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# TRACKING UNIVERSAL HEALTH COVERAGE

FIRST GLOBAL MONITORING REPORT





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# Preface

Universal health coverage (UHC) means that all people receive the quality, essential health services they need, without being exposed to financial hardship.

A significant number of countries, at all levels of development, are embracing the goal of UHC as the right thing to do for their citizens. It is a powerful social equalizer and contributes to social cohesion and stability. Every country has the potential to improve the performance of its health system in the main dimensions of UHC: coverage of quality services and financial protection for all. Priorities, strategies and implementation plans for UHC will differ from one country to another.

Moving towards UHC is a dynamic, continuous process that requires changes in response to shifting demographic, epidemiological and technological trends, as well as people's expectations. But in all cases, countries need to integrate regular monitoring of progress towards targets into their plans.

In May 2014, the World Health Organization and the World Bank jointly launched a monitoring framework for UHC, based on broad consultation of experts from around the world. The framework focuses on indicators and targets for service coverage – including promotion, prevention, treatment, rehabilitation and palliation – and financial protection for all. This report provides the first global assessment of the current situation and aims to show how progress towards UHC can be measured.

A majority of countries are already generating credible, comparable data on both health service and financial protection coverage. Nevertheless, there are data blind spots on key public health concerns such as the effective treatment of noncommunicable diseases, the quality of health services and coverage among the most disadvantaged populations within countries.

UHC is a critical component of the new Sustainable Development Goals (SDGs) which include a specific health goal: "*Ensure healthy lives and promote wellbeing for all at all ages*". Within this health goal, a specific target for UHC has been proposed: "*Achieve 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*". In this context, the opportunity exists to unite global health and the fight against poverty through action that is focussed on clear goals. Supporting the right to health and ending extreme poverty can both be pursued through universal health coverage.

The focus on UHC as part of the SDG agenda has much to offer. First, it provides a platform for an integrated approach within the health sector. The broad set of 13 targets for health, as well as health elements in many other targets, are justifiably broad but should not lead to the fragmented silo approaches that characterized much of the health MDGs.

Second, the SDGs and UHC are intrinsically about improving equity. Policies, programmes and monitoring should focus on progress among the poorest people, women and children, people living in rural areas and from minority groups. Using UHC as a common monitoring platform ensures a continuous focus on health equity.

Third, the health goal is closely linked to many of the other social, economic and environmental SDGs. Intersectoral action, including a major emphasis on promotion and prevention, are urgently needed. To end poverty and boost shared prosperity, countries need robust, inclusive economic growth. To drive growth, they need to build human capital through investments in health, education, and social protection for all their citizens. To free the world from extreme poverty by 2030, countries must ensure that all their citizens have access to quality, affordable health services.

While meeting the monitoring demands of these new objectives may be daunting, it also presents an opportunity to focus on strengthening country health information and research systems, using an integrated, comprehensive approach based on each country's individual needs. This requires solid, transparent monitoring and review systems, as well as regular implementation and service delivery research that jointly feed an ongoing learning process of UHC implementation. Both health information systems and the science of service delivery require more investment but, if results are translated into targeted action, that investment will yield major resource savings while also advancing the UHC endeavour.

As challenging as the monitoring task may be, we are not starting from zero. There is already a strong foundation of health indicators to build upon, and a wealth of national and international experience. Much of this experience is built on the work done tracking the MDGs, but is increasingly focused on a more comprehensive approach that also includes NCDs and injuries.

Enhanced and expanded monitoring of health under the SDGs should seek to build on that experience, sharpening our focus on the key health service and financial protection interventions that underpin UHC. Effective UHC tracking is central to achieving the global goals for poverty alleviation and health improvement set by the World Bank Group and WHO. Without it, policy-makers and decision-takers cannot say exactly where they are, or set a course for where they want to go. They cannot know whether they are focussing their efforts in the right areas, or whether their efforts are making a difference.

Monitoring is thus fundamental to the achievement of UHC objectives. It will also be vital to the realization of the SDGs. This report is a critical step to show how monitoring progress can be done, telling us what the state of coverage of interventions and financial protection is and telling us where to focus most.

Tim Evans,  
Senior Director,  
Health, Nutrition and Population,  
World Bank Group

Marie-Paule Kieny,  
Assistant Director General,  
World Health Organization

# Contributors

The principal contributors to this report were Ties Boerma, David Evans, Tim Evans, Gabriela Flores, Patrick Hoang-Vu Eozenou, Daniel Hogan, Ahmad Reza Hosseinpoor, Justine Hsu, Gary Humphreys, Joseph Kutzin, Colin Mathers, Gretchen Stevens and Adam Wagstaff.

Specific sections, analyses and reviews were contributed by staff from WHO, World Bank, non-governmental organizations, academic institutions and other United Nations agencies: Peter Ackland, Leontine Alkema, Agbessi Amouzou, Le Bao, Michel Beusenberg, Caryn Bredenkamp, Doris Chou, Richard Cibulskis, Daniel Cotlear, Alison Commar, Melanie Cowan, Tania Dmytraczenko, Majid Ezzati, Christin Fergus, Rifat Hossain, Christopher Fitzpatrick, Katherine Floyd, Gilles Forte, Marta Gacic-Dobo, Rick Johnston, Ivo Kocur, Van Lanssingh, Hans Limburg, Daniel Low-Beer, Michael Lynch, Wahyu Retno Mahanani, Robert Marten, Matthews Mathai , Gayle Martin, Ann-Beth Moller, Maggie Niu, Leanne Riley, Jane Robertson, Lale Say, Owen Smith, Edouard Tursan D'Espaignet, Christel Vermeersch and Bin Zhou.

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# Abbreviations

<b>ANC</b>	antenatal care
<b>ART</b>	antiretroviral therapy
<b>BRICS</b>	Brazil, the Russian Federation, India, China and South Africa
<b>DHS</b>	Demographic and Health Survey
<b>DTP</b>	diphtheria, tetanus and pertussis
<b>INCB</b>	International Narcotics Control Board
<b>IPL</b>	international poverty line
<b>ITN</b>	insecticide treated bednet
<b>LMIC</b>	low and middle-income country
<b>MDD</b>	major depressive disorder
<b>MDG</b>	Millennium Development Goal
<b>MICS</b>	Multiple Indicator Cluster Survey
<b>NCD</b>	noncommunicable disease
<b>NHIS</b>	National Health Insurance Scheme (Ghana)
<b>NTD</b>	neglected tropical disease
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OOP</b>	out-of-pocket
<b>RAAB</b>	rapid assessment of avoidable blindness
<b>RMNCH</b>	reproductive, maternal, newborn and child health
<b>SAB</b>	skilled attendance at birth
<b>SDG</b>	Sustainable Development Goal
<b>SMART</b>	specific, measurable, achievable, relevant and time-bound
<b>STEPS</b>	STEPwise approach to surveillance
<b>TB</b>	tuberculosis
<b>THE</b>	total health expenditure
<b>UHC</b>	Universal health coverage
<b>WHO</b>	World Health Organization

# Glossary

The definitions given below apply to the terms used in this document. They may have different meanings in other contexts.

**Catastrophic health expenditure.** Out-of-pocket payments for health services that exceed a given fraction of total household expenditure.

**Effective coverage.** People who need health services obtain them in a timely manner and at a level of quality necessary to obtain the desired effect and potential health gains.

**Impoverishing health expenditure.** Out-of-pocket payments for health services that push households below, or further below, a poverty line.

**Out-of-pocket (OOP) payment.** Direct payment made to health-care providers by individuals at the time of service use, i.e. excluding prepayment for health services – for example in the form of taxes or specific insurance premiums or contributions – and, where possible, net of any reimbursements to the individual who made the payment.

**Universal health coverage.** Universal health coverage means all people receiving the health services they need, including health initiatives designed to promote better health (such as anti-tobacco policies), 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.

# Executive summary

**Bringing universal health coverage (UHC) into focus:** One of the main challenges faced in supporting UHC-oriented reform is the perception on the part of some decision-makers that UHC is too diffuse a concept, and UHC-related progress unquantifiable. This first global monitoring report on tracking UHC is produced partly to challenge that notion. Most countries are already generating credible, comparable data on both health service and financial protection coverage, despite data blind spots on key public health concerns such as noncommunicable diseases (NCDs) and health service quality.

Broadly defined, UHC means all people receiving the quality health services they need, without being exposed to financial hardship. UHC involves three coverage dimensions – health services, finance, and population – and is a dynamic, continuous process that changes in response to shifting demographic, epidemiological and technological trends, as well as people's expectations.

**The main UHC monitoring challenges:** We face three main challenges in tracking UHC: first, sourcing reliable data on a broad set of health service coverage and financial protection indicators; second, disaggregating data to expose coverage inequities; third, measuring effective coverage, which not only includes whether people receive the services they need but also takes into account the quality of services provided and the ultimate impact on health. Household surveys are the main data source because they can provide accurate population statistics on coverage of services and financial protection, disaggregated by socioeconomic status, place of residence, sex and other relevant variables. Health facility data are another valuable data source for several indicators. Strengthening and harmonizing data collection through surveys and health facility reporting systems are critical for the monitoring of UHC. Because health system strengthening is the main means by which countries can progress towards UHC, UHC monitoring needs to be integrated into broader health systems performance assessment, and because UHC includes health services and financial protection coverage, it is essential that UHC monitoring of both aspects takes place side by side. Many countries with weak health systems score strongly on financial protection coverage simply because citizens forgo needed health services. It is only by evaluating the coverage of health services and financial protection jointly that we can reach appropriate conclusions as to how effectively the health system is providing coverage.

**The tracer health service indicators:** The report presents the global and regional situation with regard to eight core tracer health service coverage indicators for: reproductive and newborn health (family planning, antenatal care, skilled birth attendance); child immunization (three doses of diphtheria, tetanus and pertussis (DTP)-containing vaccine); infectious disease (antiretroviral therapy (ART), tuberculosis (TB) treatment); and non-health sector determinants of health (improved water sources and improved sanitary facilities). The indicators have been chosen because they involve health interventions from which every individual in every country should benefit – no matter what the country's level of socioeconomic development or epidemiological circumstances, and no matter what type of health system it may have – and because recent, comparable data are available for most countries.

The picture they present is mixed. On the one hand more people have access to essential health services today than at any other time in history. In some cases, global population coverage already surpasses the 80% minimum proposed by the World Health Organization (WHO)/World Bank global monitoring framework. This is true, for example, of DTP3 containing

vaccination which, in 2013, reached 84% of one-year-olds. On the reproductive and maternal health front, coverage is approaching 80%, with 73% of live births taking place in the presence of a skilled birth attendant, and roughly the same proportion of women (76%) reporting that their demand for family planning is met by a modern method. Substantial coverage gaps remain, however. For example, in spite of significant improvements in the coverage rates for ART, only 37% of people living with HIV receive ART treatment. For TB only 55% of new TB cases reported receive diagnosis and successful treatment. Access to sanitation is also a major concern, with 36% of the world's population, or nearly 2.5 billion people, lacking access to improved sanitation facilities, putting them at risk of several diseases including dysentery, cholera and typhoid.

Equity is a matter of concern across nearly all indicators in many parts of the world, with at least 400 million people currently lacking access to one of seven essential services for Millennium Development Goal (MDG) priority areas. Needless to say poverty is a factor here. High-income Organisation for Economic Co-operation and Development (OECD) countries have high coverage rates across almost all essential services, while sub-Saharan Africa lags well behind other regions for several basic health services, with only DTP3-containing immunization coverage approaching 80%. Inequities are also a factor within countries. For example, in selected low- and middle-income countries with recent survey data, the median coverage with four or more antenatal care visits (ANC4) is less than 50% of women in the poorest quintile of households, compared to a median coverage of 83% for women in the richest quintile. While coverage inequities continue to be a major concern, and should be a central focus in developing reform strategies to move towards UHC, it is encouraging to note that, overall, disadvantaged subpopulations, such as rural residents, the poor and the less educated have seen greater increases in key coverage indicators over the past decade or so than their urban, wealthier and better-educated counterparts.

**Candidate tracer indicators:** As already stated, the current set of core health indicators offers no insight into health service coverage for NCDs, which account for around 55% of the global disease burden, and are estimated to kill around 38 million people per year, almost three quarters of those deaths – 28 million – occurring in low- and middle-income countries. For this reason the report presents a small set of potential UHC tracer indicators for diseases and conditions which are close to meeting the criteria for tracer indicator status. For some, the combination of data availability and the scope for monitoring underlying services make them very strong candidates. This is true, for example, of hypertension treatment coverage. Hypertension is the leading risk factor for cardiovascular diseases, it has a clearly defined biomarker (elevated blood pressure), effective treatment options (including lifestyle and pharmacological treatments), and can be measured through household surveys. Blood pressure and hypertension treatment are also the subject of extensive monitoring, including more than 150 national population-based surveys in 97 countries in the past decade. Despite these efforts, to date, no global or regional estimates of hypertension treatment coverage exist. Type 2 diabetes treatment coverage is another promising candidate. Effective treatment coverage is measurable through population-based surveys that include a test for diabetes and questions on whether the respondent is taking medication for diabetes. In the past 10 years, at least 119 national population-based surveys in 75 countries have been conducted.

**Other promising indicators include:** percentage of adults (aged 15 years and over) who have not smoked tobacco in the past 30 days; cataract surgical coverage, an indicator not only of ophthalmological surgical care coverage, but also of access to care by the elderly; and preventive chemotherapy treatment coverage for neglected tropical diseases which is key to ensuring that the diseases of the least well-off are being prioritized from the very beginning of the path towards UHC. Other indicators such as depression treatment and palliative care coverage are considered in this report in an effort to capture a broader scope of health services, but are still limited in terms of accurate assessment, especially need for the services and the availability of comparable data.

**Monitoring financial protection.** The key to protecting people from financial hardship is to ensure that most funds for the health system are prepaid, that there are few if any barriers to the redistribution of these funds (i.e. little if any fragmentation in pooling), and that services are purchased from these pooled funds in a way that limits the need for people to pay for services out-of-pocket (OOP) at the time of use. Using OOP payment to fund health systems has a number of disadvantages, but among the most important is that it discourages people (especially the poor) from seeking care. By focusing on the level of OOP payment it is possible to monitor the degree to which people lack financial protection. In 2013, globally 32% of total health expenditure came from OOP payments, down from 36% in 2000. While this is the right direction, the 2013 figure is nevertheless considered an indication that in many countries OOP payments are still too high (below 20% of total health expenditure is usually a good indication of reduced risk of catastrophic health spending). The report utilizes the two most commonly used indicators of financial hardship: catastrophic health expenditure, and impoverishing health expenditure.

**Financial protection indicators:** Catastrophic health expenditure can be calculated in different ways, but for the purposes of this report is defined as more than 25% of total household expenditure. It is important to note that catastrophic health expenditure does not necessarily lead to impoverishment in the sense of pushing a household below a poverty line. Rich households, or households with access to credit, for example, might be able to pay large medical bills that, while onerous, do not require them to forgo consumption of essentials or of key family investments such as for children's schooling. Impoverishing expenditure, on the other hand, is expenditure that pushes households into, or further into, poverty. Here too, different measurement criteria can be applied. In this report impoverishing expenditure is judged to occur where it causes household consumption to slip below the international poverty line of US\$ 1.25 or US\$ 2.00 per day per capita (at purchasing power parity), a consumption indicator used by the World Bank.

Effective tracking of financial protection depends on reliable household expenditure surveys which are used to establish the estimated number of people affected as a share of the total population (headcount ratio). While useful, headcount indicators do not capture the magnitude of impoverishment, or make a distinction between spending much more than 25% of total household expenditure or spending just marginally more. Nor do they take account of people lacking financial protection who are deterred from seeking health care because the cost of doing so is simply unaffordable. For a complete picture regarding whether people obtain the services they need and receive financial protection, it is imperative to consider the health coverage and financial coverage indicators together.

Based on our sample of countries, the median percentage of people experiencing catastrophic health spending (defined as more than 25% of total household expenditure) was reported to be 1.8%, ranging from six countries at the low end reporting less than 0.5% of people impacted by catastrophic health spending in the preceding year and, at the higher end, four countries reporting a catastrophic spending incidence in excess of 4%. With regard to impoverishment, health spending pushed 0.6% of people below the US\$ 1.25 a day poverty line, and 0.9% below US\$ 2 per day (country median). Much larger proportions of those who already live below the poverty lines are pushed further into poverty because of health payments: 4% and 14.5% at the US\$ 1.25 and US\$ 2.00 per day poverty lines respectively. In addition, nearly one third of people do not spend anything on health services at all. Among 23 countries with two surveys during 2000–2011 the majority succeeded in reducing the incidence of catastrophic and impoverishing health payments, and the country median values went down by 29% and 24% respectively.

**Inequities in financial protection:** Because the indicators of financial protection are derived from general household expenditure surveys which tend to reflect differences in income and wealth, disaggregated data are also available, and reveal that the incidence of catastrophic

expenditure (country median) rises from 1.0% in the lowest spending quintile and gradually increases to 2.7% in the highest spending quintile. However, health spending leading to impoverishment is almost entirely concentrated in the lowest spending quintile in the majority of countries (households in that quintile being closer to the poverty line to begin with). Lack of any expenditure on health whatsoever is also most common among the poorest, with a country median of 41%. This number drops to 22% for the richest quintile. From the data it is impossible to know whether this reflects simply lower utilization of needed services by the poor, or the fact that they used services and were fully protected from OOP payments by the country's health financing system. Experience suggests that the former explanation is more likely, but the data do not allow for a definitive conclusion on this.

**Moving forward:** Notwithstanding the persistence of inequities in access to health services (400 million people lacking at least one of seven essential health services) and the relatively high level of impoverishment caused by health spending, it is apparent that UHC progress is a reality, and that key aspects of that reality are measurable. This first global monitoring report on tracking UHC shows that using a core set of tracer indicators of the kind recommended by the WHO/World Bank Group UHC monitoring framework, it is possible to track progress in key areas of financial protection and health services coverage not just for populations as a whole, but for critical subpopulations such as people living in rural areas and the poor.

The Sustainable Development Goals (SDGs) that are to carry us into the future are likely to include a number of specific health goals as indicated by the UN General Assembly's endorsement of the Open Working Group report in which "Ensure healthy lives and promote wellbeing for all at all ages" is one of 17 SDGs. There are 169 targets for all goals combined, and the health goal (Goal 3) comprises 13 targets, including one (target 3.8) for UHC: "*Achieve 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*". While meeting the monitoring demands of these new objectives may be daunting, it also presents an opportunity to focus on strengthening country health information systems, using an integrated, comprehensive approach and based on each country's individual needs. Where appropriate these efforts should be supported by well-aligned investments by international partners.

As challenging as the monitoring task may be, we are not starting from zero. There is already a strong foundation of health indicators to build upon, and a wealth of experience, both at the national and international level, much of it related to the work done tracking the MDGs, but increasingly focused on a more comprehensive approach that also includes NCDs and injuries. Enhanced and expanded monitoring of health under the SDGs should seek to build on that experience, sharpening our focus on the key health service and financial protection interventions that underpin UHC. Effective UHC tracking is central to achieving the global goals for poverty alleviation and health improvement set by the World Bank Group and WHO. Without it, policy-makers and decision-takers cannot say exactly where they are, or set a course for where they want to go. They cannot know whether they are focusing their efforts in the right areas, or whether their efforts are making a difference. Monitoring is thus fundamental to the achievement of UHC objectives. It will also be vital to the realization of the SDGs.



# Bringing UHC into focus

Interest in universal health coverage (UHC) has never been greater. Starting with the 58th World Health Assembly resolution in 2005,<sup>1</sup> which called for countries to plan for the transition to UHC, a broad consensus regarding the importance of UHC has been steadily building. Today the list of major international institutions actively working on UHC concept-framing, capacity-building and financial support includes United Nations agencies, development banks, bilateral donors and foundations. At the same time, a series of high-level consultations and conferences have advanced our understanding of the challenges faced and crystallized opinion around a number of calls for action.<sup>2, 3, 4</sup> The passage in 2012 of a United Nations General Assembly resolution calling for governments “to accelerate the transition towards universal access to affordable and quality health care services”,<sup>5</sup> confirmed not only the breadth of consensus regarding the urgency of action on UHC, but also the level of concern about the state of the world’s health systems.

And there are many reasons for concern, from the lack of quality health services and inadequate financial protection coverage for significant portions of the population in low- and middle-income countries, to the challenges of sustaining and expanding the gains already achieved in high-income countries. Generally speaking, these problems are perceived as a steady rumble of dysfunction and discontent, but from time to time there is a spike in awareness regarding health system inadequacy. The recent Ebola outbreak in West Africa is a case in point, the severity of the outbreak being in large part due to weak health systems, including a lack of capacity in surveillance and response. As a result of that outbreak, basic health services such as vaccinations, maternal and child health services, and treatment for common conditions suffered, and need to be restored, but longer term, key health reforms must be implemented, including strengthening community systems and their linkages to district health services, aiming to provide promotion, prevention, treatment, rehabilitation and palliation without causing financial hardship. In other words what is needed is UHC, which not only implies quality health service and financial protection for all, but provides a foundation for resilient health systems that can quickly identify, respond to and recover from outbreaks and disasters.

That many countries have embraced the UHC concept is undeniable; the World Health Organization (WHO) and the World Bank have provided technical assistance on UHC to more than 100 countries since 2010. While UHC is a matter of concern for countries of all sizes, down to the smallest island states, it is worth noting that the BRICS countries (Brazil, the Russian Federation, India, China and South Africa), representing around half of the global population, are all engaged in health system reforms designed to extend, deepen, or otherwise improve health service coverage for their populations while simultaneously working on ways to increase financial protection for those availing themselves of health services (1).

For many high-income countries, commitment to the core UHC idea – that everyone can obtain the quality, essential health services they need without suffering financial hardship when paying for them – has underpinned health-system design and development for decades; for others the UHC journey began more recently, driven by a complex combination of factors, including

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1 World Health Assembly Resolution 58.33 2005.

2 Bangkok Statement on Universal Health Coverage, January 2012

3 Mexico City Political Declaration on Universal Health Coverage 2012.

4 Tunis Declaration on Value for Money, Sustainability and Accountability in the Health Sector, July 2012.

5 Sixty-seventh session of the United Nations General Assembly 2012A/67/L.3 A/67/L.36. Global health and foreign policy.

greater prosperity and fiscal expansion (2), as well as increased popular demand and the political awareness and commitment that comes with it. Now that UHC has been proposed as one of the targets of the Sustainable Development Goals (SDGs) (Goal 3.8: "Achieve 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"), it is likely that the mobilization of resources committed to UHC-oriented, health system strengthening will increase (3, 4).

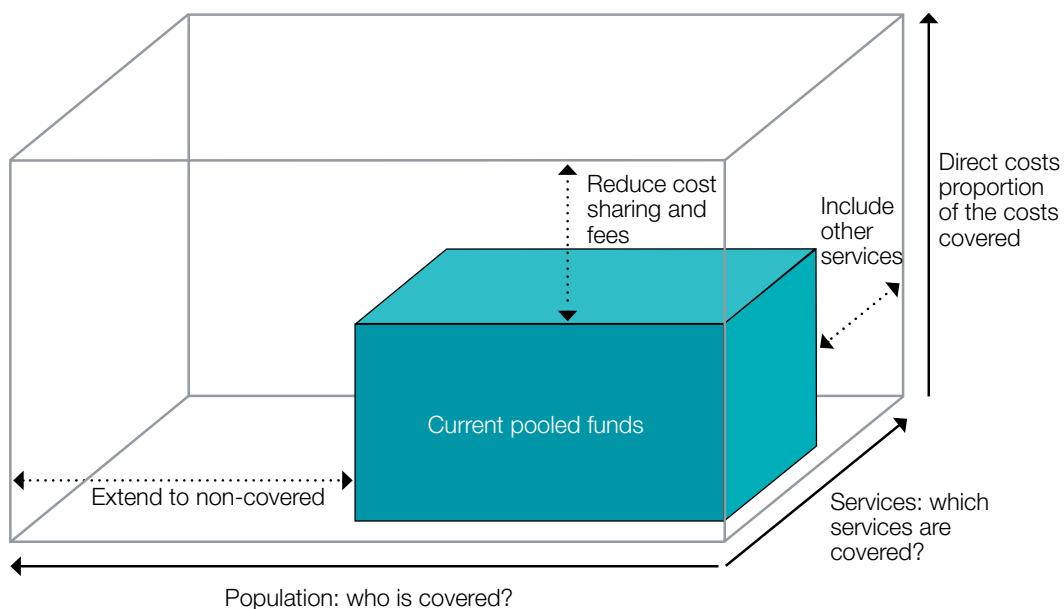
But the road to UHC is by no means smooth, and in most of the countries newly embracing a UHC agenda, commitment to the general idea is balanced by at least as much concern regarding how exactly to move forward. The challenges are many, ranging from the political to the technical, but among the most important is how to track UHC progress. At one level, the importance of UHC monitoring hardly needs stating. Without it, policy-makers and decision-takers cannot say exactly where they are, or set a course for where they want to go. They cannot know whether they are focusing their efforts in the right areas, or whether their efforts are making a difference. Less obviously perhaps, effective monitoring – and the solid grasp of quantifiable detail it permits – is crucial for the progress of national UHC agendas. One of the challenges faced in supporting UHC-oriented reform is the perception on the part of some ministers that UHC is too diffuse a concept. That this is more than just an academic issue is borne out by reports that the lack of progress towards UHC observed in some countries reflects a tendency to focus resources on discrete, vertical health programmes because the results are easier to quantify (5).

