	97	**99**	91	**71**	72	–
Belize	61	high	**68**	**83**	**94**	**67**	**31**	**29**	–
Benin	41	high	**24**	**59**	**82**	**23**	**54**	**51**	**69**
Bhutan	59	high	**83**	**85**	**99**	**74**	**72**	**13**	–
Bolivia (Plurinational State of)	60	medium	52	**59**	**99**	**62**	**52**	**22**	–
Bosnia and Herzegovina	57	high	**27**	**84**	**82**	**87**	**59**	28	–
Botswana	60	medium	78	73	**95**	37	**48**	**77**	–
Brazil	77	high	**88**	**90**	**96**	50	**62**	**57**	–
Brunei Darussalam	≥80	medium	83	**100**	**99**	86	**56**	72	–
Bulgaria	64	medium	59	88	**91**	76	**83**	**24**	–
Burkina Faso	39	high	**43**	34	**91**	**56**	**49**	**55**	**62**
Burundi	43	high	**38**	**49**	**94**	**55**	**46**	**50**	**77**
Cabo Verde	62	medium	77	72	**93**	70	**34**	**50**	–
Cambodia	55	high	**59**	**76**	**89**	**69**	**55**	**76**	–
Cameroon	44	high	**38**	**59**	**84**	**28**	**45**	**30**	**45**
Canada	≥80	low	89	99	**91**	90	**74**	72	–
Central African Republic	33	medium	**37**	38	**47**	**30**	**39**	**22**	49
Chad	29	medium	**18**	**31**	**46**	**26**	**37**	**54**	**70**
Chile	70	medium	82	97	**96**	87	**51**	**49**	–
China	76	medium	95	74	**99**	79	**82**	41	–
Colombia	76	high	83	89	**91**	**64**	**61**	**53**	–
Comoros	47	high	**33**	49	**91**	**38**	**53**	**32**	**57**
Congo	38	high	**37**	**79**	**80**	**28**	**39**	**29**	**36**
Costa Rica	75	high	**90**	**90**	**92**	**77**	**71**	**45**	–
Côte d'Ivoire	44	medium	**34**	44	**83**	**38**	**49**	**34**	**73**

At least basic sanitation (%)	Normal blood pressure (%)	Mean fasting plasma glucose (mmol/L)[f]	Tobacco non-smoking (%)	Hospital beds per 10 000 population[c]	Physicians per 1000 population[c]	Psychiatrists per 100 000 population[c]	Surgeons per 100 000 population[c]	International Health Regulations core capacity index (%)[c]	Country
39	69	5.36	**87**	**5**	**0.3**	**0.1**	0.9	**43**	Afghanistan
98	71	5.41	71	**28.9**	**1.3**	**1.3**	5.5	81	Albania
88	75	**5.42**	**85**	**19**	1.2	**3.2**	**20.6**	**72**	Algeria
39	70	5.25	87	8	0.1	**<0.05**	5.1	**18**	Angola
88	77	5.65	87	**38**	1.2	**1.1**	**5.5**	**87**	Antigua and Barbuda
95	77	5.55	**77**	**50**	**3.8**	13.7	18.3	**83**	Argentina
92	75	5.64	**73**	**41.8**	**2.8**	**5.1**	**63.3**	**96**	Armenia
100	**80**	5.51	**85**	**37.9**	**3.5**	**13.7**	**20.3**	**100**	Australia
100	79	5.24	**69**	**76.5**	**5.2**	**19.7**	**91.2**	**87**	Austria
89	76	5.72	**78**	**46.9**	**3.4**	**3.7**	**41.3**	**84**	Azerbaijan
92	79	5.82	**88**	**29**	2.7	1.1	21	**59**	Bahamas
100	79	5.79	79	**20.3**	**0.9**	**4.8**	**15.1**	**96**	Bahrain
47	**75**	5.45	77	**7.7**	**0.4**	**0.1**	**1.7**	**85**	Bangladesh
97	**76**	5.9	**92**	**58**	1.8	**2.5**	12.3	**90**	Barbados
94	73	5.48	**71**	**110.5**	**4.1**	**7.7**	**93.6**	**90**	Belarus
100	83	5.39	**71**	**62.3**	**3**	**20.3**	**50.3**	**82**	Belgium
87	77	**5.54**	87	**13**	0.8	**0.6**	5.6	**55**	Belize
14	**72**	5.07	**93**	**5**	**0.1**	**0.1**	**0.8**	**44**	Benin
63	**72**	**4.9**	**94**	**17.4**	**0.3**	**0.4**	**0.8**	**65**	Bhutan
53	82	5.4	87	**11**	**0.5**	**1**	**17.6**	**67**	Bolivia (Plurinational State of)
95	**69**	5.57	**61**	**35**	**1.9**	**4**	**7.2**	**55**	Bosnia and Herzegovina
60	**71**	5.32	**80**	**18**	**0.4**	**0.3**	**1.6**	**56**	Botswana
86	**77**	**5.52**	**86**	**22**	**1.9**	**3.5**	**34.4**	**97**	Brazil
96	81	5.33	**84**	**27.4**	**1.5**	**4.3**	**22.5**	**91**	Brunei Darussalam
86	72	5.41	**62**	**68.2**	**4**	**7.9**	**64.1**	**69**	Bulgaria
23	**68**	5.31	**87**	**4**	**<0.05**	**0.1**	**0.2**	**50**	Burkina Faso
51	71	4.87	87	**7.9**	**0.1**	**<0.05**	**0.2**	**56**	Burundi
65	71	6.05	91	**21**	**0.3**	**1.4**	**11.5**	**58**	Cabo Verde
49	**74**	**4.73**	**82**	**8.3**	**0.2**	**0.3**	**0.8**	**51**	Cambodia
39	75	5.53	87	**13**	**0.1**	**<0.05**	**0.4**	**91**	Cameroon
99	87	5.54	**85**	**27**	**2.5**	**13.4**	**21.1**	**100**	Canada
25	69	5.13	87	**10**	<0.05	**<0.05**	**0.2**	**24**	Central African Republic
10	67	5.3	87	4	**<0.05**	**<0.05**	**0.1**	**41**	Chad
100	**79**	5.5	**61**	**22**	1	**4.7**	**41**	**75**	Chile
75	**81**	5.46	**75**	**42**	**1.5**	**1.7**	**21.6**	**99**	China
84	**81**	5	**90**	**15**	**1.6**	**2.5**	**5.8**	**85**	Colombia
34	**72**	5.16	**86**	**21.6**	**0.2**	**0.1**	**1.3**	**29**	Comoros
15	74	5.2	**76**	16	0.1	**0.1**	**0.2**	**28**	Congo
97	**81**	5.52	**88**	**11.6**	**2.5**	**5.2**	**7.1**	**83**	Costa Rica
30	73	5.39	87	4	0.1	**0.1**	1.5	**87**	Côte d'Ivoire