This report – the first global monitoring report on tracking UHC – is produced partly to challenge that notion, to show that UHC is quantifiable, and that progress towards its key goals, both in terms of health service and financial protection coverage can be tracked. Intended for a broad audience, from policy-makers to researchers and students interested in UHC-related issues, the report will show that the majority of countries are already generating credible, comparable data in both these dimensions, including data for a set of Millennium Development Goal (MDG)-related indicators that provide useful insights into UHC-related progress. For example, we can already affirm with some confidence that more people have access to essential health services today than at any other time in history, and that in some cases – child vaccination, for example – global population coverage already surpasses the 80% minimum proposed by the global monitoring framework. On the financial protection front, the data show that the share of out-of-pocket (OOP) payment in total health expenditure has continued to decline, albeit slowly, standing at 32.1% in 2013, a fall of 3.5% from 2002. Notwithstanding these areas of illumination, data blind spots persist – in particular with regard to noncommunicable disease (NCD) and injury-related indicators, but also, more broadly, with regard to the quality of health services delivered – and more work is needed to bring the UHC picture into focus. If momentum for UHC is to be maintained, the image will need to get sharper quickly.

## Defining UHC

Broadly defined, UHC means all people receiving the health services they need, including health initiatives designed to promote better health (such as anti-tobacco policies), 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 (6). Thus UHC comprises two main components: quality, essential health service coverage and financial coverage – both extended to the whole population. Three dimensions – (effective) health services, finance, and population – are typically represented in what has come to be known as the coverage cube (Figure 1.1). All countries struggle to fill the cube, including those with long-established health systems which may, for example, be fighting to maintain their levels of coverage in the face of rising costs. It is for this reason that the UHC endeavour is sometimes referred to as a journey rather than a destination, a dynamic process that must be responsive to constantly changing demographic, epidemiological and technological trends. The changing nature of health systems has significant implications for UHC monitoring (6).

**Figure 1.1.** The three dimensions of UHC



Health systems not only evolve or are reformed over time, but vary significantly from country to country. For example, although predominant reliance on compulsory revenue sources (7),<sup>1</sup> reduced fragmentation in risk pooling arrangements, and increasing the extent to which services are purchased based on information regarding population health service needs and the performance of providers, are attributes of systems that have made good progress towards UHC (8), the way these mechanisms are implemented varies considerably from country to country.

Some countries, such as Costa Rica or Brazil have moved towards unified systems, striving to offer the same services to all from public funding (9, 10). In Costa Rica, this funding is derived from a mixture of payroll taxes (mandatory contributions for health insurance coverage levied on employers and employees) and general government budget revenues that are pooled together in a national health insurance fund. Brazil relies overwhelmingly on general tax revenues of central and local governments with pooling organized at state, municipal and national levels. Others organize their funds in different pools (schemes) for different population groups. Such arrangements often exacerbate underlying social inequalities, with contributory-based schemes serving populations from which it is relatively easy to collect mandatory contributions (often formal sector workers including civil servants) and typically offering a relatively generous benefit package, while general budget revenues are used to fund services for the rest at a relatively low expenditure level per capita (11). There are exceptions, such as the Philippines (12), that provide more comprehensive plans to the most vulnerable, but this is within their single payer framework and not organized as a separate scheme.

Finally, financial coverage provided by different schemes ranges from minimal, as in some versions of China's New Cooperative Medical Scheme (13), where patients pay as much as 75% of the cost of service, to the comprehensive, as in Mexico's Seguro Popular (14), or Chile's AUGE which offers an integrated care package with explicit standards of care guarantees that has significantly

1 In this context, “compulsory” refers to a public source of funds, i.e. some form of taxation, such as taxes on the income of individuals or corporations, consumption (e.g. value added tax (VAT)), mandatory “contributions” for health insurance (often referred to as social health insurance contributions), and other taxes (or in some cases, public revenues derived from natural resources). In some systems there is a real mix of such public sources while in others one tends to predominate. This message on compulsory sources thus applies both to so-called “national health service” and “social health insurance” systems.

reduced (but not altogether nullified) coverage disparities between the government-managed insurance scheme that is fully subsidized for some of the population, and the private schemes (ISAPREs) that are funded through a combination of mandatory and additional contributions (15).

These differences often reflect different departure points. For the most part, countries are trying to progress towards UHC out of the policies and systems they have inherited, rather than starting from scratch. In rare instances, however, countries have indeed “started over”. This is true of Estonia, for example, which completely transformed its system of financing and delivery after the collapse of the Union of Socialist Soviet Republics (USSR) and independence in 1991, with largely private primary care providers serving nearly the entire population under contract to the publicly funded Estonian Health Insurance Fund (16).

Countries do not just start from different places, they have also made different degrees of progress towards UHC, ranging from those that are still setting their national health reform agendas for UHC to countries with mature health systems based on principles that are consistent with UHC but require constant attention to adjust national policies to meet changing demographic and economic conditions (17). In many cases, differences in progress and approach reflect the resources that have been made available. The reforms initiated in China, for example, are backed by colossal financial resources, and are widespread, ranging from improving social health insurance schemes in both rural and urban areas, to strengthening the primary health care system and reforming the public hospital sector (18). Other countries are targeting a smaller core set of priorities. Ethiopia, for example, is focusing on reducing under-five, infant, and neonatal mortality rates and boosting immunization rates and the delivery of other child health services (19). Because of the diversity of countries’ circumstances, and the different interventions they are likely to prioritize, the indicators they decide to monitor will also vary.

## Tracking UHC

In response to governments’ calls for technical support on UHC monitoring, WHO and the World Bank have come together to produce a UHC monitoring framework, which is based on a series of country case studies and technical reviews as well as consultations and discussions with country representatives, technical experts and global health and development partners (20). The framework focuses on the two key components of UHC: coverage of the population with quality, essential health services and coverage of the population with financial protection (21).

With regard to health services, the framework proposes two broad categories: prevention (which here includes services for health promotion and illness prevention) and treatment (which includes treatment per se, but also rehabilitation and palliative care services) (22). With regard to tracking levels of financial coverage, the framework is somewhat simpler, proposing the use of two indicators: the incidence of impoverishment resulting from OOP health payments, and the incidence of financial catastrophe from the same cause. The former captures the degree to which health spending causes extreme hardship by pushing families below the poverty line, while the latter indicates the number of households of all income levels that incur health payments that are higher than a certain proportion of their resources (21). Other indicators exist that allow for a more nuanced view, such as the extent to which people are pushed further into poverty, and the severity of financial catastrophe. These indicators can be calculated from household expenditure surveys using readily available statistical programs.<sup>1</sup> The global framework recommends that countries, at a minimum, track the proportion of the population pushed into poverty, and/or pushed further into poverty, by OOP health payments.

The framework also proposes that countries include a set of core, tracer indicators suitable for the purposes of regional global UHC monitoring. A global measure of progress can only be synthesized from country data if there is a common and comparable set of tracer indicators that

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<sup>1</sup> World Bank Group. ADePT software platform.

meet international measurement standards. Similarly, it is only with comparable indicators that countries can derive the maximum benefit from each other's experiences and lessons learnt (23). These common tracer indicators also allow countries to compare their progress against that of other, similar countries. In the following chapter we will look at two sets of indicators that might serve to fulfil these different requirements.

Before moving on to look at the main UHC-tracking challenges, it is worth noting that, while it is clear that the choice of indicators should, as far as possible, be based on objective considerations such as relevance and quality, there will also be trade-offs between keeping the number of indicators small, manageable (and understandable) and employing enough to capture the full breadth of health services within a UHC programme. A key consideration here is simplicity, since understandable "tracer" indicators to monitor progress can be a powerful way of galvanizing efforts to move towards UHC.

Finally, with regard to coverage levels, although the ultimate goal of UHC with regard to service coverage is 100% coverage, it is practical to set targets based on empirical baseline data and past trends in the whole population and among the poorest, taking into account uncertainties related to measuring need and the importance of effective coverage (21). For this reason the WHO/World Bank framework specifies a target of a minimum 80% coverage of quality, essential health services, regardless of economic status, place of residence or sex. For financial protection, the available evidence suggests that a target of 100% protection from both catastrophic and impoverishing health payments is achievable for the population.

## The main UHC monitoring challenges

**Challenge no. 1: sourcing reliable data.** Tracking UHC presents a number of challenges. As noted above one of the most important is the relative scarcity of reliable data on a broad set of health service coverage and financial protection indicators, disaggregated by key stratifiers to ascertain progress in all population groups. The process of identification of good tracer indicators for UHC tracking undertaken in preparation for the WHO/World Bank framework, and for this report, has revealed major data blind spots, including, for example, a lack of measurable coverage indicators for several health priorities such as mental health, injuries and disability, while indicators for many major NCDs are at best only partially quantifiable. At the same time, few treatment indicators have reliable denominators, as population need is difficult to measure, especially for treatment interventions for which potentially high OOP expenses are a likely barrier to service use. It is worth noting here that aggregate measures of utilization levels, such as per capita inpatient/outpatient visits offer little insight into underlying need or levels of access, and are for that reason not included as UHC indicators. Determining population need for specific interventions is a key challenge, especially in settings where a large proportion of the population may not seek health services at all, considering them unaffordable, and problems therefore remain undiagnosed. This challenge applies to both acute and chronic conditions and similarly to conditions that require ambulatory or inpatient care. In addition, measures of health system capacity, such as levels of health spending or doctors per 1000 population, are not considered UHC indicators because these are determinants of health coverage rather than attributes or measures of coverage.

For most indicators, effective population-based surveys are the key to improving our picture of health service and financial protection coverage. For example, the two main indicators used (catastrophic and impoverishing expenditure) depend on household expenditure data, typically obtained through household surveys. Unfortunately, household surveys are far from being perfect and have been criticized for a number of shortcomings, including the lack of standardization across countries regarding the recall period used (which hinders comparability), and the fact that many household health surveys do not include biomarkers (such as a blood pressure or blood glucose level reading) which would provide much richer information on effectiveness of coverage. Efforts to standardize survey instruments and methods of implementation are under way, notably with the International Household Survey Network at the World Bank and WHO.

**Challenge no. 2: measuring effective coverage.** Where coverage data are available, there is rarely sufficient information to monitor levels of effective coverage. Effectiveness is a measure of the degree to which evidence-based health services achieve desirable outcomes (24), and effective coverage is coverage with services that achieve those outcomes (25). Measuring coverage with quality of care is clearly at the heart of the UHC endeavour, and there is thus considerable interest in measuring it (26). However, measuring quality of care often requires the use of methods and measures in addition to basic coverage indicators (Box 1).

### **Box 1. Measuring quality**

To understand the problem we have in measuring health-care quality it is first important to understand what is meant by the term. Health service quality has been defined in a number of ways and comprises at least half a dozen dimensions (27), including patient safety (avoiding injuries to people for whom the care is intended), effectiveness (the degree to which evidence-based health services achieve desirable outcomes), people-centredness (providing care that responds to individual preferences, needs, and values) and integratedness (care that makes available the full range of health services from health promotion, disease prevention, diagnosis, treatment, disease management, rehabilitation and palliative care services, throughout the health system, and according to people's needs throughout the life-course).

While each of these dimensions can readily be described, they are difficult to measure. Thus, for example, with regard to safety, health systems around the world have for a number of years tried to institute patient safety reporting and learning systems to help track and assess trends in adverse events, but are only beginning to achieve a common understanding of what terminology to use.<sup>1</sup> There are examples of national data collection systems that work reasonably well, but not many, and without exception they are found in developed countries. Sources of frustration include low-quality coding practices, and, in the specific area of patient experience, the lack of nationally standardized measurement systems. In 2002, WHO was tasked by the 55th World Health Assembly to develop norms and standards that might help with this problem, and their efforts led to the development of a conceptual framework for a system of classification, but progress has been limited and hard won (28).

Because of the general lack of internationally comparable data on health service quality, comparative health system research at the international level has been limited to comparisons of cost and utilization of care, supplemented by appraisals of health status based on broad indicators such as mortality rates and life expectancy (29). Apart from being far too broad to offer much insight into health service quality, these indicators also depend on factors outside the health system, such as environmental and economic influences. It is to address this problem that the OECD has for a number of years been working on the Health Care Quality Indicators (HCQI) project, a project designed to provide comparable cross-national data on the quality of care, focusing on effectiveness, patient experience and safety (29). The long-term objective of the HCQI project is to develop a set of indicators that can be used to raise questions for further investigation concerning quality of health services across countries.

Measuring effective coverage in fact requires multiple components, including estimates of need, use, quality and outcome of interventions. As mentioned above, defining and measuring treatment need is often challenging. An example of an indicator that is close to reaching the standard required for international comparison is hypertension treatment coverage which allows for a fairly robust estimate of effective coverage because population need and effectiveness of treatment can be measured through household surveys.

There have been several efforts to measure effective coverage. One example is a series of studies undertaken in Latin America and the Caribbean which encountered significant data gaps and were

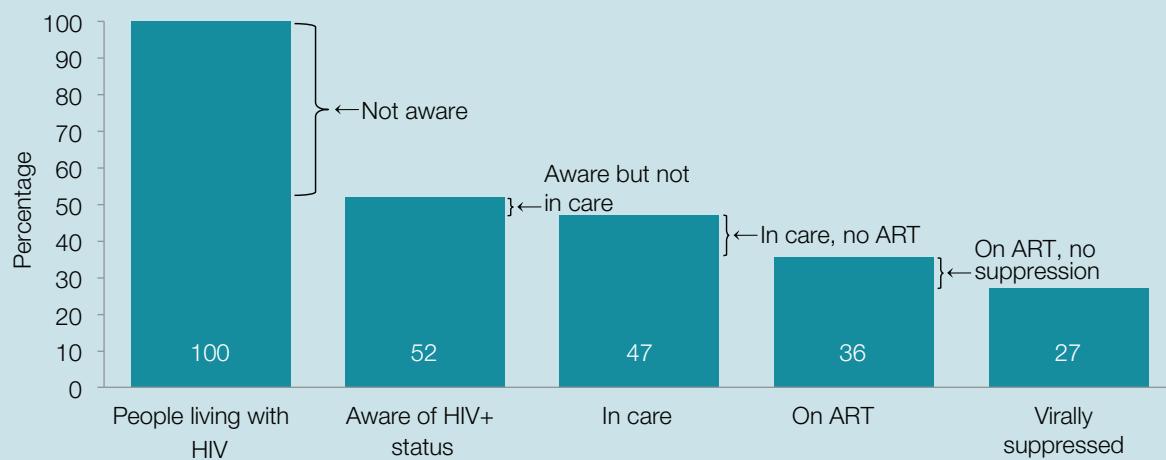
<sup>1</sup> Measuring the unmeasurable. Sir Liam Donaldson, Chair of WHO Patient Safety ([http://www.who.int/patientsafety/news\\_events/news/liam\\_editorial/en/](http://www.who.int/patientsafety/news_events/news/liam_editorial/en/)).

for the most part unable to estimate effective coverage for most services (30). However, while finding ways to monitor effective coverage is challenging, it can be done, as shown by a recent national survey undertaken in Kenya which measured the fraction of the HIV-infected population who had seen their viral loads shrink to an undetectable level as a result of treatment (Box 2). To achieve viral suppression the patients had to pass through an effective coverage cascade that involves testing the respondents for HIV, asking about their awareness of their HIV status and their treatment status and measuring the viral load in the blood. The largest loss was due to lack of awareness, with 48% of people living with HIV being unaware of their HIV-positive status. Effective coverage, meaning being aware, on treatment and displaying viral load suppression, was only 27%. For many indicators, the end-point of the effective coverage cascade cannot be measured and additional indicators have to provide information on the quality of care and the likelihood of achieving the desired outcomes. Earlier steps along the way have to serve as proxies. This report has taken this approach for several indicators, for example when estimating coverage of antenatal care (ANC) and skilled attendance at birth (SAB), where ANC and SAB are proxy measures of effectiveness. For other cases, such as family planning, effective coverage is easier to measure through self-report.

#### **Box 2.** Measuring effective coverage

A recent survey undertaken in Kenya measured the fraction of the HIV-infected population that achieved viral suppression (reduction to an undetectable level) as a result of treatment. To achieve viral suppression they had to pass through an effective coverage cascade, starting with becoming aware of their HIV infection, then accessing the health system, being given antiretrovirals, and finally, having those antiretrovirals work. Clearly, monitoring the fraction of people living with HIV who have suppressed viral loads is more informative than the cruder measure of the fraction of people living with HIV receiving antiretroviral therapy (ART), as it more accurately reflects expected benefits in terms of patient survival and reduced transmission. In cases where the end-point of the effective coverage cascade cannot be measured, earlier steps along the cascade must serve as proxies.

**Figure 1.2.** Effective ART coverage cascade: percentage of people living with HIV on ART with viral load suppression (less than 1000 copies/ml), Kenya, 2012



**Challenge no. 3: monitoring equity.** A commitment to equity is at the heart of the UHC endeavour, but achieving it is far from easy, and a number of countries that are pursuing a UHC agenda are struggling to ensure that poorer, less advantaged segments of the population are not left behind. While tracking the level of health services and financial risk coverage attained by

a country may show the average level of attainment of population coverage, it only tells part of the story. To be meaningful, UHC tracking also needs to capture inequalities in coverage. The WHO/World Bank monitoring framework proposes three primary elements for disaggregation that should be measured comparably in all settings: economic status (measured by household income, expenditure or wealth), place of residence (rural or urban), and sex.

Household surveys are often the prime instrument to collect data on equity, but health facility data also contribute, particularly continuous data on subnational differences (22, 31). Regular household surveys are a rich source of disaggregated data on coverage of health services and financial protection. However, as noted above, household surveys do present some challenges. In the first instance, data needed to measure service coverage and data used to measure financial protection are usually found in different surveys (e.g. Demographic and Health Surveys (DHS)/Multiple Indicator Cluster Surveys (MICS) versus household budget surveys). Second, comparability of results may be affected by differences in survey questions or by differences in design and implementation, as borne out by several studies pointing to results that may vary according to the way surveys are conducted (32, 33). For example, the health expenditures reported in surveys (or parts of surveys) focusing on health tend to be higher than those reported in surveys (or sections) where health is only one item under consideration (34, 35). Ongoing efforts to develop global standards for survey modules for core indicators of service coverage, financial protection and other areas of health should help resolve this issue (36). With regard to health facility data, concerns include the fact that facility records rarely have a measure of the living standards of the patient's household, precluding straightforward disaggregation by economic variables. Data gathered in the course of service provision are also limited to individuals who avail themselves of health care, excluding those who do not. This means that estimates of the denominator – all people who need the service – have to be derived from other data. Sourcing reliable data for health inequality monitoring poses a particular challenge in many countries.

Finally, country UHC monitoring needs to be integrated into broader health systems performance assessment if it is to realize its full potential as actionable intelligence. Monitoring UHC coverage in its different dimensions by itself does not reveal why or what policy levers can be used to get better results: it is the most direct result of the implementation of those policies. For this reason the monitoring of UHC indicators needs to be embedded within health systems performance assessment frameworks that link changes in coverage to potential drivers of progress caused by changes in inputs, structures and processes. These will include structural elements such as the availability and quality of infrastructure, health professionals, medicines, blood and medical devices, and process elements such as health system reforms (e.g. changes in provider payment mechanisms) that seek to improve service quality or health service utilization. Assessing the distribution of health needs and services is critical. And while understanding a country's health system reforms is important to determine the causes of change in health coverage measures, it is also essential to assess changes in non-health system social determinants of health such as educational attainment and poverty rates, as such changes also greatly influence coverage and outcomes (22).

Some countries are already embedding UHC tracking into their broader health systems performance assessment, Thailand being a good example (37). Fortunately, the indicators used to monitor health sector performance generally include the main UHC progress indicators. For example, in Singapore, even though there is no official monitoring framework for UHC, indicators of access, quality and affordability of services (all key UHC criteria) are regularly tracked and reported to parliament as part of the key performance indicators of the Ministry of Health (38). Only with this overall picture, including applied evaluation research on the effects of various reform efforts, will it be possible to understand why progress towards UHC is faltering or not, which in turn will allow for any necessary adjustments or changes in strategy.

## **Conclusion**

This chapter has looked at the basic challenges and concepts related to the monitoring of UHC. It is clear that among the many challenges faced, inadequate availability of data on key indicators looms large. National and global UHC monitoring is currently hampered by the limited number of indicators of health service and financial protection coverage that are both relevant and of reasonable quality and can be measured with existing instruments. However, as the following chapters will show, it is already possible to achieve significant insights with what is available, while focused efforts on developing certain selected indicators will go a long way towards enhancing our ability to capture the overall UHC picture in the future.

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# Coverage of health interventions

There are many widely accepted indicators of intervention coverage and risk factor prevalence. The 2015 Global Reference List of 100 Core Health Indicators, recommended by global health agency leaders, includes 60 such indicators (1). As noted in Chapter 1, in order to facilitate global UHC tracking, it is recommended that countries focus on a common and comparable set of tracer indicators, covering health promotion, illness prevention, treatment, rehabilitation and palliative care. The Global Reference List includes an indicator if it has a proven track record, is prominent in the monitoring of major international declarations, or has been identified through international mechanisms such as reference or interagency groups as a priority indicator in specific programme areas. Related to this idea is the notion that these tracer indicators should be supported by extensive measurement experience and possibly by an international database. Such indicators also need to be relevant and reliable (a concept that includes reproducibility), valid (in terms of criterion, construct and content validity), responsive, precise, acceptable and feasible. From an advocacy perspective, it may also be helpful to identify indicators that are easily understood and help focus political and social commitment, such as the child and maternal mortality rate indicators.

This chapter begins by presenting the global and regional situation with regard to eight core tracer coverage indicators on reproductive and newborn health, infectious disease and non-health sector determinants of health: family planning, four or more visits for antenatal care (ANC4), skilled attendance at birth (SAB), child immunization (three doses of DTP-containing vaccine), HIV ART, TB treatment, improved water sources and improved sanitary facilities. The indicators have been chosen because they involve health interventions from which every individual in every country should benefit – no matter what the country's level of socioeconomic development or epidemiological circumstances, and no matter what type of health system it may have – and because there are recent, comparable data for the majority of countries that allow for an assessment of the current situation and trends, globally, by region and by country. A description of the core tracer indicators for monitoring UHC is provided in Table A1.1 in Annex 1, which also describes measurement issues and offers more detail on the results for these indicators.

As noted in the previous chapter, equity is a central UHC concern, and tracking it – using disaggregated data that allow for the capture of demographic, socioeconomic and geographical dimensions – a UHC tracking priority. Unfortunately, disaggregated data are not readily accessible for many indicators because of gaps in data collection, and the analysis and measurement challenges they pose. Here, we present data on coverage disparities within countries for six of the eight indicators for which extensive data are available, with a focus on differences related to household wealth and place of residence (i.e. urban or rural). With regard to population coverage levels, special attention has been given to whether the global monitoring framework's target of a minimum of 80% coverage in all population groups is being achieved.

All of the core indicators refer to prevention and treatment interventions related to the health MDGs. The coverage levels for these indicators are not only a good measure of the current situation regarding essential interventions for reproductive health, maternal health, and newborn health, they also offer some sense of coverage regarding infectious disease control. The most obvious blind spot concerns interventions targeting NCDs, which are omitted because data availability is more limited, and efforts to generate global and regional coverage estimates have only just begun. To capture the full range of UHC activity, it is clear that we will have to develop indicators

and standardized measurement instruments that permit the tracking of interventions focused on NCDs, which account for 55% of the global burden of disease, as well as other significant drivers of morbidity and mortality such as injuries. It is with a view to supporting that endeavour that in the last part of the chapter we present several indicators for which high levels of comparable data are not yet available, either because not enough has been invested in data collection or because there are important measurement obstacles, but which nevertheless come close to satisfying the requirements of the core tracer indicator set. These candidate indicators are also presented in Table A1.1. Both the core set and candidate core set of indicators also deserve consideration for in-country monitoring. This section also includes the current situation in respect of service coverage for neglected tropical diseases (NTDs), a group of 17 diseases that affect the poorest people of the world, and for which estimates of preventive chemotherapy coverage are available from many affected countries.

## Global health service coverage indicators

### The global picture: progress and gaps

More people have access to essential health services today than at any other time in history. In some cases, global population coverage already surpasses the 80% minimum proposed by the global monitoring framework (Figure 2.1). This is true, for example, of DTP3 vaccination which, in 2013, reached 84% of one-year-olds. It is also true of access to improved water sources – a non-health sector variable which nevertheless has profound implications for population health. According to the most recent data, nearly 90% of the global population now has access to water that is either piped into a dwelling, plot or yard, obtained from a public tap or well, or collected from a protected spring or rainwater. On the reproductive and maternal health front, 73% of live births take place in the presence of a skilled birth attendant, with roughly the same proportion of women (76%) reporting that their demand for family planning is met by a modern method.

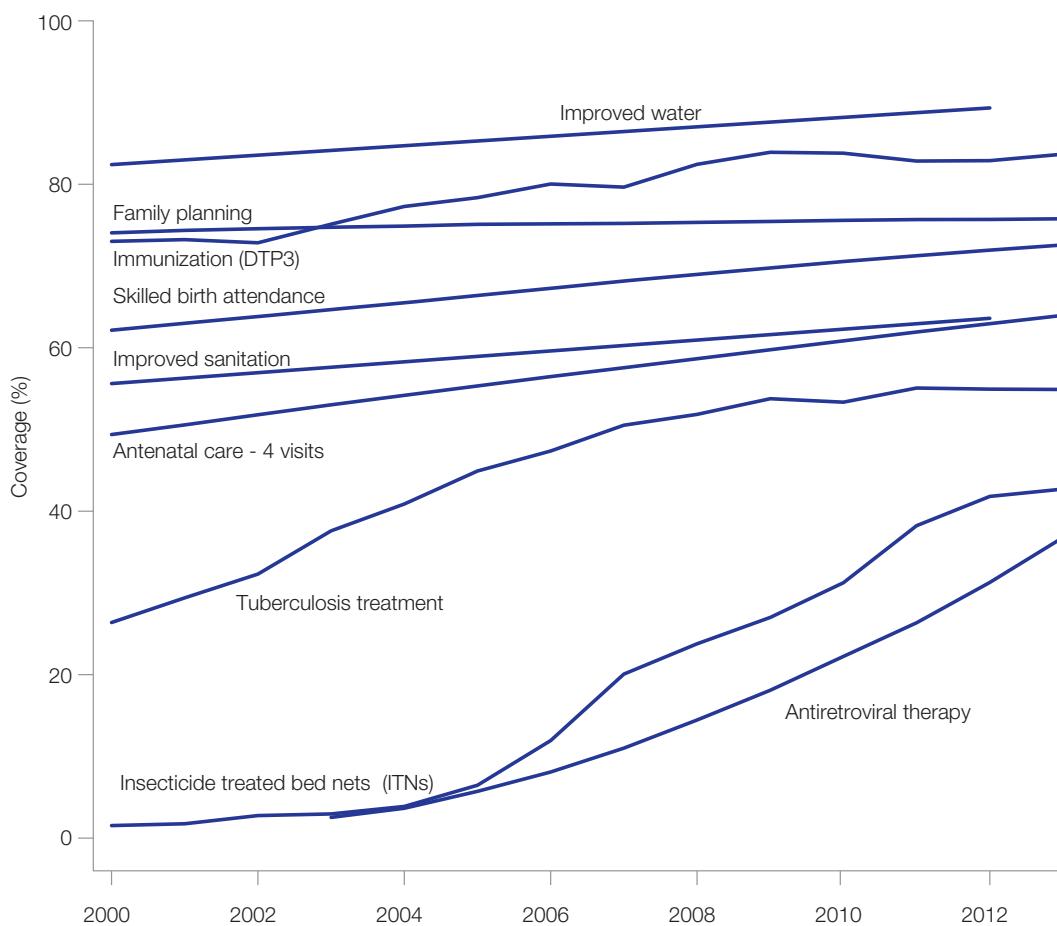
Despite this progress substantial coverage gaps remain. For example, in spite of significant improvements in the coverage rates for ART, access to care remains low, with only 37% of people living with HIV receiving ART. It is important to note, however, that this is partly a function of changes in WHO guidelines for ART. The original threshold for treatment initiation was below 200 CD4 cells/mm<sup>3</sup>, and is now set at 500 CD4 cells/mm<sup>3</sup> or less with earlier initiation for some special populations. This change expands the population deemed eligible for treatment, and therefore shrinks the coverage achieved. For TB an estimated 64% of cases are detected and reported to national authorities and, of those, 84% are reported as having been successfully treated. This corresponds to only 55% of new TB cases reported to have received diagnosis and successful treatment.<sup>1</sup> Finally, access to sanitation remains a major concern, with 36% of the world's population, or nearly 2.5 billion people, lacking access to improved sanitation facilities, putting them at risk of several diseases including dysentery, cholera and typhoid (2).

Moreover, a closer look at all these indicators reveals nuance that gives cause for disquiet. For example, with regard to water, access to an improved source does not mean that the water being collected is necessarily clean, making this a prime example of coverage not being the same as effective coverage (see Box 2 in Chapter 1). A recent literature review reported that in 38% of 191 studies, over a quarter of samples from improved sources contained faecal contamination (3). Maternal health indicators also reveal reasons for concern, given the massive mobilization of resources as part of the MDG effort. For example, the proportion of women delivering in health facilities has gradually increased, but not enough, and there are valid concerns about the quality of obstetric care in health facilities (4). Meanwhile, family planning coverage, while relatively high, has seen virtually no improvement since 2000.

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<sup>1</sup> The remaining 45% is a mixture of TB cases that were not diagnosed, and TB cases that were detected but not reported to national authorities and who received care of unknown quality. In some high TB burden countries, there are large numbers of TB cases that are detected but not reported.

**Figure 2.1.** Global levels and trends of health MDG-related UHC tracer indicators, 2000–2013



### How many people suffer from lack of access to health services?

Ensuring access to quality health services is a central tenet of UHC, and, in many parts of the world, lack of access continues to be a major concern. Barriers to access take a variety of forms, the most obvious being the basic lack of quality health services, but there are also obstacles such as distance to the nearest health facility, restricted opening hours at facilities or overcrowded facilities that impose long waiting times. The cost of the health services may also deter use, especially where direct OOP payment is involved. Other significant barriers include: lack of information on available services, lack of confidence in facilities and staff, and sociocultural barriers including constraints related to gender or age, beliefs and cultural preference (5, 6). According to the latest available data, at least 400 million people are currently not receiving at least one of seven essential services for MDG priority areas<sup>1</sup> (Table 1).

1 The total estimate of 400 million includes all women whose demand for family planning is not met, pregnant women who did not make at least 4 antenatal visits (minus 38% to account for unintended pregnancies), infants who did not receive 3 doses of DTP-containing vaccine, HIV-positive adults and children not receiving HIV treatment, adults with new cases of TB not receiving TB treatment and children 1–14 years not sleeping under an insecticide-treated bed net (ITN)).

**Table 1.** Number of people in need and not receiving (unmet need) essential health services in MDG priority areas in 2013

Coverage indicator	Target population	Associated health outcomes	Total need (millions)	Coverage (%)	Unmet need (millions)
Demand for family planning met by modern method	Women 15–49 years	21.6 million unsafe abortions	895	76	217
Four antenatal care visits	Pregnant women	2.8 million neonatal deaths; 289 thousand maternal deaths	139	64	50
Skilled birth attendance	Delivering women	2.8 million neonatal deaths; 289 thousand maternal deaths	139	73	38
3 doses of DTP-containing vaccine	Infants	6.3 million child deaths	134	84	22
Antiretroviral therapy for HIV	People living with HIV	1.5 million AIDS-related deaths	35	37	22
Treatment of TB	People with TB	1.1 million TB deaths	9	55	4
Sleeping under an insecticide treated bed net	People living in high-risk malaria settings	584 thousand malaria deaths	822	43	471
	All ages		140	52	68
	0–4 years		310	37	196

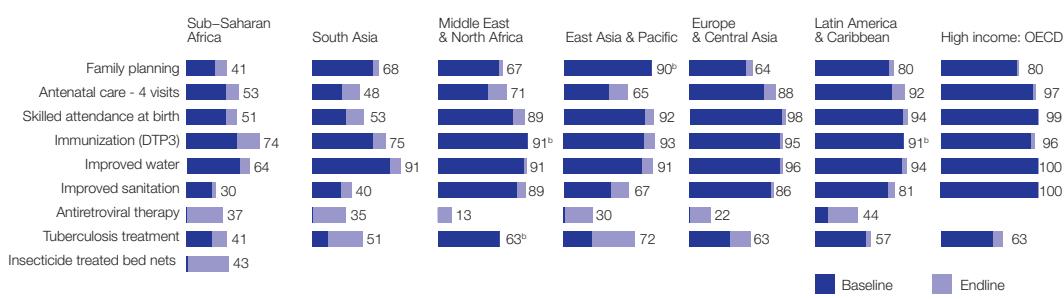
### The regional coverage picture

While a global overview has value – for example in presenting an understandable UHC narrative for purposes of consensus-building – global coverage levels and trends mask important regional variation (Figure 2.2; Table A1.2 lists the WHO and World Bank Member States in each region). For instance, high-income OECD countries have high coverage rates across almost all essential services, as represented by the core indicators, a notable exception being effective coverage rates for TB, estimated to be 63%. Indeed, coverage approaches or attains 100% for ANC4 and SAB, DTP3 and improved water and sanitation. In contrast, sub-Saharan Africa lags well behind other regions for several basic health services, only one indicator approaching coverage in excess of 80% (DTP3). South Asia's coverage numbers are similarly disappointing, the strongest indicator being improved drinking water, at 91%. Roughly two thirds of global unmet need for these essential services is the result of low coverage in these two regions, where just over a third of the global population lives.

While the regional picture throws up some striking, if not entirely surprising, disparities, it also shows what concerted efforts to bring about change can achieve, even in resource-poor countries. The most obvious example of this is HIV treatment. ART coverage has increased dramatically around the world since 2003, including in sub-Saharan Africa, where the majority of HIV infections occur. Seven countries in the region reported a coverage rate of 50% or higher in 2013, with Botswana achieving the highest rate at 70%. However, it is clear that much remains to be done. The four countries with the largest numbers of people living with HIV worldwide include South Africa and Kenya, which had ART coverage rates of 42% and 41% respectively in 2013, India which had 36% coverage, and Nigeria where the ART coverage rate was 20%.

TB diagnosis and treatment has also improved, largely as a result of global MDG-related efforts, and global strategies developed by WHO (the DOTS strategy (directly observed treatment, short-course) from the mid-1990s until 2005, and the Stop TB Strategy since 2006) (7). One of the keys to tackling the TB epidemic is effective case detection, so it is encouraging to see that in 2013 the case detection rate for new and relapse cases rose to an estimated 64%, up from 40% in 2000. The global TB treatment success rate, at 86% in 2012, has not changed since 2005. The data for detection and treatment success combined result in an effective coverage of 55% in 2013. Coverage of TB detection and treatment has noticeably improved in the South Asia and East Asia and Pacific regions (Figure 2.2).

**Figure 2.2.** Regional coverage in 2000 (baseline) and 2013 (endline; unless otherwise noted) for essential health services<sup>a</sup>



a ART coverage shown for 2003 and 2013; improved water and sanitation shown for 2000 and 2012.

b Coverage decreased slightly in this region.

Promoting the use of insecticide treated bed nets (ITN) has also been the focus of considerable efforts in the past decade, from free distribution to target groups, notably in the context of ANC or immunization campaigns, to free universal population-based distribution campaigns targeting the entire population at risk (8, 9). Such efforts have resulted in increased access to ITN and awareness of the importance of their use in countries with ongoing malaria epidemics, and have raised coverage rates significantly. The ITN coverage rate is not one of our eight core global indicators because malaria is not a major public health problem in most regions. However, valuable data are generated by sub-Saharan African countries, which constitute the main focus of the malaria epidemic, and the indicator is included here for that reason. The proportion of children sleeping under an insecticide-treated bed net increased from almost zero in 2000 to 43% in 2013. Efforts to improve ITN coverage are primarily intended to achieve a reduction in child mortality (MDG4) and a focus on child and maternal mortality (MDG5) appears to be reflected in increasing levels of ANC4, SAB and DTP3 immunization in the regions that are most in need of improvement. For example, coverage of the DTP3 vaccine increased from 51% to 74% in sub-Saharan Africa between 2000 and 2013, nearly twice the improvement achieved in South Asia, the next most improved region.

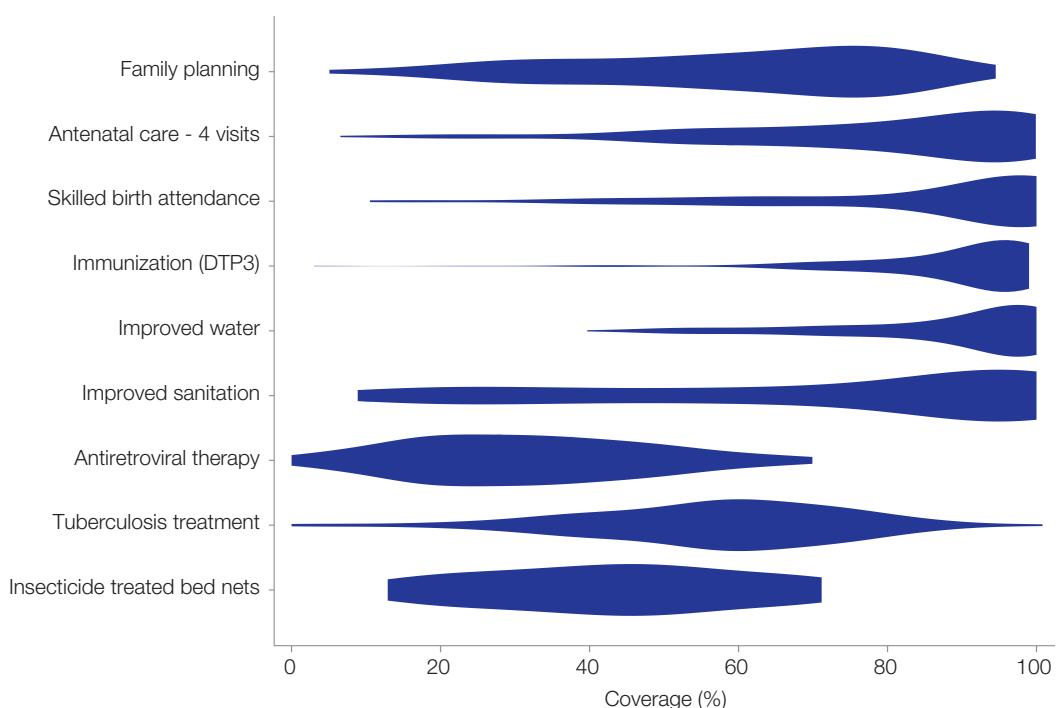
Despite such gains, it is clear that much remains to be done. The 18 percentage point increase in improved sanitation coverage in East Asia and the Pacific between 2000 and 2012 shows that progress is possible, even with the most challenging of problems, but it does not alter the fact that the majority of people living in sub-Saharan Africa and South Asia still lack access to improved sanitation facilities. Other areas of concern include the degree to which expectant mothers are able to access formal health services in certain parts of the world. Europe and Central Asia, Latin America and the Caribbean and the high-income OECD countries all have rates of ANC coverage of nearly 90% or more. In sub-Saharan Africa and South Asia coverage is closer to 50%.

## Major variation between countries

Drilling down to the country level, more detail emerges, revealing areas that may require more effort, or changes in approach. For example, with regard to reproductive and maternal health, it might be thought that progress on family planning coverage and SAB (both at roughly 75% coverage) is comparable, and that both areas therefore merit equal attention. However, the distribution of country-level coverage rates tells a very different story (Figure 2.3). With regard to SAB, the majority of countries exceed 90% coverage and 97 countries out of 194 attain coverage rates above or equal to 98%. With family planning, on the other hand, only three countries attain coverage rates above 90%. In fact, as can be seen from the coverage distribution chart, a significant number of countries report family planning coverage of below 70%, which might suggest that more effort should go into encouraging contraceptive awareness and/or use in certain countries, notably by addressing sociocultural barriers to access.

Approximately two thirds of countries have coverage of SAB, DTP3 and improved water above 90%, while more than a quarter of countries have coverage rates for family planning, improved sanitation, and TB treatment below 50%. Coverage of ART is also below 50% for most countries, although, once again, it should be noted that eligibility guidelines for treatment initiation were expanded only recently and this has significantly impacted the ART number.

**Figure 2.3.** Country distributions of current coverage for essential health services<sup>a</sup>



a For each indicator, the vertical height of the distribution track corresponds to the number of countries with a specific national level of service coverage.

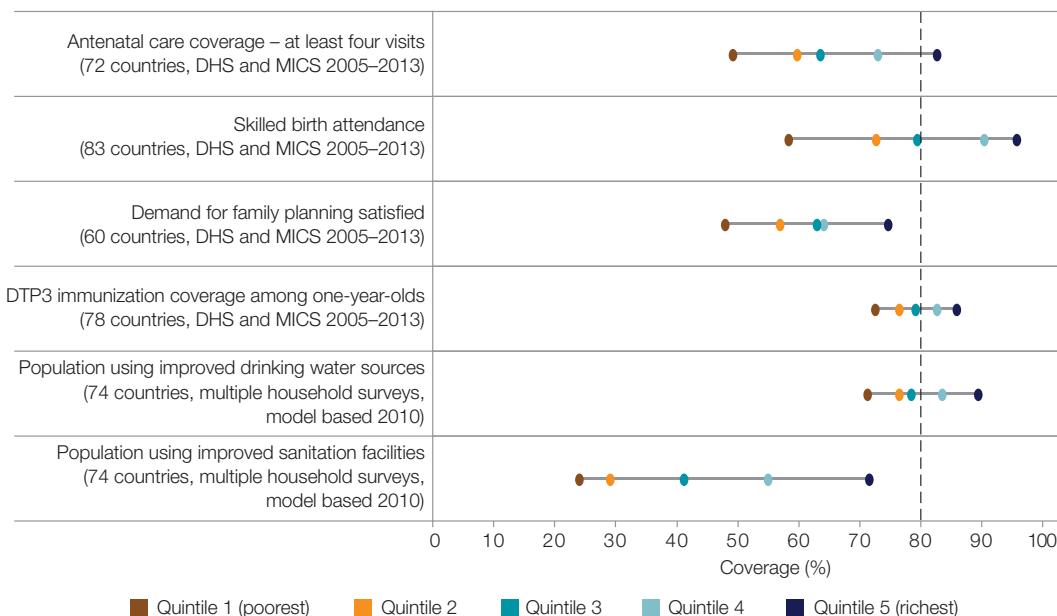
## Service coverage inequities

While there has been a reduction in service coverage disparities within countries over the past decade or so (between 1995–2004 and 2005–2013), with a tendency for greater improvements in service coverage for disadvantaged subgroups, inequities nevertheless persist and concerted efforts are required to reduce them further. Wealth, gender, age and geographical location all play a role in determining whether and to what degree an individual benefits from quality, essential health services, as is clearly reflected in coverage figures for our indicator set. For example, in low- and middle-income countries, coverage levels for ANC4 and SAB decline steeply in poorer populations (Figure 2.4). The median ANC4 coverage is less than 50% of women in the poorest

quintile of households in selected low- and middle-income countries, compared to a median of 83% for women in the richest quintile. SAB coverage presents a similar pattern, with a median of 96% of live births in the richest quintile covered – comparable to levels achieved in OECD countries – compared to just 58% of live births in the lowest wealth quintile. This disparity is even more pronounced in low-income countries, with median coverage rates of 34% in the poorest quintile as compared to 89% in the richest (see Annex 1, Figure A1.9).

Yawning disparities in coverage of improved sanitation also exist within countries. In low- and middle-income countries, for example, only 23% (median) of the poorest quintile have access to improved sanitation, compared to 71% in the richest. It should be noted, however, that wealth gradients are not so steep for all of the tracer indicators. For example, median DTP3 coverage in low- and middle-income countries is 73% in the poorest quintiles as compared to 86% in the richest, and median access to improved drinking water ranges between 71% and 89% coverage for all wealth quintiles.

**Figure 2.4.** Median coverage of selected interventions by wealth quintile, in low- and middle-income countries

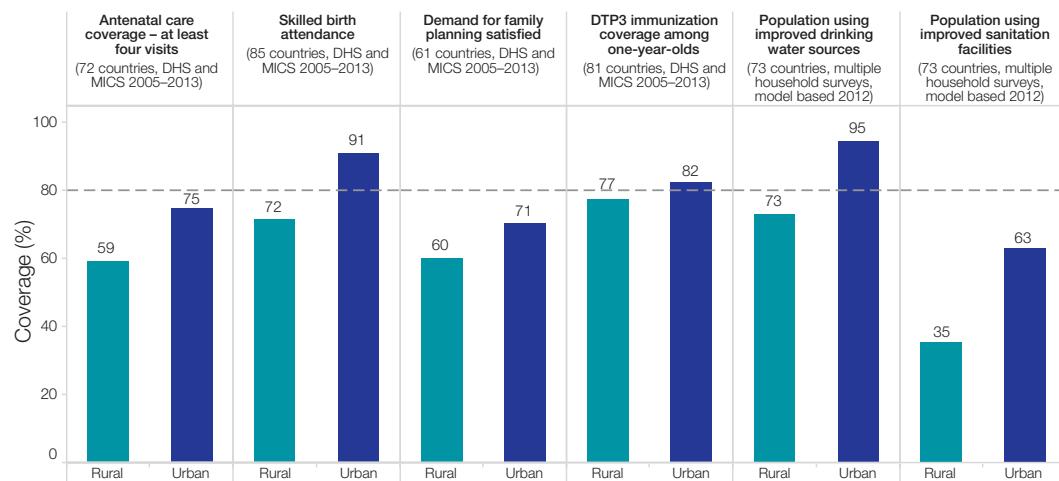


While coverage rates vary depending on household wealth, other factors also determine access, geographical location being an obvious example. A crude but measurable way to understand geographical inequalities within countries is to break down intervention coverage by urban versus rural area (Figure 2.5). Across low- and middle-income countries, rural areas have lower median coverage than urban areas for all six tracer indicators for which we have disaggregated data, and median coverage is below 80% in rural areas for all indicators. In contrast, median coverages of SAB, DTP3 and improved drinking water source are all above 80% in urban areas.

Age too is a key consideration for certain services. For example, in 49 of the low- and middle-income countries, median coverage of demand for family planning satisfied with modern and traditional contraceptives is 1.5 times higher in women aged 20–49 years (66%) than in adolescents aged 15–19 years (42%). Given the high prevalence of teenage pregnancy and sexually transmitted infections in some countries, this is obviously a matter for concern. Data should also be disaggregated by sex, whenever relevant, as for example with ART, tobacco, or major depression treatment, where there are major coverage differences between the sexes. Data are usually, but not always, available (for example, on TB treatment coverage, the treatment outcome data are usually not sex-disaggregated), but owing to the brevity of this report we limit the discussion of sex inequities to tobacco use and depression treatment (see below).

Double disaggregation (the filtering of data using two criteria such as wealth and location) can also be helpful to identify key populations with very low coverage of essential services. As an example, this kind of disaggregation reveals that the rural poor living in low- and middle-income countries have extremely low access to improved sanitation, with median coverage of just 15%. The median access for the urban poor (33%) is more than double that for the rural poor. Yet, both are far below the median access to improved sanitation among the rural rich (60%).

**Figure 2.5.** Median coverage of selected health interventions, by place of residence, in low- and middle-income countries



While coverage inequities continue to be a major concern, and should be a central focus of developing UHC programmes, it is encouraging to note that, overall, disadvantaged subpopulations, such as the rural residents, the poor and the less educated, have seen greater increases in all six of the coverage indicators over the past decade or so (between 1995–2004 and 2005–2013 for reproductive, maternal, newborn and child health indicators, and 2000 and 2012 for water and sanitation) than their urban, wealthier, and better-educated counterparts. For instance, the annual increase in DTP3 immunization, ANC4 and SAB coverage in the poorest quintile exceeded that in the richest quintile by at least 0.9, 0.3 and 0.2 percentage points per year, respectively, in half of the 41 and 42, respectively, low- and middle-income countries over a 10-year period between 1995–2004 and 2005–2013 (10). The median coverage of improved water and improved sanitation increased 0.6 and 0.3 percentage points per year faster in rural areas than in urban areas of 73 low- and middle-income countries between 2000 and 2012.