Annex 2

Country	UHC service coverage index (SDG 3.8.1)	Index data availability[b]	Family planning demand satisifed with modern methods (%)	Antenatal care, 4+ visits (%)[c]	Child immunization (DTP3) (%)	Care-seeking behaviour for child pneumonia (%)[c]	Tuberculosis effective treatment (%)[d]	HIV treatment (%)	Insecticide-treated nets for malaria prevention (%)[e]
Croatia	69	high	59	**93**	**94**	90	**62**	**65**	–
Cuba	78	high	**88**	**99**	**99**	**93**	**71**	**69**	–
Cyprus	73	low	83	97	**97**	91	**51**	72	–
Czechia	73	medium	83	97	**97**	88	**71**	**46**	–
Democratic People's Republic of Korea	68	low	**85**	94	**96**	80	**73**	41	–
Democratic Republic of the Congo	40	medium	**18**	**48**	**81**	**42**	**43**	**32**	**59**
Denmark	≥80	medium	83	97	**93**	92	**49**	72	–
Djibouti	47	medium	**43**	23	**84**	**94**	**65**	**22**	30
Dominican Republic	74	high	**84**	**93**	**85**	**73**	**59**	**46**	–
Ecuador	75	high	82	**80**	**78**	72	**46**	**50**	–
Egypt	68	high	**80**	**83**	**93**	**68**	**50**	**21**	–
El Salvador	77	high	**80**	**90**	**91**	**80**	**84**	**45**	–
Equatorial Guinea	45	medium	**25**	67	**16**	**54**	**50**	**32**	26
Eritrea	38	high	**27**	57	**95**	**45**	**56**	**57**	19
Estonia	76	medium	77	**97**	**93**	89	**73**	72	–
Ethiopia	39	high	**58**	**32**	**77**	**29**	**63**	**55**	61
Fiji	66	high	67	**94**	**99**	72	**70**	**31**	–
Finland	79	medium	88	**98**	**97**	92	**39**	72	–
France	≥80	medium	**93**	**99**	**98**	91	67	**75**	–
Gabon	52	medium	**37**	78	**80**	**68**	**41**	**56**	**11**
Gambia	46	high	**28**	**78**	**97**	**68**	**64**	**24**	**64**
Georgia	66	high	**53**	**87**	**94**	74	**66**	**28**	–
Germany	79	medium	82	97	**95**	91	**55**	**72**	–
Ghana	45	high	**43**	**87**	**88**	**56**	**28**	**28**	**66**
Greece	70	low	59	97	**99**	89	71	72	–
Grenada	72	medium	79	89	**92**	82	**87**	46	–
Guatemala	57	high	**67**	**86**	**74**	**50**	**68**	**36**	–
Guinea	35	medium	**20**	57	**54**	**37**	**46**	**28**	**57**
Guinea-Bissau	39	medium	**40**	**65**	**87**	**34**	**25**	**25**	78
Guyana	68	high	**57**	**87**	**95**	**84**	**55**	**56**	–
Haiti	47	high	**49**	67	**60**	**38**	**62**	**46**	–
Honduras	64	medium	**77**	89	**97**	**64**	**74**	**48**	–
Hungary	70	medium	85	88	**99**	87	**69**	28	–
Iceland	≥80	medium	83	97	**92**	94	**77**	**72**	–
India	56	high	**72**	**45**	**87**	**77**	**44**	**44**	–
Indonesia	49	high	**81**	**84**	**78**	**75**	**27**	**10**	–
Iran (Islamic Republic of)	65	high	**76**	94	**98**	**76**	**70**	**11**	–
Iraq	63	medium	**62**	**50**	**58**	**74**	**48**	43	–
Ireland	78	medium	79	97	**95**	91	**49**	**70**	–
Israel	≥80	medium	71	97	**95**	91	**77**	72	–
Italy	≥80	medium	67	**87**	**93**	92	79	**76**	–
Jamaica	60	medium	83	**86**	**91**	**82**	**14**	**32**	–
Japan	≥80	medium	65	97	**96**	89	**46**	72	–
Jordan	70	medium	**62**	95	**99**	**77**	**70**	**50**	–
Kazakhstan	71	high	**75**	**95**	**98**	**81**	**80**	**26**	–
Kenya	57	high	**76**	**58**	**89**	**66**	**66**	**57**	**62**
Kiribati	40	low	43	71	**78**	81	**70**	41	–
Kuwait	77	medium	67	71	**99**	82	**84**	**71**	–
Kyrgyzstan	66	high	**66**	**95**	**97**	**60**	**69**	**28**	–
Lao People's Democratic Republic	48	high	**67**	**37**	**89**	**54**	**32**	**35**	–
Latvia	64	medium	77	88	**95**	87	**72**	**14**	–

At least basic sanitation (%)	Normal blood pressure (%)	Mean fasting plasma glucose (mmol/L)[f]	Tobacco non-smoking (%)	Hospital beds per 10 000 population[c]	Physicians per 1000 population[c]	Psychiatrists per 100 000 population[c]	Surgeons per 100 000 population[c]	International Health Regulations core capacity index (%)[c]	Country
98	68	5.37	63	55.6	3.1	15.5	68.2	71	Croatia
91	81	5.67	64	52	7.5	10.3	70.6	99	Cuba
99	80	5.45	64	34.2	2.5	2.7	12.8	62	Cyprus
99	72	5.51	66	64.9	3.7	14.1	73.6	88	Czechia
77	82	5.13	75	143	2.8	0.5	0.6	73	Democratic People's Republic of Korea
20	72	5.06	87	8	0.1	0.1	0.1	75	Democratic Republic of the Congo
100	79	5.34	80	25.3	3.7	17.4	58.7	91	Denmark
51	73	5.4	87	14	0.2	0.1	1.5	46	Djibouti
83	79	5.24	86	16	1.5	1.1	9	70	Dominican Republic
86	82	5.39	93	15	1.7	1.1	34.3	89	Ecuador
93	75	5.1	75	15.6	0.8	0.9	26.8	93	Egypt
91	81	5.61	89	13	1.9	0.5	20.3	94	El Salvador
75	72	5.28	87	21	0.3	0.1	32.7	27	Equatorial Guinea
11	71	5.12	94	7	0.1	<0.05	0.4	71	Eritrea
100	72	5.25	68	49.6	3.3	18.5	82.3	72	Estonia
7	79	4.48	96	3.1	0.1	<0.05	0.4	78	Ethiopia
96	78	5.98	77	23	0.4	0.7	1.8	98	Fiji
99	81	5.5	79	43.5	3.2	23.6	56.4	96	Finland
99	78	5.31	67	64.8	3.2	14.1	29.4	89	France
41	75	5.39	87	13	0.3	0.3	16.4	48	Gabon
42	71	5.56	84	11	0.1	0.2	0.6	33	Gambia
85	74	5.64	70	25.9	4.8	6.5	42.5	81	Georgia
99	80	5.45	69	82.8	4.1	7.5	55.2	99	Germany
14	76	5.49	96	9	0.1	0.1	0.5	69	Ghana
99	81	5.51	56	42.5	6.3	21.9	134.9	76	Greece
78	76	5.67	87	37	0.7	1.9	2.8	66	Grenada
67	79	5.82	87	6	0.9	0.3	1.3	86	Guatemala
22	70	5.3	87	3	0.1	<0.05	0.5	52	Guinea
22	70	5.31	87	10	0.1	<0.05	0.5	50	Guinea-Bissau
86	77	5.68	87	16	0.2	0.5	5.9	81	Guyana
31	76	5.41	87	7	1.2	0.1	1.1	48	Haiti
80	79	5.31	87	7	0.4	0.4	2.6	74	Honduras
98	70	5.4	69	70.4	3.3	4.4	31.9	86	Hungary
99	80	5.47	85	31.7	3.8	25.5	51	84	Iceland
44	74	5.59	88	6.6	0.7	0.3	2.6	94	India
68	76	5.09	61	12.1	0.2	0.3	6.9	96	Indonesia
88	80	5.47	89	15	1.5	1.8	1.6	85	Iran (Islamic Republic of)
86	75	5.78	81	13.8	0.9	0.4	12.6	91	Iraq
92	80	5.38	75	27.6	2.8	6.1	14.5	78	Ireland
100	83	5.58	74	30.9	3.6	6.7	40.4	71	Israel
99	79	5.37	76	34.2	3.9	10.8	20.4	78	Italy
85	78	5.69	83	17	0.4	1.1	3.6	81	Jamaica
100	83	5.31	77	134	2.3	8.4	16.8	100	Japan
97	79	6.25	73	14	2.7	1.3	10.8	97	Jordan
98	73	5.65	74	67.2	3.3	6.3	44.1	78	Kazakhstan
30	71	4.7	89	14	0.2	0.2	0.7	69	Kenya
40	79	6.78	51	18.6	0.2	1.8	3.6	60	Kiribati
100	77	6.06	80	20.4	1.9	3.3	106	86	Kuwait
97	73	5.55	73	45.1	1.9	3.4	32.5	50	Kyrgyzstan
73	75	5.1	70	15	0.2	<0.05	1	74	Lao People's Democratic Republic
93	70	5.42	62	58	3.2	12.1	53	90	Latvia