## Towards a list of comprehensive UHC tracer indicators

As the previous section has demonstrated, it is already possible to monitor a number of services and areas that are likely to figure in UHC programmes, regardless of the demographic, epidemiological or economic profile of the countries supporting them. However, the eight tracer indicators summarized above (and more fully discussed in Annex 1) are not enough to capture the full range of UHC activity. Because UHC covers such a wide range of health services channelled in a range of functions from health promotion to palliative care, to track UHC performance and progress, it is necessary to monitor a range of indicators. As already stated, one of the most important gaps in the MDG-related indicators is anything offering insights into progress on NCDs. By 2012, NCDs caused the majority of global disease burden, accounting for 55% of the total disease burden, up from 46% in 2000 (11). NCDs are estimated to kill around 38 million people per year, almost three quarters of those deaths – 28 million – occurring in low- and middle-income countries. It is thus impossible to talk meaningfully about population health without talking about NCDs, and impossible to discuss UHC without addressing NCD-related interventions. The same is true of the promotion, prevention, treatment and rehabilitation interventions related to injuries, which account for roughly 11% of the global disease burden.

In this section, we review a range of health issues (diseases and risk factors) for which several UHC tracer indicators are close to meeting the criteria for core indicator status. For some, the combination of data availability and the scope for monitoring underlying services make them very strong candidates. For others, the scope for monitoring (the insight provided) is promising, but the data gaps are large and will need to be addressed before routine monitoring for UHC is feasible. Comparable estimates for several of the diseases and risk factors are being produced as more countries conduct health examination surveys to assess unmet/met need for treatment. The main goal here is to identify a small list of tracer indicators that are applicable to all countries and populations. However, as already stated, countries will want to consider monitoring additional indicators that are of particular relevance to their own health policy goals.

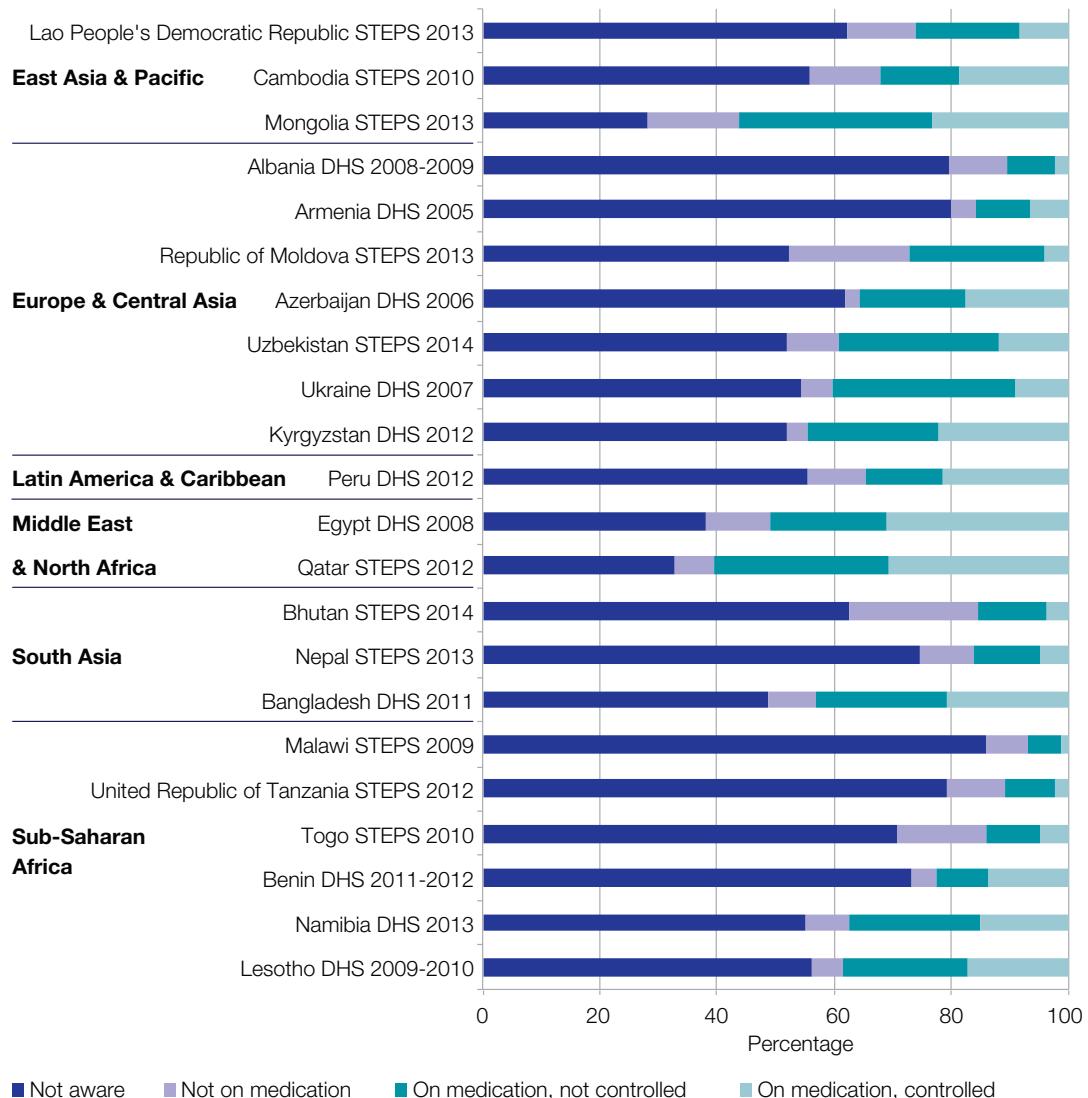
### **Hypertension treatment coverage**

High blood pressure is the leading risk factor for cardiovascular diseases (12) which account for the vast majority of NCD deaths, killing an estimated 17.5 million people annually, more than twice the number killed by cancers, for example, which are the second biggest cause of NCD deaths (11). Common in all countries across the income range, and affecting both men and women, hypertension is nevertheless susceptible to amelioration with well-established health interventions, from health promotion such as campaigns to encourage exercise and healthy eating, to treatment with antihypertensive medicines. Population-level improvements in mean systolic blood pressure are thought to be a leading cause of declining cardiovascular mortality rates in many countries, together with declines in tobacco smoking and improvements in medical care (13).

Hypertension is defined as usual systolic blood pressure over 140 mm Hg and/or diastolic blood pressure over 90 mm Hg, or “currently taking medication for hypertension” (14). Hypertension treatment coverage is defined as the proportion of people with hypertension who are currently taking medication. Raised blood pressure, defined as systolic blood pressure over 140 mm Hg and/or diastolic blood pressure over 90 mm Hg on one occasion, is monitored in population-based surveys. Using these measurements it is possible to quantify the percentage of people with raised blood pressure who are taking medication, whose systolic blood pressure is below 140 mm Hg, and whose diastolic blood pressure is below 90 mm Hg – in other words it is possible to monitor effective coverage.

In the past decade, more than 150 national population-based surveys in 97 countries have measured adult blood pressure, including 57 STEPS surveys (15) and 11 DHS (16). The NCD-RisC collaboration has estimated that 22% of adults aged 18 years and over have raised blood pressure (systolic and/or diastolic blood pressure at least 140/90 mm Hg) (17). Despite these various efforts, to date, no global or regional estimates of hypertension treatment coverage exist. Figure 2.6 shows the distribution of diagnosis and control of raised blood pressure in recent national surveys in selected non-OECD countries. In most, at least half of the adults with raised blood pressure have not been diagnosed with hypertension. Hypertension treatment coverage is therefore low, ranging from 7% to 61% among people who have presented with raised blood pressure in the household surveys. Effective coverage is considerably lower than coverage, ranging from 1% to 31%.

**Figure 2.6.** Adults with raised blood pressure<sup>a</sup> or on medication for hypertension, disaggregated by diagnosis and treatment status<sup>b</sup>

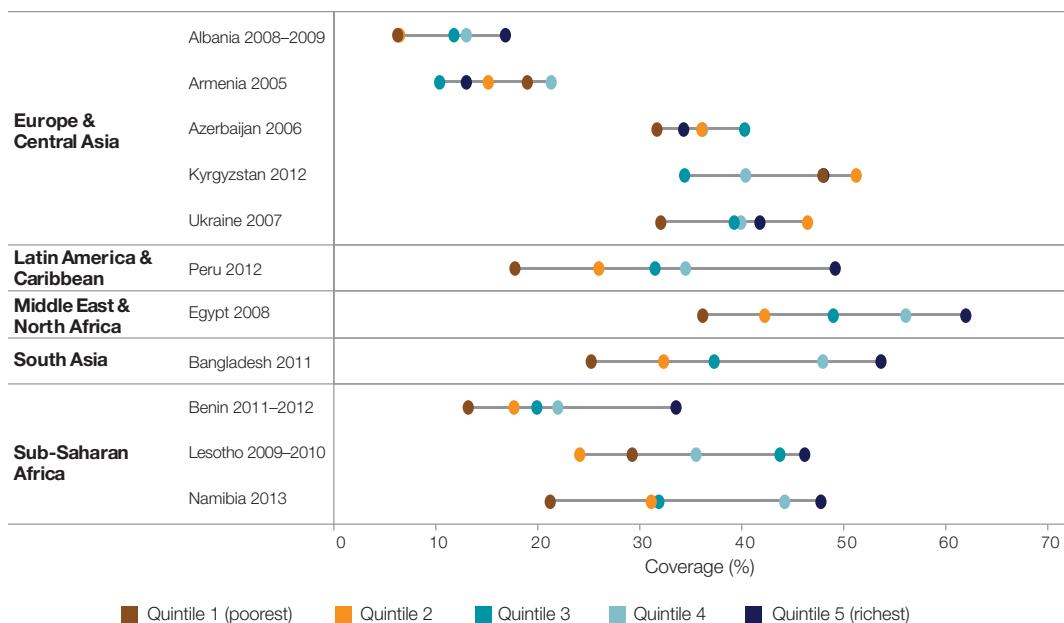


a. Systolic blood pressure greater than 140 mm Hg or diastolic blood pressure greater than 90 mm Hg;

b. Adults aged 35–59 years are shown, except for: Albania, Armenia, Kyrgyzstan, and Ukraine: adults aged 35–49 years; Peru: adults aged 40–59 years.

Using data from 11 national DHS, disaggregation by wealth quintile shows that coverage of hypertension treatment differs substantially across wealth quintiles in some, but not all countries (Figure 2.7). A consistent association between wealth and coverage is observed in Bangladesh, Benin, Egypt, Namibia and Peru. In nine of the 11 countries, however, the poorest have lower treatment coverage than adults in the richest quintile.

**Figure 2.7.** Percentage of adults with raised blood pressure<sup>a</sup> or on medication for hypertension, who are currently taking medication for hypertension, by wealth quintile<sup>b</sup>



a Systolic blood pressure greater than 140 mm Hg or diastolic blood pressure greater than 90 mm Hg;

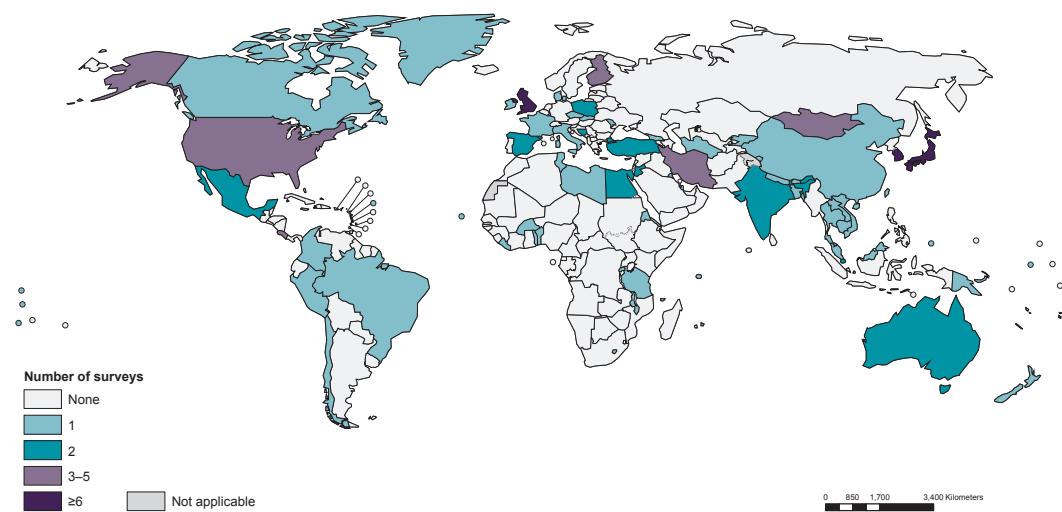
b Adults aged 35–59 years are shown, except for: Albania, Armenia, Kyrgyzstan, and Ukraine: adults aged 35–49 years; Peru: adults aged 40–59 years.

### Diabetes treatment coverage

Type 2 diabetes results from the body's ineffective use of insulin, and affects an estimated 90% of people with diabetes. Type 2 diabetes is largely the result of excess body weight and physical inactivity, and treatment involves lowering blood glucose and the levels of other known risk factors that damage blood vessels. Effective treatment coverage can be measured through population-based surveys that include a test for diabetes, either through measurement of fasting blood glucose for diabetes (fasting plasma glucose  $\geq 7.0$  mmol/l is the threshold) or HbA1c (a form of haemoglobin), or by an oral glucose tolerance test. These surveys also include questions on whether the respondent is taking medication for diabetes.

In the past 10 years, at least 119 national population-based surveys in 75 countries have been conducted, including 38 STEPS surveys (Figure 2.8; NCD-RisC data). Data gaps exist in all regions, but are most prominent in sub-Saharan Africa. Most of these surveys (105) have measured fasting blood or plasma glucose, sometimes together with HbA1c (34), with the remainder (14) measuring only HbA1c.

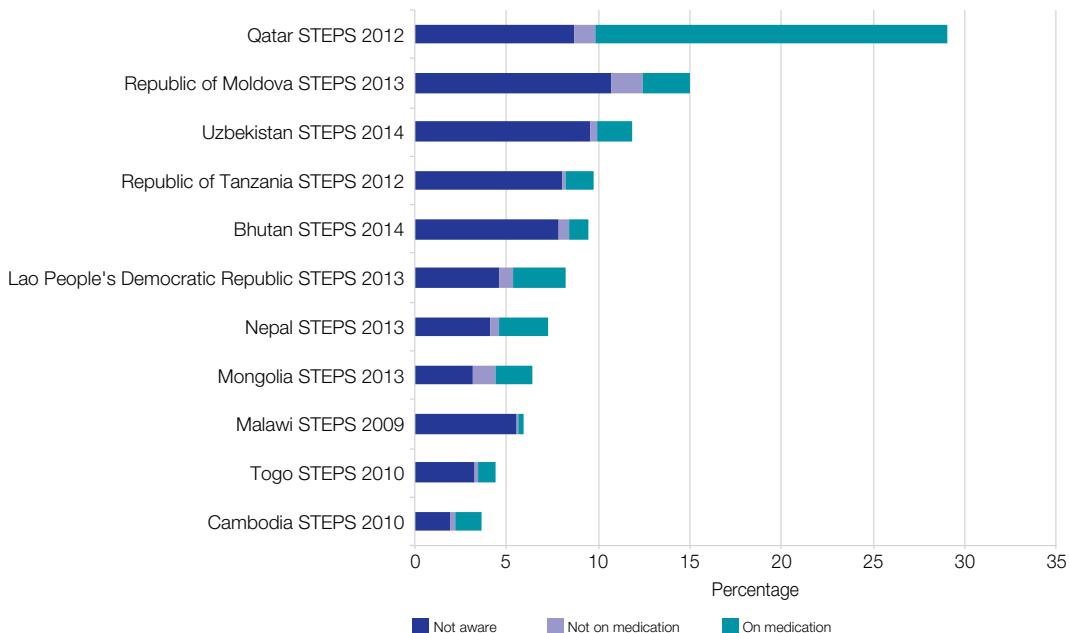
**Figure 2.8.** Number of national health examination surveys carried out during 2005–2014 that include measurement of fasting blood/plasma glucose or HbA1c<sup>a</sup>



a Data in the NCD-RisC database as of February 2015 are shown.

Using data from health examination surveys, it has been estimated that 9% of adults 18 years and over have diabetes (17), and that the prevalence of diabetes has increased in most regions of the world in recent years, with no decrease recorded in any region (18). However, to date, no global or regional estimates of diabetes treatment coverage exist. A study of diabetes diagnosis and treatment analysed survey data from seven developing and developed countries, and found that between 24% and 62% of people with diabetes were undiagnosed and untreated (19). Recent data from selected non-OECD countries are shown in Figure 2.9. In these countries, between 6% and 70% of those with raised glucose had been diagnosed with diabetes, and between 4% and 66% were taking medication.

**Figure 2.9.** Percentage of adults aged 35–59 years with raised blood glucose, disaggregated by diagnosis and treatment status (no diabetes diagnosis, diagnosed but not on medication, and taking medication)



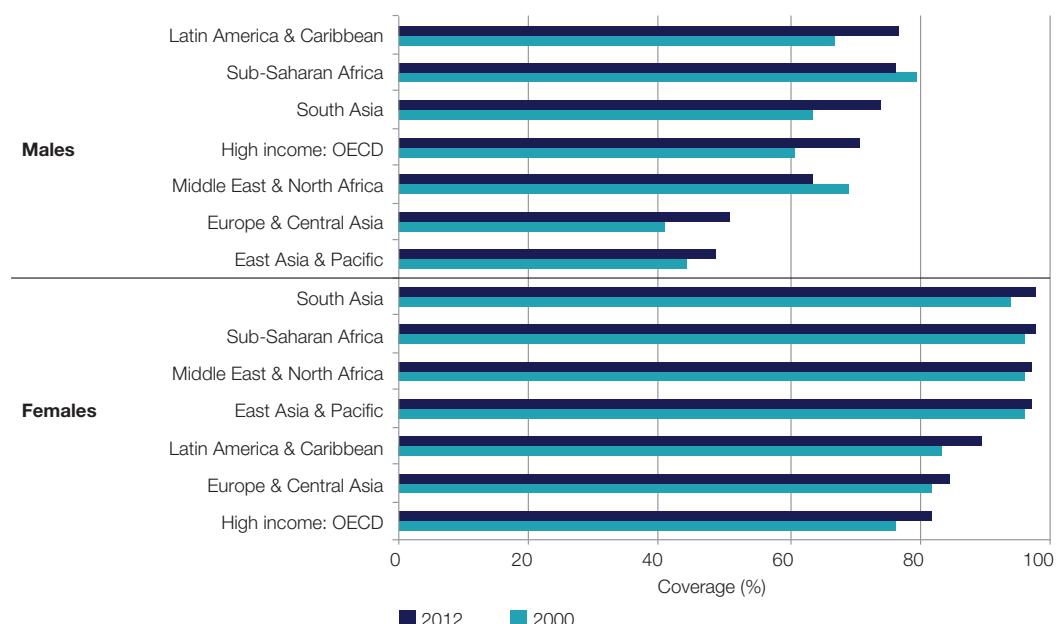
### Current tobacco smoking

Tobacco kills around six million people each year, driving the incidence of NCDs from heart disease to cancers. More than five million of those deaths are the result of direct tobacco use while more than 600 000 are the result of non-smokers being exposed to second-hand smoke. Over three quarters of the world's 1.1 billion smokers live in low- and middle-income countries. Only one in four countries, representing just over a third of the world's population, currently monitor tobacco use by repeating nationally representative surveys of youth and adults at least once every five years. Working to ensure that children do not start smoking is a critical focus of anti-tobacco interventions and data on adults (aged 15 years and over) who do not currently smoke tobacco could constitute a valuable effective coverage indicator.

Data on tobacco use are collected in a broad range of household surveys, including the DHS, the WHO STEPS surveys and many other national and international survey systems. Specific surveys vary in type of tobacco use measured, whether information on frequency of use is obtained (daily versus occasional) and what types of tobacco use are considered (cigarette smoking only, all types of tobacco smoking, and other types of tobacco use such as chewing tobacco). The indicator used in this report is the percentage of adults (aged 15 years and over) who have not smoked tobacco in the past 30 days. One of the problems we face in monitoring tobacco use is comparability of data between surveys. WHO's estimates of current tobacco non-smoking have been adjusted for these inconsistencies (Figure 2.10) (17).

It is also possible to disaggregate tobacco use data by wealth quintile as shown by one study which analysed the association between smoking prevalence and wealth, using survey data from 2002–2004 in 48 low- and middle-income countries. The survey found that current smoking was generally more prevalent in the poorer wealth quintiles, with the exception of women in some middle-income countries (20).

**Figure 2.10.** Percentage of adults aged 15 years and over who have not smoked tobacco products in the past 30 days



### Mental health: depression treatment coverage

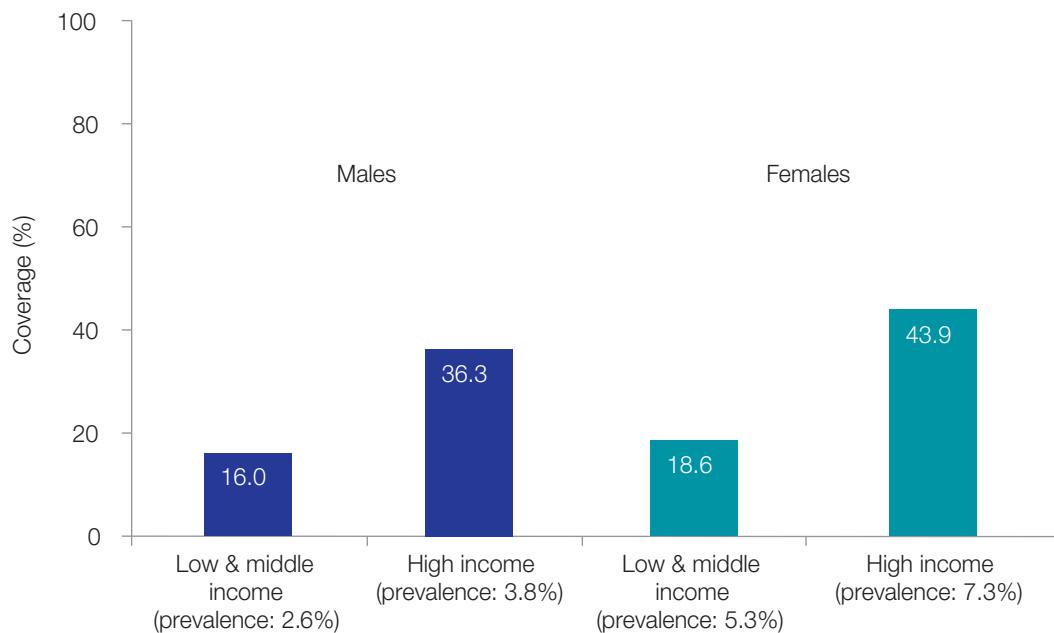
Progress towards UHC will necessitate a major scaling up of mental health services. Many people living with mental illness are undiagnosed, or have no access to treatment, while those who do often receive poor quality of treatment (21). Depression is a common mental disorder in all regions of the world and accounts for at least 2.8% of the global disease burden. Different to the usual mood fluctuations and short-lived emotional responses to challenges in everyday life, when long-lasting and with moderate or severe intensity, depression may become a serious health condition, and at its worst, can lead to suicide. Suicide results in an estimated 800 000 deaths every year. Depending on the number and severity of symptoms, a depressive episode can be categorized as mild, moderate or severe. The World Health Assembly has agreed on monitoring an indicator of severe mental illness treatment coverage.<sup>1</sup> One possible candidate is major depressive disorder (MDD) which is characterized by recurrent episodes of depression where people experience persistent depressed mood almost all day, every day for at least two weeks. The measurement of population prevalence of MDD is generally done through a standard set of questions in household surveys (22).

Data from the 23 national and subnational WHO World Mental Health Surveys conducted during 2001–2012 (median year 2004) show that MDD is common.<sup>2</sup> High-income countries had higher MDD prevalence than low- and middle-income countries (5.6% and 4.0% respectively) and prevalence in women was almost twice as high as in men (6.3% and 3.2% respectively) (Figure 2.11). Treatment levels for MDD are low in almost every survey including in high-income countries. Only about one third of all people with MDD received even minimally adequate treatment (defined as four or more visits to any service provider in the past 12 months, or, two or more visits to any service provider in the past 12 months for psychotropic medication, or, being on treatment at the time of the interview). Treatment coverage was 41% in the high-income country surveys, compared to only 18% in low- and middle-income countries.