Annex 2

Country	UHC service coverage index (SDG 3.8.1)	Index data availability[b]	Family planning demand satisifed with modern methods (%)	Antenatal care, 4+ visits (%)[c]	Child immunization (DTP3) (%)	Care-seeking behaviour for child pneumonia (%)[c]	Tuberculosis effective treatment (%)[d]	HIV treatment (%)	Insecticide-treated nets for malaria prevention (%)[e]
Lebanon	68	medium	61	71	**81**	74	**66**	**44**	–
Lesotho	45	high	**76**	**74**	**93**	**63**	**32**	**40**	–
Liberia	34	high	**38**	**78**	**52**	**51**	**31**	**17**	**47**
Libya	63	low	45	71	**97**	81	**22**	43	–
Lithuania	67	medium	70	88	**93**	87	**71**	**20**	–
Luxembourg	≥80	medium	83	97	**99**	94	**68**	**72**	–
Madagascar	30	medium	59	**51**	**69**	**41**	**43**	**4**	**68**
Malawi	44	high	**73**	**51**	**88**	**71**	**40**	**58**	**55**
Malaysia	70	high	**53**	**80**	**99**	87	**68**	**26**	–
Maldives	55	low	53	85	**99**	22	**30**	13	–
Mali	32	high	**33**	**38**	**64**	**23**	**44**	**32**	**59**
Malta	79	medium	72	97	**97**	90	**66**	**75**	–
Mauritania	33	medium	**30**	**48**	**73**	**34**	**38**	**21**	8
Mauritius	64	medium	**49**	56	**97**	78	**41**	39	–
Mexico	76	high	**83**	**94**	**87**	**73**	**65**	**55**	–
Micronesia (Federated States of)	60	low	59	74	**72**	65	**75**	41	–
Mongolia	63	high	**72**	**90**	**99**	**70**	**32**	**33**	–
Montenegro	54	high	**36**	**87**	**89**	89	**55**	**21**	–
Morocco	65	medium	**78**	55	**99**	**70**	**71**	**41**	–
Mozambique	42	high	**39**	51	**80**	**50**	**34**	**44**	**66**
Myanmar	60	high	**74**	74	**89**	**58**	**61**	**47**	–
Namibia	59	high	**77**	**63**	**92**	**68**	**70**	**63**	–
Nepal	46	high	**65**	**60**	**91**	**50**	**69**	**36**	–
Netherlands	≥80	medium	**87**	97	**95**	91	**74**	**77**	–
New Zealand	≥80	medium	85	97	**92**	86	**71**	72	–
Nicaragua	70	medium	**89**	88	**98**	58	**68**	**38**	–
Niger	33	high	**41**	**39**	**65**	**59**	**44**	**26**	39
Nigeria	39	high	**33**	**54**	**49**	**35**	**13**	**26**	**45**
Norway	≥80	medium	87	97	**95**	92	**73**	72	–
Oman	72	medium	**35**	**71**	**99**	**56**	**84**	43	–
Pakistan	40	high	**49**	**37**	**72**	**64**	**59**	**5**	–
Panama	75	high	**74**	**88**	**73**	**82**	**63**	**48**	–
Papua New Guinea	41	low	48	55	**73**	63	**56**	**48**	–
Paraguay	69	medium	81	**77**	**93**	74	**62**	**30**	–
Peru	78	high	**64**	**95**	**90**	**60**	**70**	**53**	–
Philippines	58	high	**54**	**84**	**60**	**64**	**78**	**27**	–
Poland	75	medium	66	97	**98**	88	**51**	72	–
Portugal	≥80	medium	83	97	**98**	91	**63**	72	–
Qatar	77	high	**62**	**85**	**99**	87	**74**	**85**	–
Republic of Korea	≥80	high	83	**98**	**98**	80	**76**	72	–
Republic of Moldova	65	high	**63**	**95**	**87**	**79**	**46**	**26**	–
Romania	72	medium	71	76	**89**	70	**74**	**67**	–
Russian Federation	63	medium	**73**	78	**97**	83	**60**	28	–
Rwanda	53	high	**65**	**44**	**98**	**54**	**72**	**74**	**67**
Saint Lucia	69	medium	**76**	**90**	**99**	82	**86**	46	–
Saint Vincent and the Grenadines	65	low	81	100	**98**	81	**36**	46	–
Samoa	56	high	**37**	**73**	**66**	**78**	**68**	41	–
Sao Tome and Principe	54	medium	**52**	**84**	**96**	**69**	**71**	39	–
Saudi Arabia	68	medium	45	71	**98**	82	**54**	**54**	–
Senegal	41	high	**43**	**47**	**89**	**48**	**55**	**44**	**68**
Serbia	65	high	**36**	**94**	**95**	**90**	**71**	**63**	–
Seychelles	68	medium	39	56	**97**	83	**60**	39	–