1 World Health Assembly (WHA)66.8 (2013) and WHA66 Annex 3 (A66/10 Rev.1).

2 Average of available survey data, weighted by each country's population, is shown.

**Figure 2.11.** Treatment coverage for major depressive disorder from the 23 national and subnational WHO World Mental Health Surveys conducted during 2001–2012<sup>a</sup>



a The population-weighted average of survey estimates is shown.

### Cataract surgical coverage

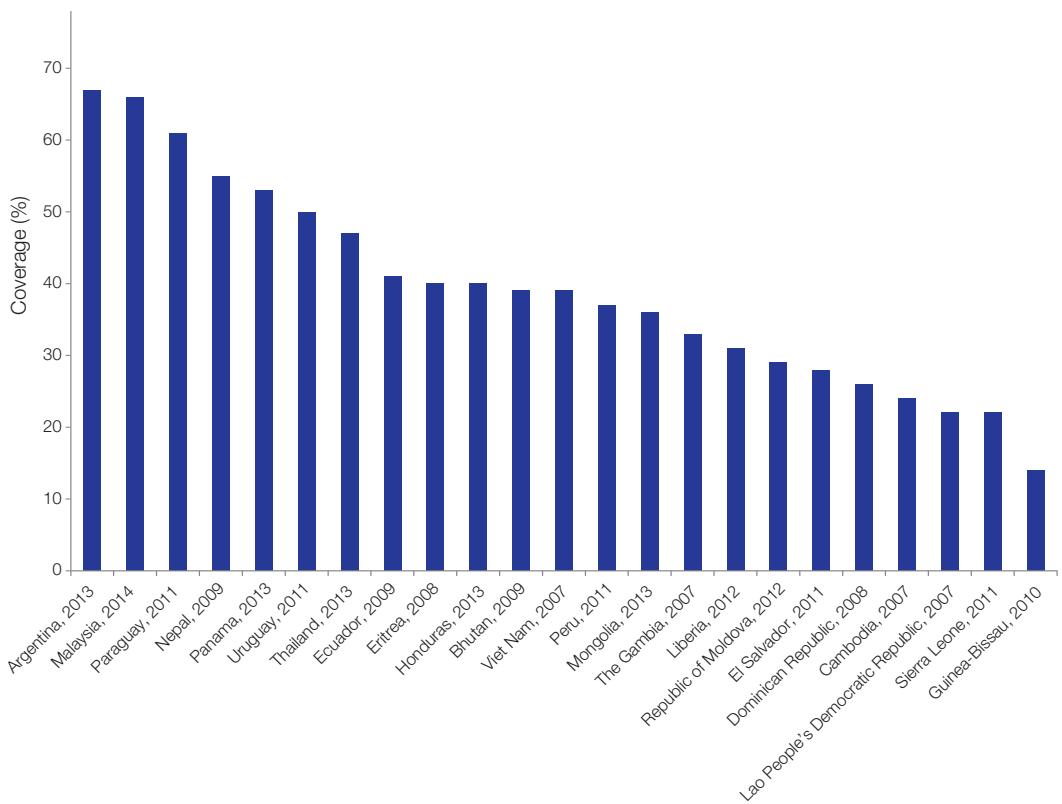
Universal eye health is a key objective for countries, as reflected in the 66th World Health Assembly resolution<sup>1</sup> which calls for a global action plan aimed at the goal of a world in which nobody is needlessly visually impaired, where those with unavoidable vision loss can achieve their full potential, and where there is universal access to comprehensive eye care services. Three key indicators are proposed to monitor progress, namely: the prevalence and causes of visual impairment; the number of eye-care personnel; and the number of cataract surgeries performed as a proxy indicator for the provision of eye-care services (23). Cataract surgical coverage, the proportion of people with bilateral cataract who have received cataract surgery in one or both eyes, is an indicator not only of ophthalmological surgical care coverage, but of disability among older adults (24), and access to care by the elderly, a quickly growing segment of the global population in all countries (25). It is thus another useful NCD indicator. It is however generally not an indicator of access and coverage of emergency surgical care which requires different services.

Cataract surgical coverage can be calculated from a population-based survey that measures visual acuity, causes of visual impairment, and whether respondents have previously undergone surgery for cataract (23, 26). Today, most surveys of vision impairment follow the Rapid Assessment of Avoidable Blindness (RAAB) methodology (27, 28). Data from 23 recent nationally representative vision surveys conducted since 2007 using this methodology in low- and middle-income countries indicate that cataract surgical coverage ranged from 14% in Guinea-Bissau (2010) to 67% in Argentina (2013) among people aged 50 years and older (Figure 2.12). In most countries, cataract surgical coverage is similar for men and women, the largest sex differences being observed in Lao People's Democratic Republic and Sierra Leone, where coverage of men was twice as high as coverage of women (34% and 14% in Lao People's Democratic Republic and 30% and 16% in Sierra Leone, respectively). Paraguay is a notable example of progress with regard to cataract surgery coverage, despite an increase in demand for cataract treatment due to an ageing population

1 World Health Assembly (WHA)66.4.

(29). National population-based surveys of vision impairment undertaken in 1999 and in 2011 showed that cataract surgical coverage increased from 32% to 63% and the estimated prevalence of moderate or worse vision impairment as a result of cataract declined from 9.6% to 2.8%. In addition to the increased coverage, the quality of the surgery increased, with the percentage of surgeries that had a poor outcome decreasing from 31% to 14% between the two surveys.

**Figure 2.12.** Cataract surgical coverage (%) at visual acuity <6/18, adults aged 50 years and older, RAAB surveys 2007–present in 23 low- and middle-income countries



### Palliative care

Palliative care is one of the five health service coverage components of UHC. More than just pain relief, palliative care includes addressing the physical, psychosocial and emotional suffering of patients of all ages living with serious advanced illnesses, as well as supporting the family members who are providing care to a loved one. It is estimated that about one third of those needing palliative care suffer from cancer, while others have progressive illnesses affecting their heart, lung, liver, kidney, brain, or have chronic, life-threatening diseases including HIV and drug-resistant TB (30). It is possible that each year around 20 million patients need palliative care at the end of life, some 6% of them being children. The coverage of palliative care is difficult to measure, partly because the need for such care is difficult to measure.

One possible approach to the problem is to try to measure access to palliative care as suggested in the Global Monitoring Framework on NCDs (31), which includes the indicator: access to palliative care assessed by morphine-equivalent consumption of strong opioid analgesics (excluding methadone) per death from cancer. The number is hard to get at, but most countries are required by treaty to report data on imports, exports and manufacture of strong opioid analgesics to the International Narcotics Control Board (INCB) (32). Using these data, the INCB calculates the consumption of morphine, hydromorphone, oxycodone, fentanyl and pethidine, which can be combined to calculate the non-methadone morphine-equivalent consumption (33). However, not all countries adhere to their reporting requirements (33). For example, complete information was available for only 32 mainly high-income countries for 2010–2013 and for all five drugs mentioned

above (17). Most countries – mainly low- and middle-income countries – also lack high-quality vital registration systems to determine the number of deaths from cancer. Thus, future use of this indicator will require that countries strengthen their monitoring and reporting procedures. It is also important to note that while measurable to a certain degree, the level of supply says little about use. For example, recent studies in the United States of America show that prescription and use of opioid painkillers has increased considerably during the past decade (34, 35). However, this was mostly related to relief of long-term chronic pain, in spite of limited evidence of their effectiveness (36), and is thus not indicative of improved coverage of palliative care. In this case, although the supply of opioid analgesics may be adequate for palliative care, it might be directed towards other uses.

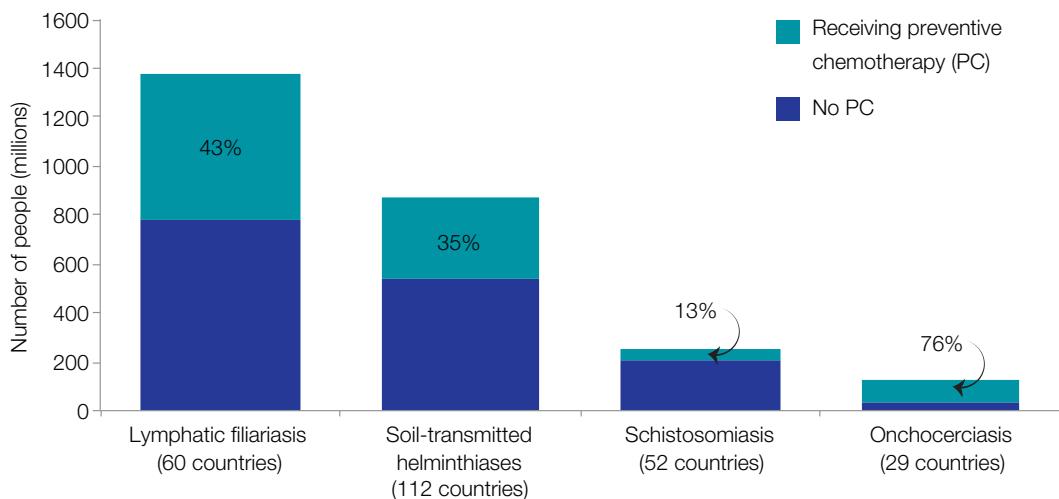
### **Neglected tropical diseases**

Resulting from four different causative pathogens – protozoa, helminths, bacteria and viruses – neglected tropical diseases (NTDs) thrive mainly among the poorest populations in tropical and subtropical regions. Lacking a strong political voice, people affected by NTDs are generally overlooked, while the lack of financial incentives for pharmaceutical companies has tended to discourage research and development in this area. In the context of the MDGs, NTDs have also been neglected relative to the “big three” diseases (HIV/AIDS, malaria and TB) in large part because the burden of NTDs tends to be focalized within poor, rural and otherwise marginalized populations (37). The 17 NTDs prioritized by WHO include blinding trachoma, Buruli ulcer, Chagas disease, cysticercosis, dengue, dracunculiasis (guinea-worm disease), echinococcosis, endemic treponematoses (yaws), foodborne trematode infections, human African trypanosomiasis (sleeping sickness), leishmaniasis, leprosy (Hansen disease), lymphatic filariasis, onchocerciasis (river blindness), rabies, schistosomiasis (bilharziasis), and soil-transmitted helminthiases (intestinal worms). More than 128 countries are burdened by at least one NTD, and at least 2 billion people are at risk of infection. The poorest people within those countries shoulder a disproportional share of the health burden (38). The economic burden of NTDs on households and societies is also considerable, given the costs associated with medical care and loss of income (37).

Universal coverage of interventions against NTDs is thus a priority UHC objective. Because of the diversity of NTDs, addressing NTD epidemics requires a range of interventions: preventive chemotherapy, case management, vector control, improved water supply and sanitation, and veterinary public health. Preventive chemotherapy, for example, involves regular administration of anthelmintics to all people at risk. There are clear coverage targets and progress against these targets is routinely monitored. It is recommended that country programmes achieve full geographical coverage of all endemic districts, and 65–85% preventive chemotherapy coverage in each district, depending on which diseases are endemic. Globally, the coverage target is 80% (37).

While preventive chemotherapy coverage is increasing, it is still low in many countries. For instance, globally, coverage stands at 43% for lymphatic filariasis, for an estimated 1.4 billion people requiring treatment (Figure 2.13). For schistosomiasis, only 14% of the 250 million people in need of preventive chemotherapy receive it. Almost all of the medicines required to achieve universal coverage have already been pledged. It is now a question of getting those medicines to at-risk populations, including those still outside the reach of facility-based health systems. The monitoring of NTD coverage is based on data reported to WHO as part of the process by which countries are supplied with medicines donated by the pharmaceutical industry (39). Because these are almost entirely poor and rural, coverage data are not typically disaggregated along those lines. However, current request and reporting forms (for donated medicines) disaggregate treatment numbers by sex and age group as well as by district. So it is possible to disaggregate by rural/urban and by district-level socioeconomic indicators. Monitoring preventive chemotherapy coverage remains key to ensuring that the diseases of the least well-off are being prioritized from the very beginning of the path towards UHC.

**Figure 2.13.** Number of people (millions) requiring preventive chemotherapy for selected neglected tropical diseases with intervention coverage and number of countries requiring preventive chemotherapy



## Conclusion

The indicators presented in this chapter offer the potential to monitor UHC progress. Some we are already monitoring quite successfully, largely as a result of the push to monitor progress on the MDGs. Others, notably tobacco non-smoking, hypertension coverage, diabetes coverage and cataract surgery coverage, offer a way to monitor NCDs and are already being measured. These are therefore suitable as tracer indicators for UHC in the future. However, a number of important challenges remain. First, we still lack measurable coverage indicators for several health priorities, including mental health and palliative care – even though the indicators presented here do offer scope for development. The same is true of indicators related to injury and disability. Second, we still struggle to measure service coverage need. This is especially true in settings where a large proportion of the population may not even seek health services and whose health issues therefore remain invisible. This challenge applies to both acute and chronic conditions and similarly to conditions that require ambulatory or inpatient care. For most of these indicators population-based surveys are required. Third, only a few indicators have a dimension that captures the quality of services. Most indicators need supplementary indicators on quality of service delivery or health impact. Further research and investment are needed to address these gaps, which should be a priority for research in the coming years (40).

Finally, we have to recognize that monitoring a concept as complex and multifaceted as UHC inevitably involves making decisions about what elements should be included and what should be left out. The upside of making a judicious selection is that we improve our ability to quantify; the downside is that by shining a light in one direction, we throw a shadow in another. Focusing on a few tracer indicators may also have unintended consequences that arise with all indicator constructs, including countries making greater investments in the interventions selected for monitoring at the cost of non-selected interventions (41). Both of these issues would be overcome if we were able to monitor everything, but that is clearly an impossibility.

As we come to the end of the MDG era, which was marked by significant advances on many fronts, we are faced with the challenge of establishing a new set of goals, and measuring progress towards them. Whether UHC is a part of those goals remains to be seen, but even if it is not, the tracking of UHC will obviously be a core concern. If we are to succeed in that endeavour, we will have to expand our monitoring activities, and focus on new domains of health action, incorporating innovative metrics and measurement techniques. Given the state of even basic health data collection in many countries, the task is daunting, and cannot possibly be attempted without sustained support from the global research, statistical, and development community.

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3

# Monitoring financial protection

UHC is defined as people receiving needed quality health services without financial hardship. The key to protecting people from financial hardship is to ensure prepayment and pooling of resources for health, rather than relying on people paying for health services out-of-pocket (OOP) at the time of use (1). Using OOP payment (Box 3) to fund health systems presents a number of disadvantages, but among the most important is that it discourages people from seeking care. This is especially true for poorer people, who must often choose between paying for health and paying for other necessities such as food or rent. For people who feel they simply must seek treatment – for the growing lump in the breast or the fever that will not go down – there is the risk of impoverishment or even destitution (2–4). By focusing on the level of OOP payment it is possible to monitor the extent to which health expenditures strain households' finances and, thus the degree to which people lack financial protection.

This chapter presents an overview of OOP payment trends and discusses ways in which our monitoring of financial protection might be improved. Drawing on data captured through household surveys undertaken in 37 countries during the 2002–2012 period, the chapter offers a snapshot of the health-services related financial exposure faced by about one sixth of the world's population, including populations in 12 low-income, 17 lower-middle, five upper-middle and three high-income countries.

## **Box 3. OOP payment**

OOP payment is defined as direct payment made to health-care providers by individuals at the time of service use, i.e. excluding prepayment for health services – for example in the form of taxes or specific insurance premiums or contributions – and, where possible, net of any reimbursements to the individual who made the payments.<sup>1</sup> OOP payment (including gratuities and payments in-kind) includes payment to formal medical professionals, informal traditional or alternative healers, clinics, health centres, pharmacies and hospitals for medical services and products such as consultations, diagnosis, treatment and medicine. The focus here, then, is on the direct outlay of cash made by households to improve or restore health, although admittedly, it is not generally possible to distinguish expenditures for necessary versus elective procedures. Payments related to the use of health services, such as payments for transportation, accommodation or food can also represent a major financial burden. However, because reliable data on such payments are not available across countries, we do not include indirect costs in our current definition of health expenditures.

## **OOP in the broader funding context**

Because OOP payment is just one component of total health expenditure (THE), it is worth taking a moment to look at the overall funding landscape across a range of different countries to provide some context. Broadly speaking, OOP payment declines where government expenditure

1 Information on the cost of purchasing medical care is available from household surveys where expenditures are classified according to purpose. Hence, information on (health) insurance premiums is always collected independently from information related to utilization of health services. Whether or not it is possible to exclude from the latter reimbursement received from insurances depends on the type of micro survey. In a typical household budget survey it is not feasible, but in most recent multipurpose surveys it is, as the information is gathered explicitly referring to direct payments excluding reimbursements received from any form of formal safety net.

on health increases, as is borne out by Table 2, which highlights the range of country spending on health, broken down by economic status, and is based on estimates from the WHO Global Health Expenditure database. The proportion of health expenditure in overall government spending increased only slightly in 2013 to 12.0% globally, up from 10.9% in 2002, while the share of THE accounted for by OOP declined from 35.6% to 32.1% (5).

The share of government health expenditure is highest in OECD high-income countries (15.6%) and lowest in the Middle East and South Asia (8.7% and 8.3% respectively). Overall, the 47 countries in Sub-Saharan Africa spent 11.1% of their government budget on health, an improvement on the 9.0% reported in 2002, but still short of the Abuja Declaration target, of at least 15% of total government expenditure (6). Figure 3.1 supports the evidence of an overall government funding shortfall, showing that more than half of countries directed less than 12% of their total government expenditure into health, and that 47 countries spent less than 8%. It appears, then, that many countries have scope to increase government health expenditure, which is vital to supporting progress towards UHC, and in particular to subsidizing the cost of services for poorer populations.

**Table 2.** Selected indicators of national health financing: Total health expenditure (THE) per capita,<sup>a</sup> general government expenditure on health (GGHE) as a percentage of total government expenditure (GGE), and out-of-pocket expenditure (OOP) as a percentage of total health expenditure, 2002 and 2013, WHO<sup>b</sup>

	Number of countries	THE per capita (US\$ PPP) <sup>c</sup>		GGHE/GGE <sup>d</sup> (%)		OOP/THE <sup>e</sup>	
		2002	2013	2002	2013	2002	2013
World	189	752	1251	10.9	12.0	35.6	32.1
East Asia & Pacific	24	313	589	10.4	11.5	31.4	27.5
Europe & Central Asia	28	725	1309	11.0	11.4	39.2	37.1
Latin America & Caribbean	32	477	848	12.3	13.3	35.3	33.3
Middle East & North Africa	19	891	1179	8.5	8.7	38.9	33.8
South Asia	8	136	321	8.3	8.3	52.4	50.3
Sub-Saharan Africa	47	140	263	9.0	11.1	42.7	36.1
High income: OECD	31	2362	3832	14.3	15.6	18.8	17.9
Low income	32	49	102	9.3	10.8	52.7	42.3
Lower middle income	48	164	310	10.0	10.2	42.2	40.4
Upper middle income	54	448	861	10.7	12.5	33.4	29.7
High income	55	1949	3112	12.6	13.5	22.4	21.5

a International US\$, PPP adjusted.

b Unweighted means.

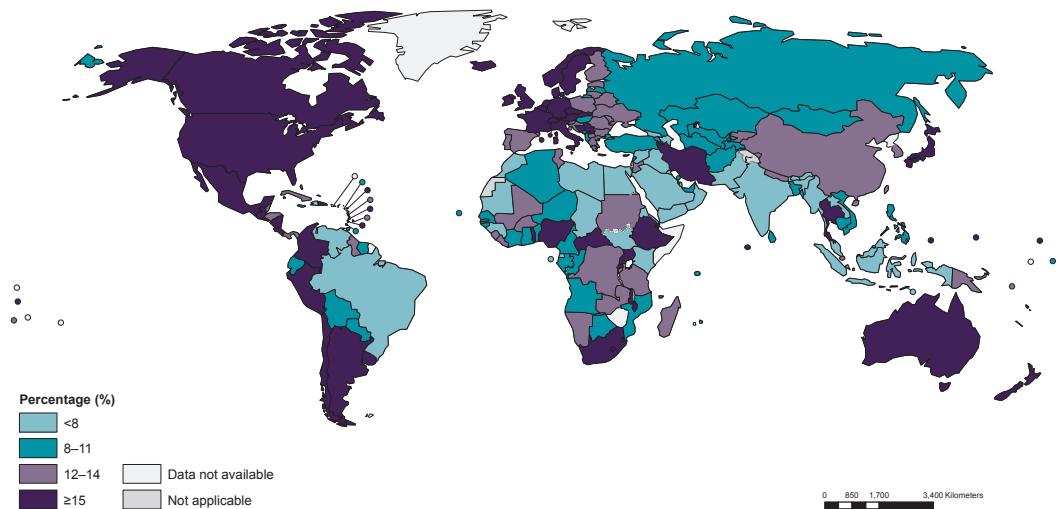
c THE per capita: total health expenditures per capita in purchasing power parity (PPP) (NCU per US\$).

d GGHE/GGE: general government expenditure on health as a share of general government expenditure.

e OOP/THE: out-of-pocket payments as a share of total health expenditures

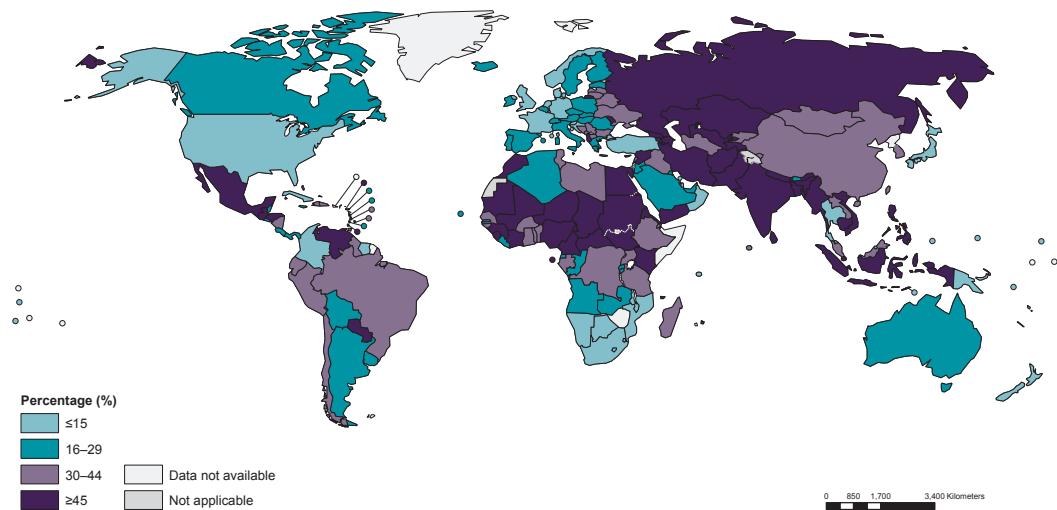
Globally, total health expenditure per capita (at purchasing power parity US\$) during the period 2002–2013 increased 1.7 times, from US\$ 752 to US\$ 1251 per capita. However, this number masks dramatic differences between rich and poor countries, with low-income countries spending just US\$ 102 per capita, as opposed to US\$ 3112 per capita in their high-income counterparts – a thirtyfold difference.

**Figure 3.1.** General government expenditure on health as a percentage of total government expenditure, 2013



As with general government expenditure on health, there is a considerable OOP payment gap between rich and poor countries, people in low- and lower-middle-income countries paying relatively more OOP than people in high-income countries. The countries of South Asia are a prime example, average OOP payment for the region reportedly accounting for 50% of THE. Figure 3.2 shows that while in 40 countries OOP as a percentage of total health expenditure is running at less than 15%, there are 48 countries where it is at least 45%.

**Figure 3.2.** Out-of-pocket expenditure on health as a percentage of total expenditure on health, 2013



While the level of OOP payment is in itself broadly indicative of financial protection, the monitoring of financial protection is typically based on two indicators of financial hardship (7, 8): catastrophic health expenditure, and impoverishing health expenditure. Both indicators draw on household expenditure data typically obtained through household surveys. Catastrophic health expenditure

is judged to occur when a household's OOP payments reach a point where the occupants have to forgo the consumption of other necessary goods and services (9). While on the face of it the concept seems fairly clear, different measures have been proposed (see Box 4).

**Box 4.** Catastrophic health expenditure

Out-of-pocket payments for health care are judged to be "catastrophic" when they exceed a given fraction of a household's expenditure. While the idea seems clear enough, the way it is calculated varies, depending on whether or not adjustments are made to take into account spending on necessities. When such spending is left out of the equation, catastrophic health expenditure can be defined as health expenditure exceeding a share of total expenditure. When accounting for a minimum level of subsistence spending, health expenditures are identified to be catastrophic when they exceed a given fraction of a household capacity to pay. Here again different approaches can be used to measure capacity to pay. The most popular are total expenses net of food expenditure (8), and expenditure net of a subsistence level of food, except in cases where actual food spending is below this amount (10). More recently a definition of capacity to pay based on total expenditure minus (a multiple of) the international poverty line has also been proposed (11).

The threshold at which health payments are judged to become catastrophic has also varied, depending on the definition of catastrophic payments used; for example, 25% for metrics based on total expenditure, and 40% for those using a capacity to pay approach (9, 12). However, since these choices are largely arbitrary, most studies report the incidence of catastrophic health expenditures for multiple benchmarks, such as 10%, 15%, 20% and 25% of total expenditure. Recently, some studies have also proposed assessing the incidence of catastrophic health payments using thresholds that are dependent on socioeconomic status – in other words changing the threshold for catastrophic expenditure in line with socioeconomic status (13, 14). Annex 2 discusses the implications of these different approaches in more detail and shows results for different thresholds.

In this report, one indicator is used to measure the concept of catastrophic expenditures: the incidence of catastrophic health expenditure – a headcount indicator calculated as the proportion of households in a population whose health expenditures are equal to or greater than the chosen threshold (8).<sup>1</sup>

While catastrophic health expenditure, as the name suggests, is generally not a good thing, it does not necessarily lead to financial ruin or even impoverishment in the sense of pushing a household below a poverty line (15). Rich households, or households with the capacity to finance income deficits through a bank loan, might pay large medical bills without experiencing long-term negative financial effects. That said, in many cases, catastrophic expenditure is exactly that (16), even in rich countries, as attested by the fact that around 60% of bankruptcies in the USA are due to health care expenditures (17). Conversely, smaller payments spread out over a year or several years – as in the case of expenditures related to some chronic illnesses – may push a household into poverty.

The second key concept relates to impoverishing health expenditure, or, more specifically, to households being pushed below or further below a poverty line, by OOP payments. One indicator is used here to measure this concept: the incidence of impoverishment – a headcount measure showing the proportion of households pushed below the poverty line because of OOP payments.<sup>2</sup> Importantly, the measurement of household expenditure includes not only spending in cash, but

1 Another frequently used measure is the catastrophic overshoot, which captures the extent to which health expenditures exceed that threshold (8).

2 Another frequently used is the increase in depth of poverty, which measures the extent to which a household is pushed further into poverty due to OOP payments (8).

also spending in kind, as well as consumption of self-produced goods, most notably food. As with the measurement of catastrophic health expenditure, different poverty lines can be used to identify impoverishing payment (see Box 5). As countries assess their own progress towards UHC, they can use locally defined poverty lines, but for the purposes of international comparisons, it is important to reach some form of universal measurement (10, 18). In this chapter international poverty lines are used to estimate impoverishing health spending, but the results of other methods of computation are presented in Annex 2. But again, it is worth noting that it is only because financial protection can be measured that different measurement approaches have emerged.

#### **Box 5. Impoverishing expenditure**

Key to measuring the extent to which OOP payment pushes people into poverty is choosing a poverty line. There are several options here, the most obvious being the international poverty line (IPL), the US\$ 1.25 or US\$ 2.00 per day per capita (at purchasing power parity) consumption indicator, as used by the World Bank. Another is to use a relative poverty line, such as one based on a subsistence level of food expenditure, as is used by WHO (19). The main advantage of using an absolute line is that the level of poverty can be relatively easily monitored between countries and over time. It also has the merit of being widely recognized and accepted. It is the line that many developing countries themselves use as their poverty line, and has for some time been accepted as the poverty line for tracking of progress in fighting poverty, including, for example, by the UN in the context of the MDGs. The choice of poverty line will obviously determine the number of people judged to be in poverty and will thus affect the calculation of the rate of impoverishment due to OOP payments. For example, the US\$ 1.25 and US\$ 2.00 poverty lines are accepted as measures of extreme or severe poverty which are not useful for measurement of impoverishing health spending in high-income countries.

Below we present an overview of levels and trends in OOP expenditure in a range of countries that have collected relevant data in household surveys during the past decade. The list of countries is provided in Annex 2. Work is ongoing to expand the country data set and improve estimates, which should lead to a comprehensive set of global and regional estimates of catastrophic expenses and impoverishment due to OOP health payments in the coming year.

### **National measures of financial protection**

In our sample of 37 nationally representative surveys<sup>1</sup> conducted between 2002 and 2012, the median percentage of people experiencing catastrophic health spending (defined as more than 25% of total household expenditure) was found to be 1.8%. However, here again there is a significant range across countries, six reporting less than 0.5% of people impacted by catastrophic health spending in the preceding year (Bosnia and Herzegovina, Malawi, Niger, Pakistan, Panama and Ukraine), and, at the higher end, four countries (Argentina, Georgia, Republic of Korea and Tajikistan), reporting a catastrophic spending incidence in excess of 4%.

Taking into account spending on necessities (Box 4 and Annex 2), slightly increases the median occurrence of catastrophic health payments. For example, a threshold of 40% of non-food expenditure generates a median of 2.5%, while a threshold of 40% of non-subsistence expenditure generates a median of 2.3%.

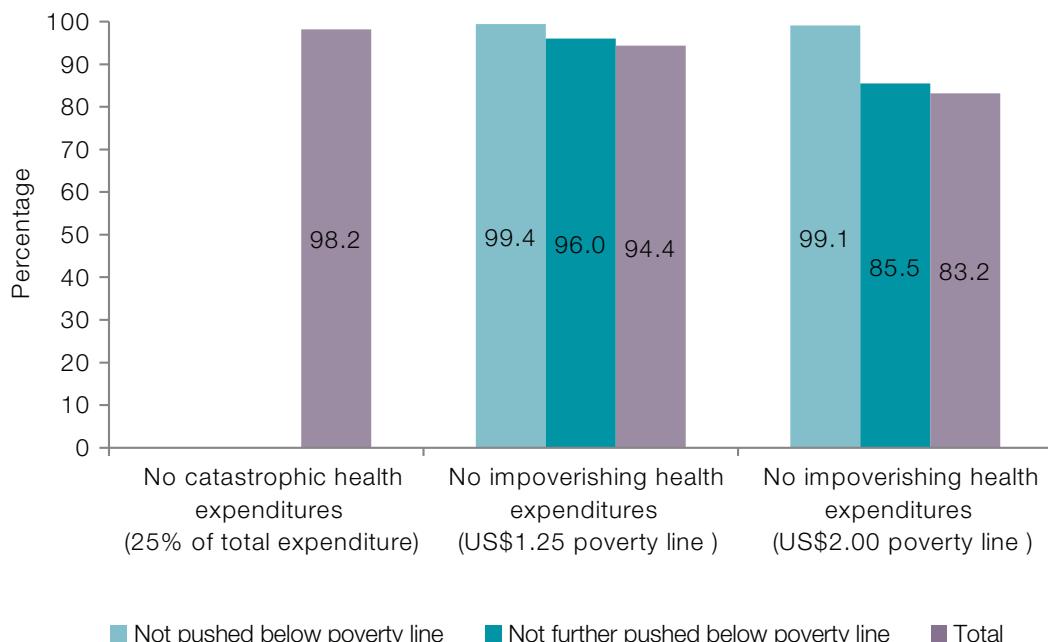
With regard to impoverishment, health spending pushed 0.6% of people below the US\$ 1.25 a day poverty line, and 0.9% below US\$ 2 per day (country median). Whether or not a household is pushed below the poverty line by health spending obviously depends partly on how onerous OOP payments

<sup>1</sup> Our sample is composed of countries for which we have nationally representative, publicly available and comparable survey data with information on total consumption and on health OOP. There is an ongoing effort to extend this sample to other countries for which we have survey data but which need to be validated to ensure consistent comparisons across countries and over time.

are and partly on how close to the poverty line the household was prior to making them. This is why the level of impoverishment is much higher in low- and lower-middle income countries relative to higher income countries, as exemplified by Cambodia, Kyrgyz Republic, Niger, Tajikistan, Uganda and the United Republic of Tanzania, all of which reported impoverishment rates of at least 2%.

The joint WHO/World Bank framework for monitoring progress towards UHC proposed to rescale indicators so that 100% coverage represents full financial protection (20). Figure 3.3 shows the median values for the 37 countries and reveals that 98.2% of the population do not have catastrophic health expenses as their OOP for health services does not exceed 25% of total household expenditure; 99.4% is not pushed below the US\$ 1.25/day poverty line, and 99.1% is not pushed below the US\$ 2/day poverty line. The framework also proposed including poor individuals who are further pushed into poverty by OOP payment. In other words, the number of poor people who had to spend any OOP on health services. Larger proportions of people who are already living below the poverty line are pushed further below the line because of OOP health spending, which results in 96% and 85.5% not pushed further under the poverty line at the US\$ 1.25 and US\$ 2.00 per day thresholds respectively. The total indicator adds the proportions of newly impoverished and more impoverished and shows the proportion of the population not affected by either adverse event. However, it should be noted that these medians hide the large proportion of people in low- and lower-middle-income countries (e.g. Ghana, Kenya, Malawi, Niger, Senegal, Uganda, United Republic of Tanzania and Zambia) where at least one quarter of the population was further pushed into poverty.

**Figure 3.3.** Percentage of population not having catastrophic health expenses (spending less than 25% of total expenditure), not pushed under the poverty line (US\$ 1.25/day and US\$ 2/day), not pushed further under the poverty line, and combined (not pushed under or further under the poverty line because of out-of-pocket health spending), 37 countries, median values

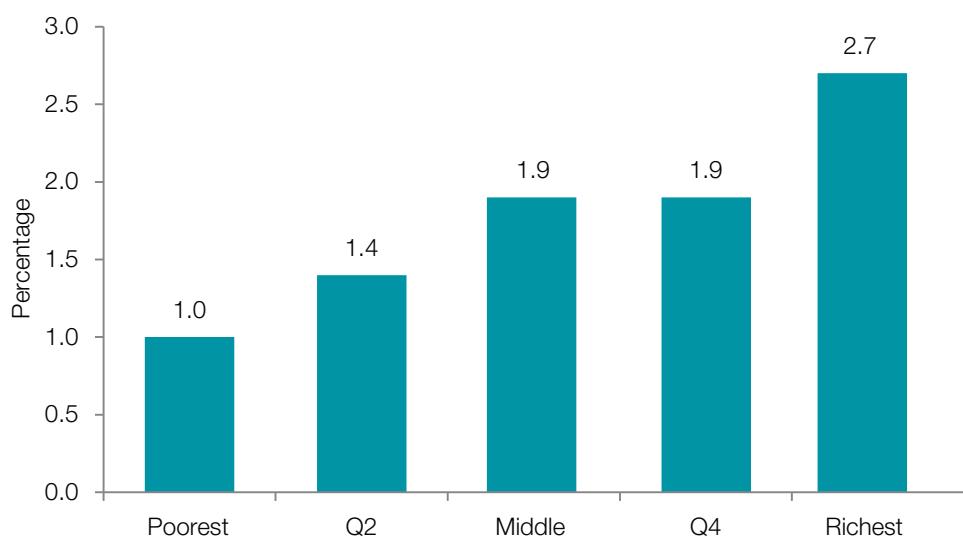


As stated above, it is important to bear in mind that measures of financial protection based on the incidence of impoverishment or catastrophic expenditure only cover the share of the population who actually incurred OOP payments for health. It does not account for those who do not spend anything, which may in certain settings represent a significant share of the population. In the 37 countries reporting data, 30% of people did not spend anything on health. This may be because they did not use any services due to unaffordable costs or other barriers to access. It is for this reason that some studies have focused on exposure to, for instance, catastrophic payments, rather than their actual incurrence (21, 22). No spending may also occur because health services were used but did not require any payment to be made because of health financing arrangements (prepayment and resource pooling) that obviated the need for OOP payment. Using information on utilization and related cost, some have attempted to disentangle both situations (11).

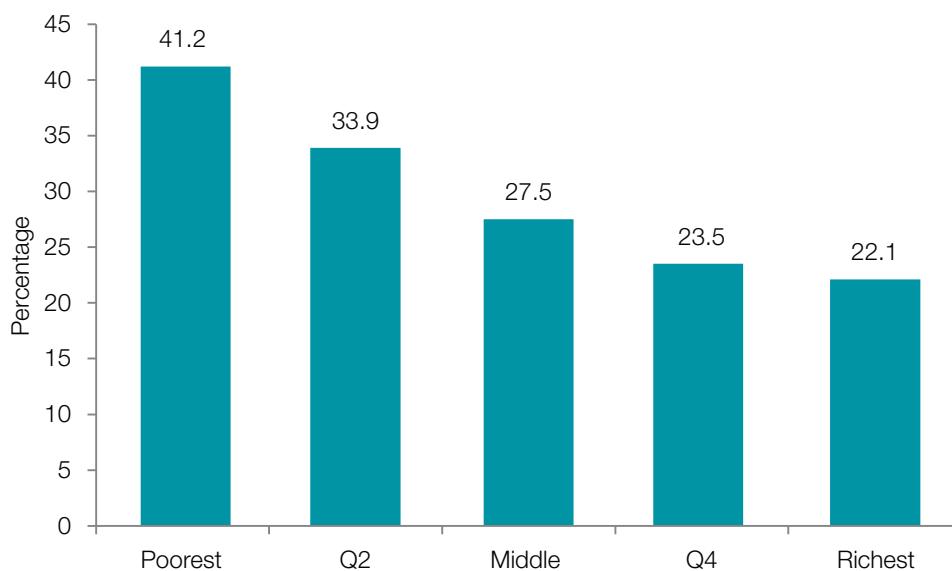
### **Ensuring the poor are not left behind**

The median incidence of catastrophic and impoverishing OOP health payments presented above are based on national averages which necessarily mask important equity disparities. In order to track inequalities in coverage within countries it is necessary to disaggregate data using socioeconomic and demographic characteristics. Because the indicators of financial protection are all derived from general household expenditure surveys, expenditure quintiles can be used to assess inequalities which tend to reflect differences in income and wealth. As shown in Figure 3.4, the incidence of catastrophic expenditure (defined as OOP health expenditure equal to or exceeding 25% of total expenditure) tends to be higher among the quintiles spending the most on health. The country median is 1.0% in the lowest spending quintile and gradually increases to 2.7% in the highest spending quintile. However, health spending leading to impoverishment is almost entirely concentrated in the lowest-spending quintile in the majority of countries. Self-reporting no expenditure on health whatsoever is also most common among the poorest, with a country median of 41.2%. This drops to 22.1% for the richest quintile (Figure 3.5).

**Figure 3.4.** Catastrophic health spending by expenditure quintile (Q), median values of 37 countries (headcount ratio, percentage)



**Figure 3.5.** No health spending by expenditure quintile (Q), median values of 37 countries (headcount ratio, percentage)



### Positive trends in financial protection

The most recent global estimates of the incidence of catastrophic and impoverishing health spending were published in 2007, based on an analysis of data from 89 countries over the 1990–2003 period and accounting for 89% of the world's population (23). This chapter has focused thus far on 37 countries representing one sixth of the world's population. Of these 37 countries, 26 were part of the 2007 study but only 23 of these have at least two datapoints over the 2000–2011 period.<sup>1</sup> While we are continuously working on increasing the number of countries for which information is available, the trend analysis further discussed is based on those 23 countries. During this period there was a growing interest in measuring health systems performance and many countries implemented significant reforms of their health financing systems. The 23 countries accounted for one eighth of the world's population.

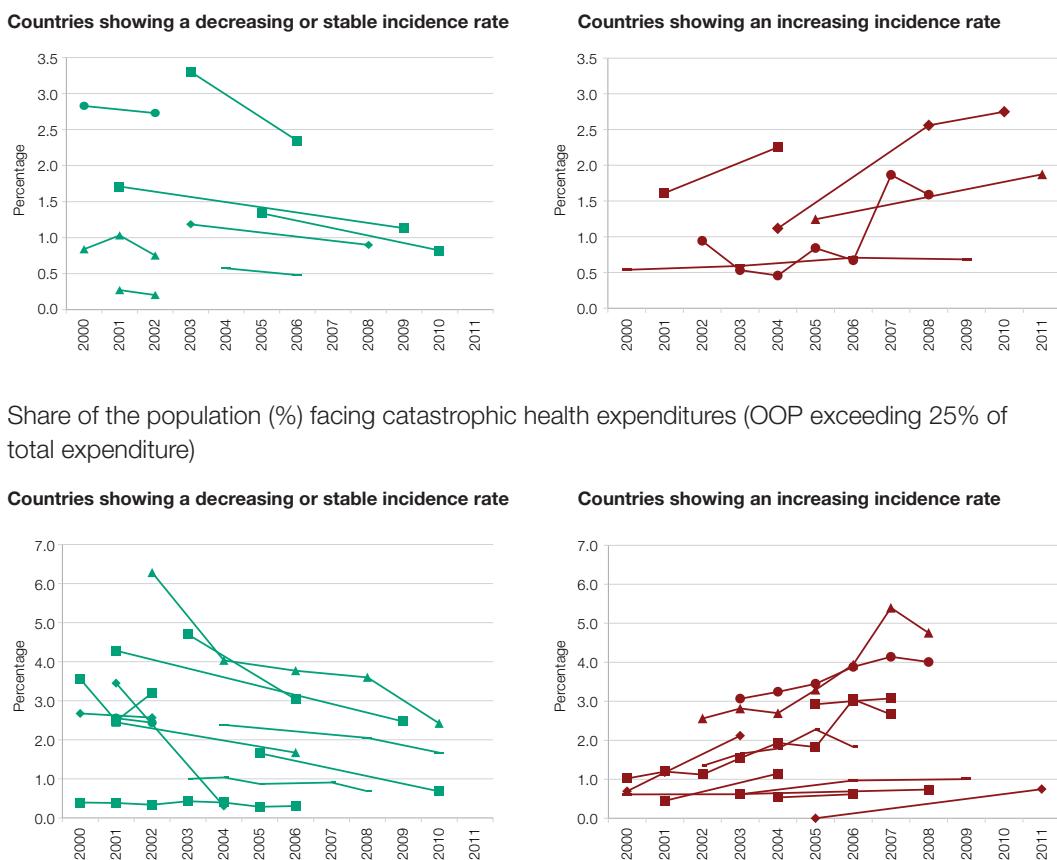
Trend estimates will clearly reflect the choice of the catastrophic or impoverishing expenditure benchmark. Thus any assessment of trends over time needs to take into account the choices made in the construction of the financial protection indicators, hence the concern for monitoring using several metrics. The 2007 estimates, on the other hand, focused exclusively on a single approach to evaluating catastrophic and impoverishing health spending.<sup>2</sup>

1 Bosnia and Herzegovina, Bolivia (Plurinational State of), Bulgaria, Cambodia, Estonia, France, Georgia, Iran (Islamic Republic of), Kyrgyzstan, Lao People's Democratic Republic, Latvia, Nicaragua, Philippines, Republic of Korea, Russian Federation, Rwanda, Senegal, Turkey, Uganda, United Republic of Tanzania , Ukraine, Viet Nam, Zambia.

2 Catastrophic spending was defined as OOP exceeding total expenditure net of a subsistence level of food expenditure, except when actual food expenses are below that level (thus following a capacity to pay approach) (2). Similarly, impoverishing expenditure was calculated using the subsistence level of food expenditure as a relative poverty line (see Annex 2 for details of the method).

**Figure 3.6.** Trends in financial protection indicators for 23 countries (2000–2011)

Share of the population (%) pushed below the poverty line of US\$ 1.25/day



Note: Not all 23 countries used in the trend analyses are shown, i.e. for illustrative purposes the figures showing the share of the population (%) pushed into poverty have been restricted to those countries with a share greater than or equal to 0.5%.

Figure 3.6 shows that there were significant changes over time in the incidence of catastrophic and impoverishing health expenditures (defined as OOP exceeding 25% of total expenditure and OOP pushing people below the US\$ 1.25/day poverty line).

Comparing the earliest and latest datapoints for all 23 countries the median proportion of people facing catastrophic health expenditure declined by 29%, with 12 of the 23 countries observing a decline. The rate of impoverishment at US\$ 1.25 per day decreased by 24%, with 10 of 15 countries observing a decline.

For the majority of countries, either modest gains or no change in levels of financial protection were observed. While this is encouraging, it is important to remember that one third of the population in these countries reports not spending any OOP on health. In some cases this is because health services costs are covered through prepayment and pooling of resources, but in others it may be because some people are simply forgoing health care altogether as something they cannot afford.

## Going forward

This chapter has demonstrated that financial protection is measurable. It has shown that in 37 countries accounting for one sixth of the world's population, the median rate of catastrophic payments ranged between 1.8% and 2.5% depending on whether or not adjustments were made to take into account spending on necessities. With regard to impoverishment, health spending pushed less than 1% of the population below standard international poverty lines of US\$ 1.25/day or US\$ 2/day. The chapter has also shown that progress over time can be assessed and that across the 23 countries for which there were at least two datapoints, no deterioration in financial protection over the 2000–2011 period was observed. However, it is also apparent that the monitoring of financial protection presents a number of challenges which will need to be addressed.

First, the indicators we are currently using fail to capture crucial aspects of the health-related poverty picture. For example, for both types of measures, the catastrophic and impoverishing headcount ratio focus on people exceeding a threshold because of OOP payments made for using health services. They do not capture poor people who become poorer as a result of OOP payments, and thus fail to track household economic well-being once the household slips below the poverty line. To avoid this shortcoming, the WHO/World Bank global monitoring framework proposes a simple solution: impoverishing health expenditure indicators should also include poor individuals who are further pushed into poverty by OOP payment. When applying this metric, rates of protection across the 37 countries fall to 83.2% at the US\$ 2/day poverty line.

Second, financial protection headcount indicators fail to take account of people who may be deterred from seeking health services because the cost of doing so is simply unaffordable. We know that a significant proportion of populations spend nothing on health services, but struggle to determine if this is a matter of choice or necessity (as noted above, we also fail to distinguish between expenditure on necessary or elective procedures, or, for example, expenditure on branded medicines for which generics are available). One way to achieve a better understanding of expenditure patterns is to establish the need for specific health services, something we are able to do with certain health coverage indicators, as noted in the previous chapter. This underlines the importance of monitoring health service and financial coverage simultaneously and side by side (19).

Third, measures of catastrophic and impoverishing health expenditures reflect the financial cost of inadequate financial protection. More specifically, the indicators used measure the financial consequences of seeking health services in the absence of full financial coverage. They do not measure the impact of uncertainty about financial risk before health services are sought (21, 22). Measuring this would be of interest, since uncertainty about financial risk reduces peace of mind and well-being in itself, and can also cause people to change behaviours. For example, anxiety about whether necessary health services will be affordable to a family may force them to save large amounts of money that they would otherwise have invested in improving their housing conditions. One purpose of UHC is to ensure that no one faces the tough decision of choosing between health services and other necessities; therefore, UHC also provides peace of mind. To date it has been difficult to develop generally acceptable ways of measuring the intrinsic value of the reduced uncertainty linked to forms of financial risk protection (or to the knowledge that health services are available and of good quality) (19). The increasing body of research on well-being might, in the future, offer alternative ways to measure financial protection, taking into account insights from behavioural economics or psychology (24–26).

Fourth, effective tracking of financial protection depends on reliable household expenditure surveys, ideally conducted every two to five years. For tracking and global monitoring, reliability, validity and comparability are crucial. Unfortunately, a number of studies have shown that health expenditure estimates derived from household expenditure surveys do not always satisfy those requirements (27, 28). In many cases these problems reflect the way surveys are designed (29, 30). The survey instruments most commonly used to collect health expenditure data differ in aspects

such as the recall period (the period the respondent is asked to recall and report on), the number of expenditure items covered, and the overall focus of the survey. These differences have been shown to influence people's responses, affecting comparability between surveys. For example, the health expenditures reported in surveys (or parts of surveys) focusing on health tend to be higher than those reported in multipurpose surveys (or sections) where health is only one item under consideration (27, 28). At the same time, health surveys may underestimate total expenditure as they generally rely on a smaller set of questions to gather such data. Nevertheless, while the variability in survey instruments is a reason for interpreting results with caution, it should not be an excuse for not monitoring. It should also be borne in mind that efforts to standardize survey instruments and methods of implementation are under way.