At least basic sanitation (%)	Normal blood pressure (%)	Mean fasting plasma glucose (mmol/L)[f]	Tobacco non-smoking (%)	Hospital beds per 10 000 population[c]	Physicians per 1000 population[c]	Psychiatrists per 100 000 population[c]	Surgeons per 100 000 population[c]	International Health Regulations core capacity index (%)[c]	Country
95	79	5.7	**66**	**28.5**	**2.4**	**1.4**	**45.4**	**76**	Lebanon
44	**72**	5.5	**74**	13	<0.05	**0.1**	**0.2**	**63**	Lesotho
17	**72**	5.31	**90**	**8**	<0.05	**0.1**	**0.2**	**26**	Liberia
100	76	5.93	81	**37**	**2.1**	**1**	15.6	**65**	Libya
94	70	5.5	**70**	**72.8**	**4.3**	**16.7**	**61.2**	**83**	Lithuania
98	78	5.43	**76**	**48.2**	**2.9**	**22.5**	**51.6**	**89**	Luxembourg
10	72	5.12	87	**2**	**0.1**	**0.1**	**0.4**	**29**	Madagascar
44	71	5.03	**85**	**13**	<0.05	**<0.05**	**0.4**	**40**	Malawi
100	**77**	5.66	**78**	**18.6**	**1.3**	**0.8**	**6.9**	**99**	Malaysia
96	**76**	5.14	71	43	**1.6**	**3.7**	8.8	**60**	Maldives
31	68	5.36	**88**	**1**	**0.1**	**<0.05**	0.7	**55**	Mali
100	81	5.64	74	**46.7**	**3.9**	**3.2**	**43.7**	**76**	Malta
45	68	5.24	87	4	0.1	**0.1**	1.6	**28**	Mauritania
93	75	5.6	78	**34**	1.1	**0.8**	**6.9**	**68**	Mauritius
89	**80**	5.89	**85**	**15.2**	**2.4**	**1**	**16**	**96**	Mexico
56	75	6.18	75	18.6	0.2	1	**10.6**	**64**	Micronesia (Federated States of)
59	**71**	5.54	**74**	**70**	**2.9**	**0.5**	**14.1**	**86**	Mongolia
96	71	5.34	**54**	**39.6**	**2.3**	**8.7**	**37.6**	**55**	Montenegro
84	74	5.58	77	**11**	**0.6**	**0.5**	**7.8**	**95**	Morocco
24	71	5.21	**83**	**7**	**0.1**	**0.1**	**0.7**	**67**	Mozambique
65	76	5.02	**79**	**9**	**0.6**	**0.3**	**0.9**	**86**	Myanmar
34	**72**	5.35	**78**	27	0.4	**0.3**	**0.8**	**66**	Namibia
46	**70**	5.44	**76**	**3**	0.2	**0.2**	**0.9**	**72**	Nepal
98	**81**	5.11	**74**	46.6	**3.4**	**20.1**	**29.7**	**94**	Netherlands
100	**84**	5.57	**84**	**28**	**3**	**18**	**18.3**	**98**	New Zealand
76	79	5.33	87	**9**	**0.9**	**0.9**	**8.7**	**76**	Nicaragua
13	66	5.2	**92**	**2.8**	**<0.05**	**<0.05**	**0.2**	**73**	Niger
33	76	5.45	**94**	5	0.4	**0.1**	**1**	**67**	Nigeria
98	80	5.52	**79**	**38.6**	**4.4**	**29.7**	**74.7**	**98**	Norway
99	76	5.71	92	**15.8**	**1.5**	**2.3**	**14.2**	**94**	Oman
58	**70**	5.84	**80**	**6**	**0.8**	**0.3**	**1.3**	**43**	Pakistan
77	**80**	5.59	**94**	**23**	**1.6**	**3.8**	17.6	**68**	Panama
19	75	6.07	63	18.6	**0.1**	**0.1**	**0.5**	**64**	Papua New Guinea
91	76	5.52	**86**	**13**	**1.3**	**2**	**5.4**	**82**	Paraguay
77	**86**	4.93	87	**16**	**1.1**	**0.8**	**28.4**	**89**	Peru
75	**78**	5.03	**75**	**5**	1.1	**0.5**	4.3	**84**	Philippines
98	**71**	5.15	**71**	**65**	**2.3**	**5.1**	**15.4**	**74**	Poland
99	76	5.28	**77**	**34**	**4.4**	**4.5**	47.8	**95**	Portugal
100	**79**	5.7	**86**	**12**	**2**	**3**	**3.5**	**97**	Qatar
100	**88**	**5.4**	**76**	**115.3**	**2.2**	**7**	**62**	**100**	Republic of Korea
78	**70**	5.48	**75**	**58.3**	**2.5**	**5.9**	**13.8**	**78**	Republic of Moldova
82	70	5.39	**70**	**62.7**	**2.7**	**6**	**40.8**	**79**	Romania
89	73	5.52	**59**	**81.8**	**3.3**	**11.1**	**16.6**	**81**	Russian Federation
62	**74**	4.93	**87**	16	**0.1**	**0.1**	**0.4**	**41**	Rwanda
91	**73**	5.58	87	**13**	0.1	**1.1**	**10.9**	**58**	Saint Lucia
87	77	5.67	87	**26**	0.6	**0.9**	**3.7**	**35**	Saint Vincent and the Grenadines
97	**76**	6.63	**72**	18.6	0.5	**0.5**	**2.6**	**75**	Samoa
40	74	5.44	87	**29**	0.5	**0.5**	1.5	**16**	Sao Tome and Principe
100	**77**	6.59	**87**	**26.5**	**2.6**	**2.1**	61.6	**99**	Saudi Arabia
48	70	5.46	**91**	3	0.1	**0.2**	**0.3**	**30**	Senegal
95	**71**	5.36	**61**	**56.5**	**2.5**	**7.4**	**43.1**	**47**	Serbia
100	**77**	5.83	**79**	**36**	**1**	**2.1**	**22.9**	**82**	Seychelles