Data collection efforts are also needed to improve our ability to assess the long-term impact of OOP payment on household living standards (15, 16). With cross-section data, we can identify the number of households forced to exceed their capacity to pay at a given point in time, but cannot tell what happens to them subsequently. One household's catastrophe is another household's inconvenience, and exploring the difference between the two requires the ability to track the same households over time, which is expensive and administratively complex. Inclusion of standard modules on OOP health expenditures in regular surveys would help increase data availability and comparability between populations, but generally speaking household expenditure surveys reveal little about how households cope with health shocks (31, 32). Some contain questions about whether households financed their health expenditures through savings, selling assets, or borrowing (33), but the responses are often difficult to interpret because of the different ways savings are used in different countries (19). Longitudinal surveys, which follow the same people over time, offer insights into the socioeconomic impact of health shocks. However, most such surveys are currently not representative of the general population, notable exceptions being the Indonesian Family Life Survey and the Russian Longitudinal Monitoring Survey. In fact, at present, most panel data sets focus on the ageing population, as, for example, with the Health and Retirement Surveys or English Longitudinal Study of Ageing, to name just two. Most importantly, if the aim is to assess the long-term impact of OOP expenditure rather than health on socioeconomic status, it is not enough to have some panel data on medical and non-medical expenditures. What is required is sufficient longitudinal data to estimate the distribution of medical expenditures faced by a household over time. Unsurprisingly, there is to date little evidence on persistent, long-term health expenditure (34, 35), let alone evidence regarding its impact on living standards.

Finally, it is clear that focusing on people's pockets and what comes out of them when paying for health services, runs the risk of missing the bigger reality of the health–finance interface. In addition to the immediate financial consequences of sickness, households must face problems such as loss of employment or wages because of taking time off work, and where long-term disability or death is involved these losses cannot be made good within the framework of health services financing. In that sense, wider social protection measures may be needed to ensure that there are no adverse consequences associated both with ill-health and with using needed health services.

Despite these various limitations – all of which are susceptible to amelioration – there is little doubt that the monitoring of financial protection is already of tremendous value. Tracking catastrophic and impoverishing health expenditure is not a complex exercise, and relies on the household consumption expenditure surveys that are routinely carried out by many countries, but which, unfortunately, are not always analysed to assess financial protection. There is plenty of expertise for those countries not yet tracking these indicators to draw on, and there is ample scope for making better use of existing surveys. Monitoring financial protection would be of even greater benefit to policy- and decision-makers were more countries to undertake routine monitoring exercises. However, the strengthening of the working relationship between health ministries and national statistical agencies is crucial to ensuring that the information generated is put to the best use.

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4

# Looking back, moving forward

## Looking back

More people have access to essential health services today than at any other time in history. For some health services, global population coverage already surpasses 80%, and in the past decade there is some evidence that the proportion of people hit by health service-related catastrophic spending and impoverishment has dropped somewhat. However, there is still a long way to go on the road to UHC, both in terms of health service and financial protection coverage. It is estimated that at least 400 million people are lacking at least one of seven essential services such as family planning or child immunization, for example, while catastrophic health expenditure is common among those who use health services. Among the 37 countries conducting a national survey during 2002–2012 considered in this report, 1.8% of people experienced catastrophic health spending in the preceding year and 0.9% were pushed under the US\$ 2/day poverty line as a result of OOP expenditures on health, and 15%, already living in poverty, are pushed further into penury by the same cause.

Notwithstanding these sobering numbers, UHC progress is a reality, and keys aspects of that reality are measurable. This first global monitoring report on tracking UHC has shown that using a core set of tracer indicators of the kind recommended by the WHO/World Bank Group UHC monitoring framework (1), it is possible to track progress in key areas of financial protection and health services coverage not just for populations as a whole, but for critical subpopulations such as the rural residents and the poor.

The data presented here reveal critical data gaps for global monitoring on both sides of the UHC coverage equation. There are a number of reasons for these gaps, among the most obvious being the simple fact that not enough countries undertake regular monitoring or have the capacity to monitor. Many of the indicators employed to monitor health sector performance include the principal UHC progress indicators, and many countries already use them. Ethiopia, for example, already monitors three dozen service coverage and financial protection indicators on a regular basis (2), while Singapore tracks indicators of access, quality and affordability of services as part of the key performance indicators of the ministry of health (3). Other countries have extensive systems allowing for periodic health sector performance reviews at subnational and national levels which are excellent for UHC tracking purposes, Ghana being a prime example (Box 6).



### **Box 6. Ghana: UHC progress and challenges**

Dating from 2003, Ghana's National Health Insurance Scheme (NHIS) has been the main focus of efforts to reduce financial barriers to health services, complementing the Community-based Health Planning and Services programme which was launched in 1999 to reduce geographical barriers to health services access, particularly in remote rural communities. There has also been a good deal of investment in the strengthening of district health systems with a view to improving health outcomes (4).

Ghana uses an elaborate system of periodic health sector reviews at district, regional and national levels to report on sector-wide indicators of the main objectives of the national health strategy, including those in the Health Sector Medium-Term Development Plan 2010–2013. Led by the ministry of health, these comprehensive reviews feed into the Interagency Performance Reviews and culminate in the national Health Summit. The annual assessment of the health sector performance is achieved using a variety of tools, and the monitoring of UHC is considered part and parcel of the general framework for monitoring health sector performance. The main source of data for the health sector review is routine administrative health service data, which provide annual updates on a range of health service utilization and intervention coverage indicators by district and region. Periodic population-based surveys – notably the Demographic and Health Survey (conducted every five years since 1988) and Multiple Indicator Cluster Survey (conducted in 2006 and 2011) – are used to evaluate health service performance in terms of coverage of maternal and child health interventions, and, at the impact level, through indicators of child mortality. These surveys are complemented by household surveys such as the Living Standards Survey. Together, the surveys provide disaggregated data on mortality and other indicators by wealth quintiles and other stratifiers. National Health Accounts exercises were conducted in 2005 and 2010. Despite Ghana's monitoring efforts, there are still some significant blind spots, particularly in measuring equity and financial risk protection. Existing household surveys should also add variables on noncommunicable conditions such as hypertension and diabetes.

While Ghana has made progress in a number of areas, it also faces challenges. By 2012, only 34% of the population was covered by the NHIS, less than half of the targeted 70%. NHIS coverage matters, as borne out by surveys showing that it is associated with a much higher rate of service use in relation to self-reported need, particularly for the poorest segment of the population. Moreover, while the NHIS was designed to be pro-poor, beneficiaries are typically from the middle-wealth quintiles, and thus the potential of this instrument to promote equity is not being realized (5). Similarly, while intervention coverage rates are high for several interventions related to the MDGs, the poorest still have lower coverage than others. Systemic problems include a lack of doctors in rural areas, half of Ghana's doctors being located in the Greater Accra Region.

That UHC monitoring is already an implicit part of health progress and system assessment is hardly surprising, given the importance of health system performance in the overall UHC endeavour, and it is a strength that countries can build on. UHC monitoring should be at the heart of any health systems performance assessment of the national health sector strategic plan, which includes tracking trends and inequalities in health system inputs and outputs, coverage and risk factors and health outcomes. The countries that have already implemented such monitoring track progress towards UHC using coverage and financial protection indicators while also considering the full array of health progress and system performance indicators. This is true of Thailand (6), for example, where a solid framework with indicators, targets, data sources, data quality assessment and analysis, and clear roles and responsibilities of country institutions, has been a key part of the country's monitoring success.

Because UHC is fundamentally about equity, UHC tracking needs to allow for disaggregation of data so as to measure the effects of socioeconomic status, place of residence, sex and other factors. The global framework proposes three primary elements for disaggregation: household income, expenditure or wealth (coverage of the poorest segment of the population compared with richer segments), place of residence (rural or urban), and sex. Here too there is a need for greater effort and investment. Household surveys are the prime instrument for collecting data on equity, but facility and administrative data can also be used to highlight trends and differences between geographical areas (7). The value of regular household surveys that provide comprehensive and disaggregated information on service coverage and financial protection has been shown in several countries, one notable example being the five-yearly national health services survey in China (8), which are a key part of the country's comprehensive monitoring efforts (Box 7). Regular national surveys are required to collect data on health-related household expenses and coverage of a broad spectrum of health interventions with the necessary equity stratifiers.



### **Box 7. China: monitoring the results of the reforms**

China has implemented a series of pro-UHC reforms in the past decade or so, including the introduction of a new rural cooperative medical scheme in 2003, urban residence-based health insurance in 2007, and the latest round of comprehensive health system reform which began in 2009 (8). Three major information systems are used to monitor progress towards UHC: first, household surveys, especially the National Health Services Survey, which periodically provide data on coverage of population, services, and cost by health programmes and plans, and are used to measure key UHC indicators by region and population group; second, national health account studies, which are used to provide detailed information on health financing; and third, routine health information systems, including a reporting system for monitoring performance of current health systems reform. A number of studies have also been conducted by academic institutions with support from funding agencies or government authorities.

Service coverage indicators include coverage of basic clinical services, and selected public health programmes, such as immunization, TB management, hypertension management and clean drinking water. Financial protection coverage indicators include OOP payment, proportion of households burdened by catastrophic medical expenditures, and levels of co-payment (OOP payments made at the time of seeking care that cover part of the cost) in health insurance schemes.

The tracking of UHC in China has helped decision-makers evaluate progress and identify key challenges. On the progress side, the selected indicators show positive trends, especially in service coverage, a notable example being the coverage of antenatal care which reached 95% in 2008. Inpatient care utilization has also doubled over the past decade, with faster increases reported for the poor. In terms of financial protection, expansion of coverage under prepayment schemes has been a key strategy in China to provide people with financial protection, and between 2003 and 2008, impoverishment rates decreased by 0.9%. However impoverishment in the poorest income group increased dramatically, mainly because of a rapid increase in health service utilization and the relatively low capacity of protection mechanisms for this group. That said, the overall impoverishment rate and proportion of OOP payments in total health expenditures have declined. In terms of the main challenges faced, cost escalation is a particular concern, with 15% annual growth of medical expenditures. Another worry is the persistent, elevated level of catastrophic expenditure for people on a low income.

In general, more data are available on the MDG-related coverage indicators than for NCD-related interventions. Several papers in the PLoS Collection country case studies<sup>1</sup> indicated major data gaps for coverage of interventions and risk factors for NCDs. As noted in Chapter 2, NCDs caused more than half of the global burden of disease in 2012 and are estimated to kill around 38 million people per year.<sup>2</sup> It is thus impossible to talk meaningfully about population health without reference to NCDs, and impossible to monitor UHC without monitoring NCD-related interventions. Some countries are already making the effort, notable among them Chile (Box 8), Mexico, Singapore and Thailand, which are using specific national surveys and facility data to sharpen the focus in this area. This report has offered two indicators based on biomarkers for hypertension and diabetes which are useful as tracers to track NCD health service coverage.

Treatment coverage needs better measurement. The relative paucity of good data for indicators of treatment coverage reflects the difficulty in determining the population need for treatment of conditions. The lack of data on true population need for treatment is particularly important, since this is where people are most likely to forgo care because of unaffordable fees. Even in high-income countries for which there are extensive data, few population treatment coverage indicators are in routine use (9, 10).



#### **Box 8. Chile: a decades-long UHC tradition, but still struggling with high OOP payment**

Chile started on the road towards UHC with the establishment of a social security system in 1924, and confirmed its commitment in 1952 with the creation of a national health system which offered public subsidized coverage for the poor (11). Since then the country has come a long way, but much remains to be done. For example, while 98% of the population has health insurance coverage, OOP expenses are still high and increasing, exposing many to the risk of catastrophic and/or impoverishing expenditures. Exactly how many is unclear since the most recent data on the proportion of households facing catastrophic expenditure date from 2007 (4% of households). The levels of coverage are well over 80% for indicators such as sanitation, immunization, family planning, antenatal services, skilled birth attendance and TB treatment success, but much lower for interventions aimed at NCDs, such as cervical and breast cancer screening, hypertension treatment coverage and depression treatment coverage.

Chile draws on a range of population-based, health facility and administrative data sources, and uses a broad set of indicators to monitor health service and financial protection coverage. Most indicators are broken down by demographic and socioeconomic factors, and reveal significant disparities between public and private sector health and financial protection coverage. For example, the monitoring of hospital admission and surgical intervention rates by wealth quintiles showed that while admission rates were higher for the poor than the rich, the poorest had much lower access to surgical and specialist interventions. Changes in insurance payment schemes appear to have contributed to reductions in disparities in utilization rates across income groups. However, monitoring probably underestimates inequalities between the rich and the poor, as it does not take into account the likely differences in need for health services across different wealth quintiles. While there are missing data for some priority health interventions and for equity disaggregation, and a lack of consistency and frequency in population health surveys, overall, Chile is generating relevant and useful information that facilitates the tracking of progress towards UHC.

1 Available at: <http://www.ploscollections.org/article/browse/issue/info:doi/10.1371/issue.pcol.v07.i22>

2 WHO Global Health Observatory. [http://www.who.int/gho/ncd/mortality\\_morbidity/en/](http://www.who.int/gho/ncd/mortality_morbidity/en/) (Accessed: March 30 2015).

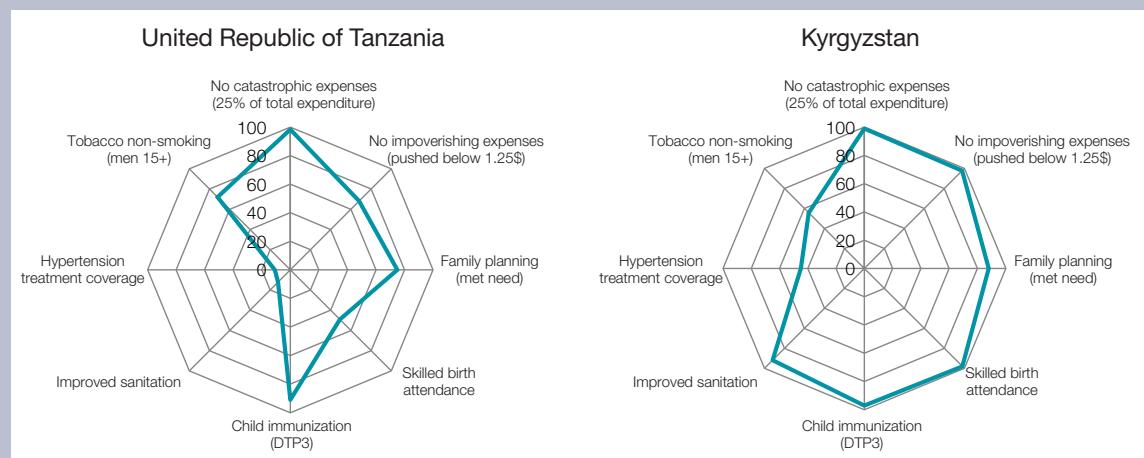
Finally, one of the most important lessons to come out of this report, and the work that has gone into it, is the value of monitoring health services and financial protection coverage together, as specified in the WHO / World Bank UHC monitoring framework (Box 9). It is only by looking at both kinds of indicator that we can get the true UHC picture, illuminating for example, issues such as the level of forgone care. Data can be presented for individual indicators on both dimensions (Box 7) or combined into a summary measure.

Summary or composite measures can easily be communicated and used to ascertain trends. In this report, no effort was made to develop a summary measure of coverage, as data were lacking on several tracer indicators for many countries, including disaggregation. An example of a summary of the coverage of prevention and treatment interventions was provided elsewhere (9). Combining the coverage of interventions and financial protection into a single summary measure, with an equity dimension, would even be more useful for global monitoring of UHC. Work is ongoing to develop such measures.

#### **Box 9.** Simultaneous monitoring to obtain the full picture

Figure 4.1 presents tracer indicators for Kyrgyzstan and The United Republic of Tanzania, showing one way health services and financial protection coverage data can be visualized together. Needless to say, countries may want to include a different set or a greater number of service coverage indicators. In addition, a similar approach can also be used to highlight the equity dimension in making progress towards UHC, (e.g. spider graphs with plots for the poorest wealth quintile). Here six health service coverage indicators are reported alongside two indicators of financial protection, using the rescaled versions of financial protection indicators as proposed in the joint WHO/World Bank UHC monitoring framework. For all indicators, zero coverage is represented by the centre of the spider web, and 100% is the outer edge of the web, with each indicator having an axis in the web.

**Figure 4.1.** Selected tracer indicators, Kyrgyzstan and United Republic of Tanzania



Such visualizations invite countries to explore why coverage is lower for some dimensions than others, and also to delve deeper into understanding the dynamic relationship across service coverage and financial protection. Coverage at different times within a country can also be plotted on the same graph, showing coverage expansion (or contraction) over time. Comparisons of levels of catastrophic health expenditures and service coverage across countries can also be informative. In the case of the United Republic of Tanzania some interesting questions are raised. For example, does the United Republic of Tanzania have a relatively low incidence of catastrophic health spending because people are deterred from using health services or because they fear the financial consequences? Low coverage rates of several service coverage indicators suggest the latter plays a role. In Kyrgyzstan, there is relatively good financial protection, reflecting the fact that Kyrgyzstan has undertaken a series of reforms to its health system starting with the introduction of its compulsory health insurance fund in 1997, but the graph also shows that more effort is required to increase coverage of hypertension treatment and to reduce smoking.

## Moving forward

This report looks back at the progress made over the past decade or so, a period which, in public health terms has been largely dominated by the MDGs which reach their target term this year. The challenge for the future will be to maintain the momentum achieved and address the many areas of unfinished MDG business. The SDGs that are to carry us into the future are likely to include a number of specific health goals as indicated by the UN General Assembly's endorsement of the Open Working Group report<sup>1</sup> in which "Ensure healthy lives and promote wellbeing for all at all ages" is one of 17 SDGs. There are 169 targets for all goals combined, and the health goal (Goal 3) comprises 13 targets, including one (target 3.8) for UHC: "Achieve 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".

With 169 targets and a desire to keep the total number of indicators as small as possible, there will clearly be pressure to make the most effective use of indicators, even more so because several of the health goal targets have multiple subtargets. As is clear in this report, the UHC target needs to be monitored through indicators of health service and financial protection coverage, disaggregated to assess progress in the most disadvantaged population groups. It will therefore be essential to have at least two indicators under UHC, one on financial protection (presenting both catastrophic and impoverishing health expenditures) and one on intervention coverage, comprising of a set of indicators as presented in this report. Some of the intervention coverage indicators may be selected to monitor other health targets (e.g. skilled birth attendance under maternal mortality), but most are not likely to be part of the small set of SDG indicators. Potentially, these indicators could be summarized in a composite measure, but at present data gaps are too extensive to do this in a meaningful way.

Putting all coverage and risk factor indicators under the UHC target as a single indicator could provide a way to reduce the number of indicators under the health goal and still maintain the most important coverage and risk factor indicators. If this could be achieved it would help provide a framework for an integrated approach to health monitoring, rather than separate "silos" of the kind proposed by the health targets. It would also be an opportunity to mainstream equity monitoring, as UHC has equity hardwired into it, and provide an entry point for country-specificity in the indicators. However, it does not preclude global monitoring, as there are a small set of tracer indicators that all countries will monitor, or are already monitoring.

Meeting the monitoring demands of these new objectives, while daunting, also presents an opportunity to focus on strengthening country health information systems, using an integrated, comprehensive approach and based on each country's individual needs. Where appropriate these efforts should be supported by well-aligned investments by international partners. Health information systems will be at the core of SDG monitoring, drawing upon multiple data sources, including civil registration and vital statistics systems, population-based surveys, health facility and administrative information systems.

As challenging as the monitoring task may be, it is heartening to know that we are not starting from zero. There is already a strong foundation of health indicators to build upon, including the intervention coverage indicators of the health-related MDGs, the recommended priority interventions related to NCDs (12, 13) and indicators of financial protection (14). There is also a wealth of experience, both at the national and international level, much of it related to the work done tracking the MDGs, but increasingly focused on a more comprehensive approach that also includes NCDs and injuries. Many countries have increased their activity with short- to medium-term solutions for data gathering, such as intermittent household surveys, health facility surveys and web-based facility-based routine reporting. Enhanced and expanded monitoring of health

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<sup>1</sup> Open Working Group proposal for Sustainable Development Goals. Available at: <https://sustainabledevelopment.un.org/focussdgs.html>

under the SDGs should seek to build on this experience, sharpening our focus on the key health service and financial protection interventions that underpin UHC. Effective UHC tracking is central to achieving the global goals for poverty alleviation and health improvement set by the World Bank Group and WHO. It will also be vital to the realization of the SDGs.

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# Annexes

# Annex 1

## Coverage indicators

**Table A1.1.** Definitions of indicators of health intervention coverage for monitoring universal health coverage

Indicator	Primary data source	Numerator	Denominator	Equity measurements available for this report
<b>Promotion/prevention</b>				
Family planning coverage with modern methods	Household surveys	Sexually active women 15–49 years who are currently using a modern contraceptive method	Women 15–49 years of age who are sexually active and do not wish to become pregnant	Wealth, education, urban/rural residence
Antenatal care coverage	Household surveys, administrative records	At least 4 visits to any care provider during pregnancy	Live births	Wealth, education, urban/rural residence
Skilled birth attendance	Household surveys, administrative records	Live births attended by skilled health personnel (doctors, nurses or midwives)	Live births	Wealth, education, urban/rural residence
Diphtheria, tetanus and pertussis (DTP3) immunization coverage among 1-year-olds	Administrative records	1-year-old children who have received 3 doses of a vaccine containing diphtheria, tetanus and pertussis	1-year-old children	Wealth, education, urban/rural residence, sex
Prevalence of no tobacco smoking in the past 30 days among adults age $\geq 15$ years	Household surveys	Adults 15 years and older who have not smoked tobacco in the past 30 days	Adults 15 years and older	Sex
Percentage of population using improved drinking water sources	Household surveys	Population living in a household with drinking water from: piped water into dwelling, plot or yard; public tap/stand pipe; tube well/borehole; protected dug well; protected spring; or rainwater collection	Total population	Wealth, urban/rural residence
Percentage of population using improved sanitation facilities	Household surveys	Population living in a household with: flush or pour-flush to piped sewer system, septic tank or pit latrine; ventilated improved pit latrine; pit latrine with slab; or composting toilet	Total population	Wealth, urban/rural residence
Preventive chemotherapy (PC) coverage against neglected tropical diseases (NTDs)	Administrative records	People requiring PC who have received PC (at least one NTD)	People requiring PC (at least one NTD)	None

<b>Indicator</b>	<b>Primary data source</b>	<b>Numerator</b>	<b>Denominator</b>	<b>Equity measurements available for this report</b>
<b>Treatment indicators</b>				
Antiretroviral therapy coverage	Administrative records, household surveys including HIV test	People who are currently receiving antiretroviral combination therapy	People living with HIV	None
Tuberculosis treatment coverage	Administrative records	New cases of TB that have been diagnosed and completed treatment in a given year	New cases of TB in a given year	None
Hypertension coverage	Health examination surveys including blood pressure measurement	Adults 18 years and older currently taking antihypertensive medication	Adults 18 years and older taking medication for hypertension, with systolic blood pressure $\geq$ 140 mmHg, or with diastolic blood pressure $\geq$ 90 mmHg	Wealth, sex (not shown)
Diabetes coverage	Health examination surveys including blood glucose measurement	Adults 18 years and older currently taking medication for diabetes (insulin or glycaemic control pills)	Adults 18 years and older taking medication for diabetes or with fasting plasma glucose $\geq$ 7.0 mmol/l	Sex (not shown)
Cataract surgical coverage	Health examination surveys including visual acuity and basic causes of vision impairment	Adults 50 years and older who have received bilateral cataract surgery or who have received unilateral cataract surgery with operable cataract and visual acuity $<$ 6/18 in the unoperated eye	Adults 50 years and older with bilateral operable cataract and visual acuity $<$ 6/18, who have received cataract surgery in both eyes, or who have received cataract surgery in one eye and have operable cataract with visual acuity $<$ 6/18 in the unoperated eye	Sex

**Table A1.2.** Regions used for presentation in this report. Regions are based on World Bank geographic regions ([www.worldbank.org/en/country](http://www.worldbank.org/en/country)), with high-income OECD Member States presented separately

Region	WHO Member States and areas and World Bank Member States
<b>High-income: OECD</b>	Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom of Great Britain and Northern Ireland, United States of America
<b>East Asia and Pacific</b>	Brunei Darussalam, Cambodia, China, Cook Islands, <sup>a</sup> Democratic People's Republic of Korea, <sup>a</sup> Fiji, Indonesia, Kiribati, Lao People's Democratic Republic, Malaysia, Marshall Islands, Micronesia (Federated States of), Mongolia, Myanmar, Nauru, <sup>a</sup> Niue, <sup>a</sup> Palau, Papua New Guinea, Philippines, Samoa, Singapore, Solomon Islands, Thailand, Timor-Leste, Tonga, Tuvalu, Vanuatu, Viet Nam
<b>Europe and Central Asia</b>	Albania, Andorra, <sup>a</sup> Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Monaco, <sup>a</sup> Montenegro, Republic of Moldova, Romania, Russian Federation, San Marino, Serbia, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine, Uzbekistan, and Kosovo (in accordance with Security Council resolution 1244 (1999)) <sup>b</sup>
<b>Latin America and Caribbean</b>	Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia (Plurinational State of), Brazil, Colombia, Costa Rica, Cuba, <sup>a</sup> Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela (Bolivarian Republic of)
<b>Middle East and North Africa</b>	Algeria, Bahrain, Djibouti, Egypt, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Lebanon, Libya, Malta, Morocco, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Tunisia, United Arab Emirates, Yemen
<b>South Asia</b>	Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka
<b>Sub-Saharan Africa</b>	Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, 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, Sudan, Swaziland, Togo, Uganda, United Republic of Tanzania, Zambia, Zimbabwe

<sup>a</sup> WHO Member State only;

<sup>b</sup> World Bank Member State only.