Annex 2

Country	UHC service coverage index (SDG 3.8.1)	Index data availability[b]	Family planning demand satisifed with modern methods (%)	Antenatal care, 4+ visits (%)[c]	Child immunization (DTP3) (%)	Care-seeking behaviour for child pneumonia (%)[c]	Tuberculosis effective treatment (%)[d]	HIV treatment (%)	Insecticide-treated nets for malaria prevention (%)[e]
Sierra Leone	36	high	**36**	**76**	**86**	**72**	**51**	**21**	**72**
Singapore	≥80	medium	77	97	**96**	86	**68**	**53**	–
Slovakia	76	medium	76	97	**96**	83	**77**	**56**	–
Slovenia	78	medium	79	97	**95**	92	**67**	**72**	–
Solomon Islands	50	medium	56	65	**98**	73	**73**	41	–
Somalia	22	medium	45	6	**42**	13	**40**	**10**	23
South Africa	67	medium	84	87	**75**	65	**49**	**49**	–
South Sudan	30	medium	**14**	17	**31**	**48**	**38**	**9**	58
Spain	77	medium	81	97	**97**	92	**42**	**79**	–
Sri Lanka	62	medium	74	93	**99**	58	**58**	**23**	–
Sudan	43	medium	**31**	**51**	**93**	**48**	**44**	**8**	42
Suriname	68	high	**72**	67	**89**	**76**	**62**	**38**	–
Swaziland	58	high	**79**	**76**	**90**	**58**	**46**	**69**	–
Sweden	≥80	medium	81	97	**98**	90	**77**	**63**	–
Switzerland	≥80	medium	**87**	97	**97**	92	68	72	–
Syrian Arab Republic	60	low	60	64	**41**	77	**56**	43	–
Tajikistan	65	medium	**56**	53	**96**	**63**	**71**	**22**	–
Thailand	75	high	**91**	**93**	**99**	**83**	**42**	**61**	–
The former Yugoslav Republic of Macedonia	70	medium	**28**	**94**	**91**	93	**87**	**41**	–
Timor-Leste	47	medium	48	55	**76**	71	**48**	41	–
Togo	42	high	**33**	**57**	**88**	**49**	**61**	**39**	**74**
Tonga	62	medium	**50**	70	**78**	76	**87**	41	–
Trinidad and Tobago	75	medium	66	**100**	**96**	74	**56**	**63**	–
Tunisia	65	high	**75**	**85**	**98**	**60**	**73**	**27**	–
Turkey	71	high	**60**	**89**	**97**	85	**76**	28	–
Turkmenistan	67	medium	**74**	88	**99**	51	**55**	28	–
Uganda	44	high	**46**	48	**78**	**79**	**40**	**60**	**66**
Ukraine	63	high	**70**	**87**	**23**	**92**	**53**	**26**	–
United Arab Emirates	63	low	60	71	**99**	88	**35**	43	–
United Kingdom	≥80	medium	93	97	**96**	89	**72**	72	–
United Republic of Tanzania	39	high	**54**	43	**98**	**55**	**33**	**55**	**29**
United States of America	≥80	high	**86**	**97**	**95**	89	**74**	72	–
Uruguay	79	high	88	**96**	**95**	**91**	**65**	**52**	–
Uzbekistan	72	medium	84	88	**99**	68	**60**	28	–
Vanuatu	56	high	**59**	**52**	**64**	**72**	**71**	41	–
Venezuela (Bolivarian Republic of)	73	medium	82	**87**	**87**	72	**64**	**55**	–
Viet Nam	73	high	**77**	**74**	**97**	**81**	**72**	**43**	–
Yemen	39	high	**48**	**25**	**69**	**34**	**52**	**15**	–
Zambia	56	high	**65**	**56**	**90**	**70**	**49**	**64**	**64**
Zimbabwe	55	high	**86**	**70**	**87**	**51**	**58**	**68**	**78**

DTP3: diphtheria-tetanus-pertussis containing vaccine (third dose); HIV: human immunodeficiency virus; UHC: universal health coverage.

Notes:

[a] The statistics shown in Annex 2 are based on the evidence available in mid-2017. They have been compiled primarily using publications and databases produced and maintained by WHO or the United Nations groups. Wherever possible, estimates have been computed using standardized categories and methods in order to enhance cross-national comparability. This approach may result, in some cases, in differences between the estimates presented here and the official national statistics prepared and endorsed by individual countries. It is important to stress that these estimates are also subject to uncertainty, especially for countries with weak statistical and health information systems where the quality of underlying empirical data is limited. More details on the indicators and estimates presented here are available at the WHO UHC data portal: http://apps.who.int/gho/cabinet/uhc.jsp

[b] Data availability is classified as follows, based on information available in global data bases: high=75% or more of the tracer indicators with primary data since 2010; medium=50% or more (but less than 75%) of the tracer indicators with primary data since 2010; low=less than 50% of tracer indicators with primary data since 2010. 'Primary data' refers to original data sources and excludes estimates based on modelling and predictions.

[c] The most recent year of data available was used.

[d] Estimates of the percentage of cases treated are for 2014, while estimates of cases detected are for 2015.

[e] Only pertains to countries with highly endemic malaria.

[f] Estimates are for 2008.

At least basic sanitation (%)	Normal blood pressure (%)	Mean fasting plasma glucose (mmol/L)[f]	Tobacco non-smoking (%)	Hospital beds per 10 000 population[c]	Physicians per 1000 population[c]	Psychiatrists per 100 000 population[c]	Surgeons per 100 000 population[c]	International Health Regulations core capacity index (%)[c]	Country
14	70	5.41	74	4	<0.05	<0.05	0.1	64	Sierra Leone
100	85	5.3	83	24	3.4	13.7	102.3	99	Singapore
99	71	5.45	70	57.5	3.4	11.5	18.5	96	Slovakia
99	70	5.42	77	45.5	2.8	10.2	36.3	75	Slovenia
31	78	6.26	75	14	0.2	0.2	0.9	57	Solomon Islands
16	67	5.17	87	8.7	<0.05	<0.05	0.1	6	Somalia
73	73	5.71	79	28	0.8	0.4	6.4	100	South Africa
10	72	5.3	87	8.7	0.1	<0.05	1.2	50	South Sudan
100	81	5.63	70	29.7	3.8	8.1	23.1	90	Spain
94	78	5.38	86	35.1	0.7	0.4	0.6	71	Sri Lanka
35	70	5.24	87	8.2	3.1	0.1	0.8	71	Sudan
79	78	5.75	74	31	0.8	1.5	13.7	71	Suriname
58	71	5.52	91	21	0.1	0.1	4	51	Swaziland
99	81	5.36	81	25.9	4.1	18.3	26.1	92	Sweden
100	82	5.39	74	46.8	4.1	41.4	50.4	91	Switzerland
93	76	5.79	81	15	1.5	0.3	3	63	Syrian Arab Republic
96	74	5.48	69	47.6	1.7	2.2	15.8	89	Tajikistan
95	78	5.15	79	21	0.4	0.9	6.3	98	Thailand
91	72	5.41	69	44.3	2.8	10	36.9	89	The former Yugoslav Republic of Macedonia
44	73	4.98	57	59	0.1	0.3	1.6	66	Timor-Leste
14	71	5.32	92	7	0.1	<0.05	0.3	69	Togo
94	76	6.31	72	18.6	0.6	1	2.8	74	Tonga
92	74	5.74	87	30	1.2	3.1	18.2	70	Trinidad and Tobago
93	77	5.75	67	22.9	1.3	2.6	7.3	65	Tunisia
96	80	5.49	72	26.6	1.7	1.5	8.3	78	Turkey
97	75	5.58	69	73.6	2.3	6.3	42.4	84	Turkmenistan
19	73	5.22	90	5	0.1	<0.05	0.6	73	Uganda
96	73	5.47	69	88	3	10.1	72.5	97	Ukraine
100	80	6.04	81	11.5	1.6	0.1	11	91	United Arab Emirates
99	85	5.38	77	27.6	2.8	14.6	34.1	89	United Kingdom
24	73	5.3	85	7	<0.05	<0.05	0.2	67	United Republic of Tanzania
100	87	5.71	78	29	2.6	12.4	36.7	97	United States of America
96	79	5.51	82	28	3.9	16.9	11.7	83	Uruguay
100	75	5.71	87	39.9	2.5	1.9	26	83	Uzbekistan
54	76	5.38	81	18.6	0.2	0.4	1.9	43	Vanuatu
95	81	5.55	87	8	1.9	1.1	11.1	90	Venezuela (Bolivarian Republic of)
78	77	4.7	76	25.6	1.2	0.9	3.3	99	Viet Nam
60	69	5.59	81	7.1	0.3	0.2	0.4	46	Yemen
31	73	5.16	86	20	0.2	0.1	0.7	92	Zambia
39	72	5.37	84	17	0.1	0.1	0.5	68	Zimbabwe

Annex 3. 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, 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, Swaziland, 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, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, 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 4. UHC service coverage index by WHO and World Bank regions, 2015

WHO regions	UHC service coverage index
Global	64
African Region	44
Region of the Americas	78
South-East Asia Region	55
European Region	73
Eastern Mediterranean Region	53
Western Pacific Region	75

World Bank regions	UHC service coverage index
Global	64
East Asia & Pacific	72
Europe & Central Asia	73
Latin America & Caribbean	75
Middle East & North Africa	65
North America	≥80
South Asia	53
Sub-Saharan Africa	42

Annex 5. Financial protection indicators by WHO and World Bank regions

Table 1. Incidence of catastrophic health spending SDG indicator 3.8.2: 10% threshold

10% threshold

	2000		2005		2010	
WHO regions	% Population	Million	% Population	Million	% Population	Million
Global	9.7	588.5	11.4	741.3	11.7	808.4
African Region	8.6	56.8	9.6	72.0	10.3	88.1
Region of the Americas	10.5	87.3	13.0	115.3	11.1	103.5
South-East Asia Region	10.7	168.4	11.1	188.3	12.8	233.0
European Region	6.6	56.9	6.9	60.5	7.0	62.2
Eastern Mediterranean Region	7.6	35.8	8.7	45.9	9.5	55.5
Western Pacific Region	10.9	182.1	14.9	258	14.8	264.7

10% threshold

	2000		2005		2010	
World Bank regions	% Population	Million	% Population	Million	% Population	Million
Global	9.7	588.5	11.4	741.3	11.7	808.4
East Asia & Pacific	9.6	194.7	12.9	271.3	12.9	280.9
Europe & Central Asia	6.5	56.5	6.9	60.0	7.0	61.8
Latin America & Caribbean	13.4	70.5	17.5	98.3	14.8	88.3
Middle East & North Africa	8.3	26.3	11.5	40.1	13.4	52.2
North America	5.5	17.2	5.3	17.4	4.6	15.6
South Asia	12.0	166.1	12.0	181.7	13.5	220.6
Sub-Saharan Africa	8.6	57.2	9.6	72.6	10.3	89.0

Note: Catastrophic health spending is defined as out-of-pocket expenditures exceeding 10% of household total consumption or income. This definition with this threshold 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".

Source: 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.

Table 2. Incidence of catastrophic health spending SDG indicator 3.8.2: 25% threshold

25% threshold

	2000		2005		2010	
WHO regions	**% Population**	**Million**	**% Population**	**Million**	**% Population**	**Million**
Global	1.9%	112.8	2.4%	154.9	2.6%	179.3
African Region	1.6%	10.8	2.1%	15.6	2.6%	21.9
Region of the Americas	2.0%	16.6	2.4%	20.9	1.9%	17.5
South-East Asia Region	2.0%	30.8	2.1%	35.1	2.9%	51.8
European Region	1.0%	8.4	1.0%	9.1	1.0%	8.9
Eastern Mediterranean Region	1.0%	4.8	1.1%	5.9	1.4%	8.4
Western Pacific Region	2.5%	41.1	3.9%	68.0	3.9%	70.6

25% threshold

	2000		2005		2010	
World Bank regions	**% Population**	**Million**	**% Population**	**Million**	**% Population**	**Million**
Global	1.9%	112.8	2.4%	154.9	2.6%	179.3
East Asia & Pacific	2.2%	43.6	3.3%	70.4	3.4%	73.2
Europe & Central Asia	1.0%	8.4	1.0%	9.0	1.0%	8.9
Latin America & Caribbean	2.6%	13.6	3.2%	18.0	2.5%	14.9
Middle East & North Africa	1.4%	4.5	1.7%	5.9	2.2%	8.4
North America	1.0%	3.1	0.9%	3.0	0.8%	2.6
South Asia	2.1%	28.8	2.2%	33.0	3.0%	49.4
Sub-Saharan Africa	1.6%	10.8	2.1%	15.7	2.5%	22.0

Note: Catastrophic health spending is defined as out-of-pocket expenditures exceeding 10% of household total consumption or income. This definition with this threshold also 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".

Source: 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.

Table 3. Incidence of impoverishing health spending at the 2011 PPP $1.90-a-day poverty line

$1.90-a-day

	2000		2005		2010	
WHO regions	% Population	Million	% Population	Million	% Population	Million
Global	2.1	130.4	1.8	115.6	1.4	97.0
African Region	2.3	15.4	1.6	11.7	1.7	14.2
Region of the Americas	0.4	3.3	0.5	4.1	0.3	2.8
South-East Asia Region	3.9	61.9	3.3	56.6	3.1	56.8
European Region	0.2	2.0	0.1	0.9	0.1	0.7
Eastern Mediterranean Region	1.4	6.7	0.9	4.7	0.5	3.2
Western Pacific Region	2.4	40.9	2.2	37.4	1.1	19.4

$1.90-a-day

	2000		2005		2010	
World Bank regions	% Population	Million	% Population	Million	% Population	Million
Global	2.1	130.4	1.8	115.6	1.4	97.0
East Asia & Pacific	2.2	45	1.9	40.4	1.0	20.9
Europe & Central Asia	0.2	2.0	0.1	0.9	0.1	0.7
Latin America & Caribbean	0.6	3.3	0.7	4.1	0.5	2.8
Middle East & North Africa	0.7	2.2	0.5	1.8	0.3	1.3
North America	0.0	0.0	0.0	0.0	0.0	0.0
South Asia	4.5	62.4	3.7	56.5	3.5	57.1
Sub-Saharan Africa	2.3	15.5	1.6	11.8	1.6	14.2

Note: Impoverishing spending on health occurs when a household is forced by an adverse health event to divert spending away from nonmedical budget items such as food, shelter, 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 UHC directly to the first SDG goal, namely to end poverty in all its forms everywhere.

Source: WHO and the 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 impoverishing pending 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.

Table 4. Incidence of impoverishing health spending at the 2011 PPP $3.10-a-day poverty line

$3.10-a-day

	2000		2005		2010	
WHO regions	% Population	Million	% Population	Million	% Population	Million
Global	1.7	106.1	1.8	115.8	1.8	122.3
African Region	2.1	13.9	1.4	10.1	1.5	12.5
Region of the Americas	0.9	7.9	1.0	8.8	0.7	6.2
South-East Asia Region	2.4	37.8	2.3	39.1	3.4	61.3
European Region	0.6	4.9	0.2	2.1	0.2	1.5
Eastern Mediterranean Region	1.7	8.0	1.7	9.1	1.3	7.7
Western Pacific Region	2.0	33.4	2.7	46.4	1.8	32.9

$3.10-a-day

	2000		2005		2010	
World Bank regions	% Population	Million	% Population	Million	% Population	Million
Global	1.7	106.1	1.8	115.8	1.8	122.3
East Asia & Pacific	1.9	38.1	2.4	50.0	1.7	37.4
Europe & Central Asia	0.6	4.9	0.2	2.1	0.2	1.5
Latin America & Caribbean	1.5	7.9	1.6	8.8	1.0	6.2
Middle East & North Africa	1.3	4.1	1.1	4.0	0.9	3.3
North America	0.0	0.0	0.0	0.0	0.0	0.0
South Asia	2.7	37.1	2.7	40.7	3.8	61.3
Sub-Saharan Africa	2.1	13.9	1.4	10.2	1.4	12.6

Note: Impoverishing spending on health occurs when a household is forced by an adverse health event to divert spending away from nonmedical budget items such as food, shelter, clothing etc. 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 UHC directly to the first SDG goal, namely to end poverty in all its forms everywhere.

Source: 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 impoverishing 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.

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