## Antenatal care coverage

### Policy context

Routine antenatal care (ANC) is clearly important for the health of the mother and her baby, but it also provides an important access point to the health-care system for pregnant women, and may include vaccination against tetanus, screening and treatment for high blood pressure, diabetes, anaemia, HIV, malaria and sexually transmitted diseases, dissemination of information on topics such as postpartum contraception and breastfeeding, and ultimately linkage to care during delivery. There are two Millennium Development Goals (MDGs) ANC indicators – ANC1 (at least one visit with a skilled provider) and ANC4 (at least four visits with any provider) – and the post-2015 health agenda will probably continue to acknowledge the importance of improving maternal, newborn

and child health, maintaining the impetus generated by MDG4 and 5, the UN Secretary-General's *Global Strategy for Women's and Children's Health (1)*<sup>1</sup> and the Every Women Every Child<sup>2</sup> initiative.

## **Measurement**

The first MDG indicators for ANC coverage, ANC1, is defined as the proportion of women aged 15 to 49 years with a live birth in a given time period who received ANC from a skilled provider (doctor, nurse or midwife) at least once during pregnancy. The second, ANC4, is defined as the proportion of the same group that received antenatal care four or more times from any provider.<sup>3</sup> In this report we focus on ANC4 because we consider it to be a better indicator of overall health system access. The main data sources for ANC are population-based household surveys, the two most common of which are the Demographic and Health Surveys (DHS) and the Multiple Indicator Cluster Surveys (MICS). Administrative data may also be used. For the preparation of this report, an ANC database compiled by United Nations Children's Fund (UNICEF)<sup>4</sup> was analysed with Bayesian multilevel regression models to estimate regional and global trends in coverage.<sup>5</sup>

## **Global status**

From 2000 to 2013, global coverage of ANC4 increased from 49% to 64%, but, as can be seen from Figure A1.1 below, there are large differences between regions, with coverage levels in sub-Saharan Africa and South Asia below 60% and three regions with coverage over 80%. The number of countries with ANC4 coverage over 80% climbed from 80 in 2000 to 119 in 2013. Only 17 countries had ANC4 coverage below 50% in 2013.

## **Equity**

Data from 72 low- and middle-income countries that conducted at least one national survey (DHS or MICS) during 2005–2013 show that coverage of ANC4 reflected household economic status, with poorer subgroups receiving lower coverage than richer subgroups. The median coverage level for the 72 low- and middle-income countries was 50% in the poorest subgroups, 64% in the middle economic subgroups and 83% in the richest subgroups (2). Geographical location was also a factor with one third of study countries having ANC4 coverage at least 20% higher in urban than rural areas. Figure A1.2 illustrates the median coverage by multiple dimensions of inequality in low-income and middle-income country groups.

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1 <http://www.everywomaneverychild.org/global-strategy-2>

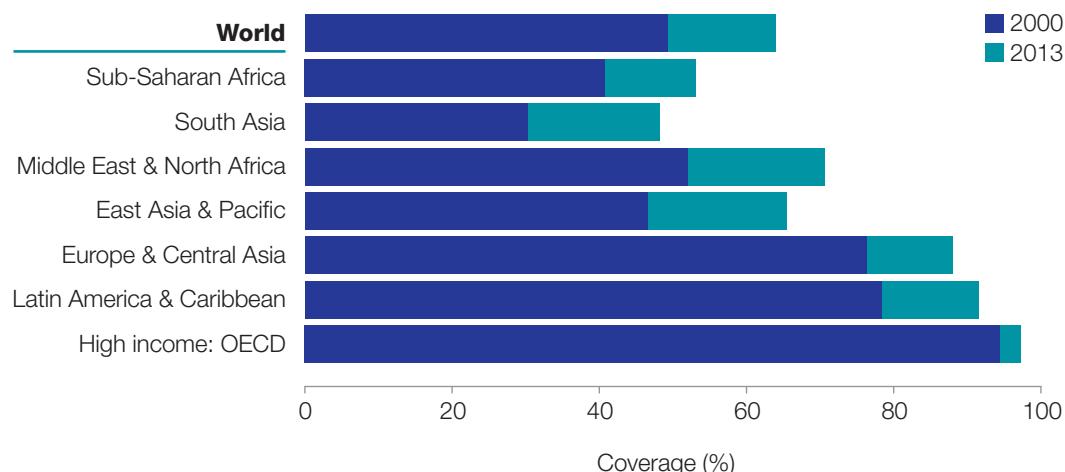
2 <http://www.unfoundation.org/what-we-do/campaigns-and-initiatives/every-woman-every-child/>

3 <http://mdgs.un.org/unsd/mi/wiki/5-5-Antenatal-care-coverage-at-least-one-visit-and-at-least-four-visits.ashx>

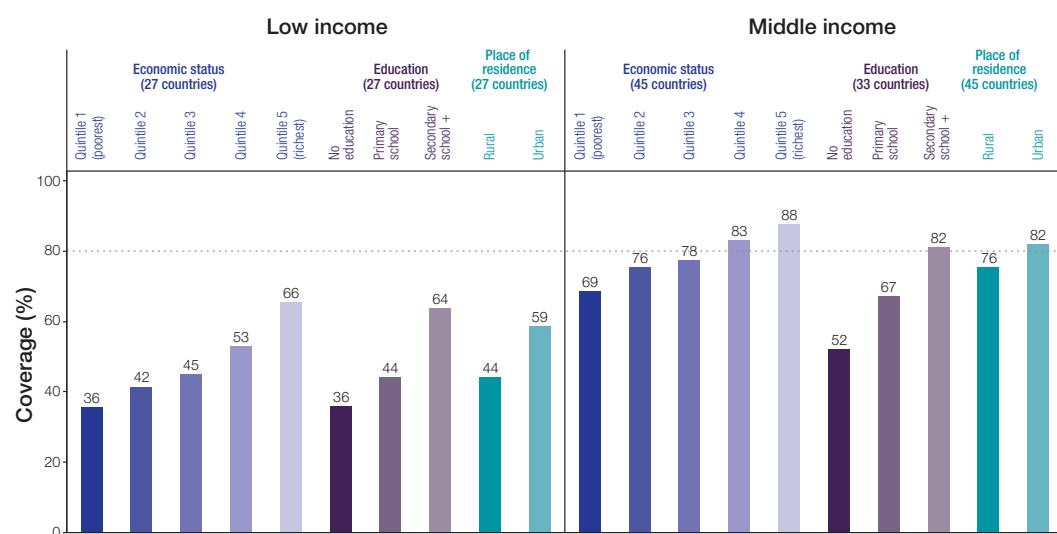
4 <http://data.unicef.org/maternal-health/antenatal-care> Nov 2014 update

5 See methodological details at: [http://www.who.int/healthinfo/universal\\_health\\_coverage/report/2015/en](http://www.who.int/healthinfo/universal_health_coverage/report/2015/en)

**Figure A1.1.** Antenatal care coverage, at least four visits with any care provider during pregnancy (ANC4), by region and globally in 2000 and 2013



**Figure A1.2.** Antenatal care coverage – at least four visits with any care provider during pregnancy – (median values), by multiple dimensions of inequality, in low- and middle-income countries, DHS-MICS 2005–2013



## Antiretroviral therapy coverage

### Policy context

The global scale-up of access to antiretroviral therapy (ART) over the past decade has been one of the most dramatic and successful public health interventions of the MDG era, and, together with improvements in treatment efficacy, has dramatically reduced AIDS mortality rates. Changes in WHO guidelines regarding the appropriate CD4-cell count for ART initiation have led to an expansion of the population in need of treatment. The prices of ART medicines have continued to decline. In low- and middle-income countries the median price of first-line regimens has decreased to US\$ 115 per year, but there is considerable variation in prices between countries (3). ART is provided free of OOP expenses in many African countries, but indirect costs such as loss of income and transport costs still constitute a financial burden for the poor (4).

## Measurement

Despite all the attention given to ART coverage, and the monitoring efforts made, the ART picture remains blurred in some respects. The number of people on ART is usually derived from health facility reports, and data collection systems vary in quality. Furthermore, calculation of need is compromised by the changes in treatment initiation thresholds mentioned above. The original threshold for treatment initiation was below 200 CD4 cells/mm<sup>3</sup>, and is now set at 500 CD4 cells/mm<sup>3</sup> or less, with earlier initiation for some special populations. We define coverage as the proportion of people on ART among all persons living with HIV, which has the advantage that coverage rates are comparable over time. The number of people living with HIV is estimated annually by the Joint United Nations Programme on HIV/AIDS (UNAIDS) (5).

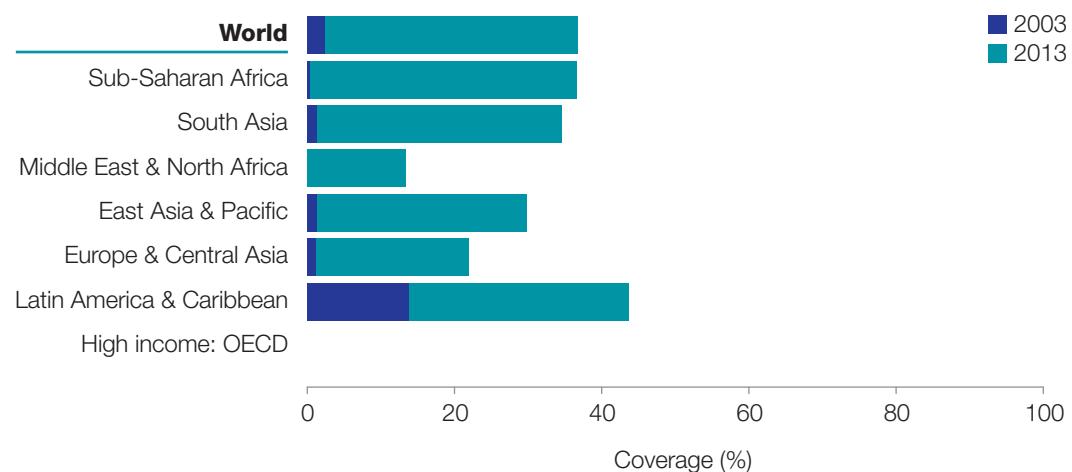
## Global status

At the end of 2013, 12.9 million people living with HIV were receiving ART globally, up from less than 1 million a decade earlier. This represents approximately 37% of the estimated 35.0 (33.2–37.2) million people living with HIV.<sup>1</sup> In sub-Saharan Africa, where 25 million HIV-infected people live, 9.1 million (37%) of people living with HIV received ART. Six African countries had a coverage rate of 50% or higher in 2013, and ART coverage was highest in Botswana (70%).

## Equity

ART coverage numbers for children under 15 years has increased during the past decade to more than 700 000 globally (4). However, only 23% of children living with HIV in low- and middle-income countries are on ART, compared with 37% of adults. Little is known about ART coverage in key populations such as sex workers, men who have sex with men, and people who inject drugs. Earlier estimates of ART coverage showed that in most countries women have higher levels of coverage. Data on ART coverage among the poorest quintiles of the population are very limited. However, the Uganda AIDS Indicator Survey 2011 showed no obvious gradient in coverage across wealth quintiles.

**Figure A1.3.** Percentage of people living with HIV who are currently on ART by region and globally, 2003 and 2013



1 According to the treatment criteria in the 2013 WHO consolidated ARV guidelines, about 85% of people living with HIV are eligible for ART. Source: (4).

## **Family planning coverage**

### **Policy context**

Provision of contraception and family planning services, including modern methods of contraception such as intrauterine devices, the pill, contraceptive implants, hormonal injectables, condoms, and female/male sterilization, is a core concern for health systems worldwide, and has been the subject of numerous national and international initiatives including the International Conference on Population and Development (ICPD) 1994 and Family Planning 2020, a global partnership that aims to support family planning coverage and reach 120 million additional women by 2020.<sup>1</sup> Family planning figures prominently in the MDGs, Goal 5B specifically targeting universal access to reproductive health care.

### **Measurement**

Family planning coverage should be measured as the proportion of sexually active women who are at risk of becoming pregnant and do not wish to become pregnant, who are using modern contraceptive methods, regardless of their marital status (Table A1.1). However, key data sources in some regions of the world restrict questions on contraceptive use to women who are married or in a “union”. Moreover, unmarried women in those regions are less likely to report sexual activity, leading to significant underestimates of need. The coverage indicator used in this report is the percentage of total demand for family planning among married or in-union women aged 15 to 49 years that is satisfied by a modern method (modern contraceptive use divided by total demand for family planning) (6, 7). The main data sources are household surveys, including DHS, Reproductive Health Surveys and other national surveys. Estimates are updated annually by the United Nations Department of Economic and Social Affairs, Population Division, and are also calculated periodically by the Guttmacher Institute (8).

### **Global and regional status**

Global coverage has increased only slightly (74% in 1990 to 76% in 2013) and increases were largest in the regions starting from the lowest coverage levels (Figure A1.4), including sub-Saharan Africa (29% to 41%), Europe and Central Asia (58% to 64%), and South Asia (62% to 68%) (7). National coverage rates were below 80% in 150 of 183 countries in 2013, while 57 countries had coverage rates below 50%, including 34 countries in sub-Saharan Africa. Coverage with any method is higher than coverage with modern methods, but approximately 90% of those who report that their needs are satisfied are using modern methods (88% in developed countries and 91% in developing countries) (9). This breakdown has changed little since 1990.

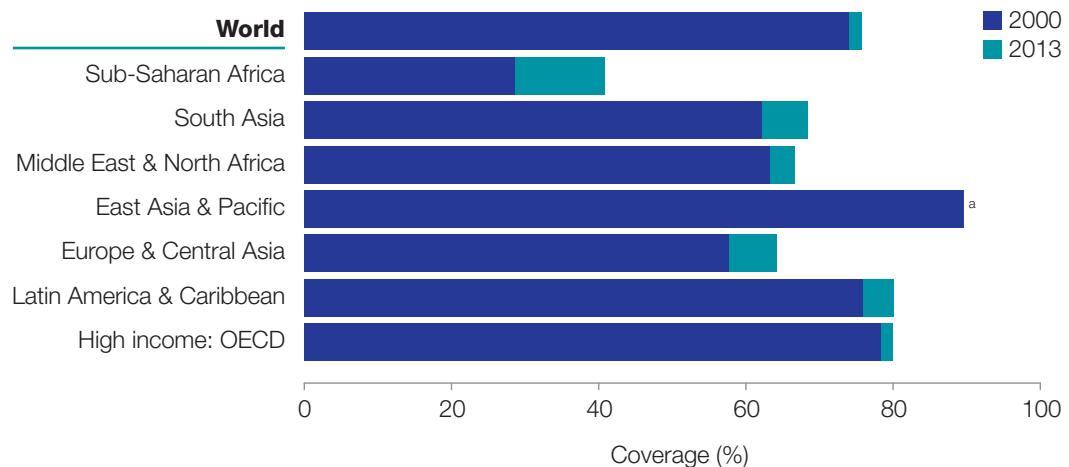
### **Equity**

Data from 60 low- and middle-income countries (10) that conducted at least one national survey (DHS or MICS) during 2005–2013 show that family planning coverage (including both modern and traditional methods) reflects household economic status, with poorer subgroups reporting lower levels of satisfied need than richer subgroups. The median coverage level of the 60 low- and middle-income countries was 48% in the poorest subgroups, 63% in the middle economic subgroups and 75% in the richest subgroups. The proportion of countries with family planning coverage of at least 80% was 20%, 23%, 27%, 32% and 35%, in quintile 1 (poorest), quintile 2, quintile 3, quintile 4 and quintile 5 (richest), respectively. Figure A1.5 illustrates the median coverage by multiple dimensions of inequality in low-income and middle-income country groups. There is a gradient of median coverage by wealth quintile in the low-income country group, while the median values were more or less similar across wealth quintiles for the middle-income country group except for the richest quintile.

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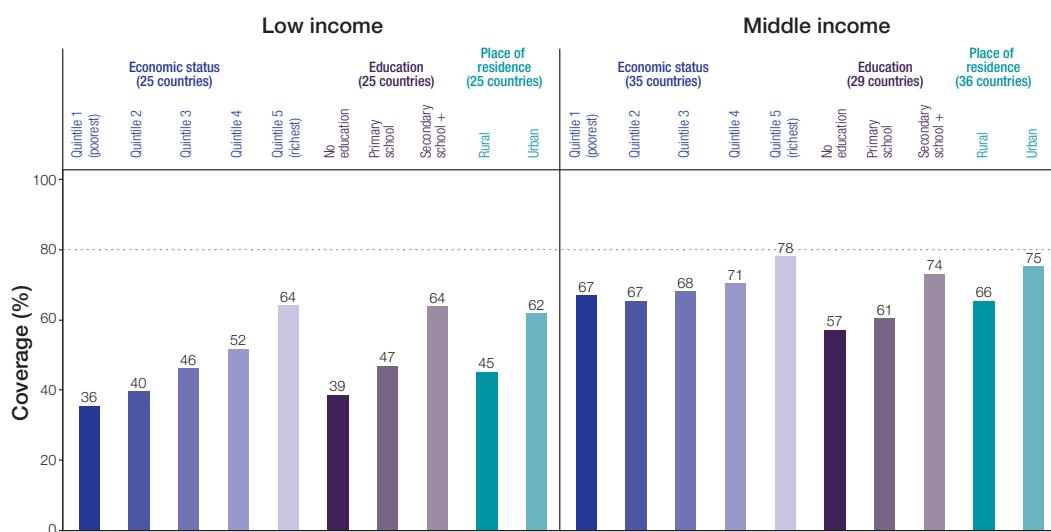
1 <http://www.familyplanning2020.org>

**Figure A1.4.** Percentage of demand for family planning that is satisfied with a modern method among married or in-union women by region and globally, 2000 and 2013



Source: UN Department of Economic and Social Affairs, Population Division. Model-based estimates and projections of family planning indicators 2014. New York: United Nations; 2014.

**Figure A1.5.** Demand for family planning satisfied with modern and traditional contraceptives (median values), by multiple dimensions of inequality, in low- and middle-income countries, DHS-MICS 2005–2013



## **Immunization coverage**

### **Policy context**

Universal immunization is a core UHC objective, and a key focus of global initiatives, notably the Global Vaccine Action Plan (GVAP) 2011–2020, which aims to achieve at least 90% national coverage by 2020 and at least 80% vaccination coverage in every district or equivalent administrative unit for all vaccines in national immunization programmes (11). Immunizations are usually given free of charge in the public sector, but are charged for when provided in the private sector. In the majority of countries the public sector is the main provider.

### **Measurement**

Three doses of diphtheria-tetanus-pertussis (DTP3)-containing vaccine is used as an indicator to monitor progress. In some countries, this vaccine may also contain vaccines for Haemophilus Influenzae type b, Hepatitis B, or inactivated polio vaccine. The two main data sources are health facility data based on reports from service providers and household surveys. WHO and UNICEF provide annual estimates of immunization coverage using both data sources (12). Countries use health facility reports to produce subnational coverage estimates (mostly by district).

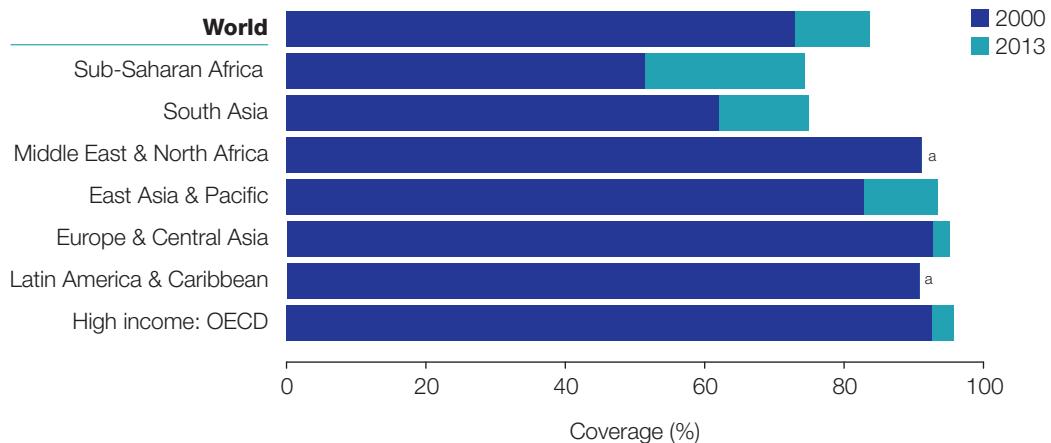
### **Global and regional status**

Global DTP3 coverage was 84% in 2013, up from 73% in 2000. This coverage level was achieved in 2009 and has not increased since. DTP3 coverage in the sub-Saharan African and South Asian regions is still under 80%, at 74% and 75%, respectively (Figure A1.6). For sub-Saharan Africa this is the highest level of coverage recorded. South Asia has seen no increase in coverage since 2010. In 2013, 88 countries (45%) had achieved at least 90% coverage for all the vaccines included in their national immunization schedule (13). These schedules include long-standing vaccines such as bacillus Calmette–Guérin (BCG), measles first dose, and polio, as well as more recent vaccines such as rotavirus vaccine and pneumococcal conjugate vaccine.

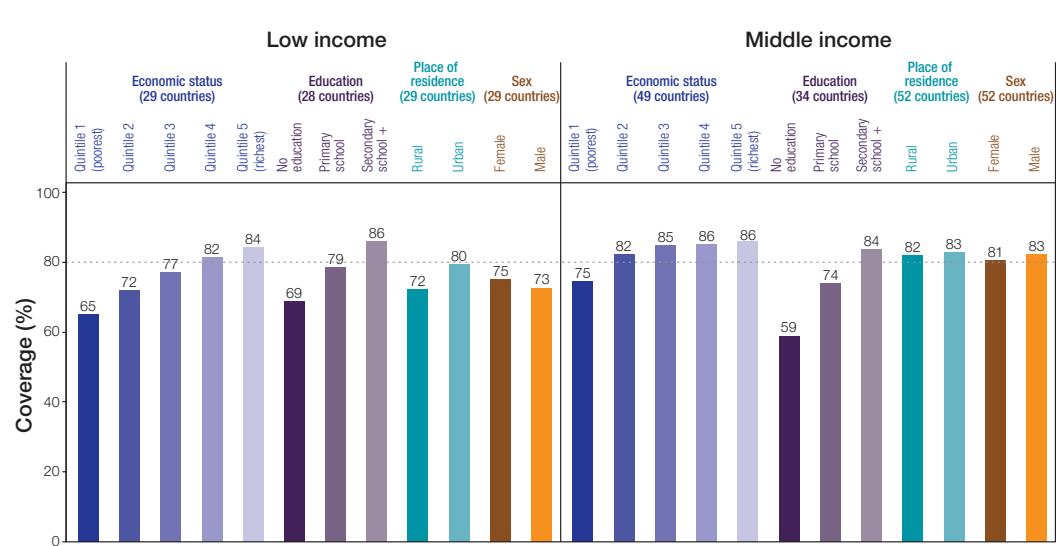
### **Equity**

Despite the generally high levels of immunization coverage, disparities linked to both location and income are seen. In 2013, 56 countries (29%) reported that all districts had reached at least 80% DTP3 coverage, but 20 (10%) reported that fewer than half of their districts achieved that level. With regard to income, among countries that conducted at least one national survey (DHS or MICS) during 2005–2013, children in the poorest wealth quintiles had 73% DTP3 coverage compared to 86% among children in the richest quintile (median values of 78 countries) (2). Figure A1.7 illustrates median coverage by multiple dimensions of inequality in low-income and middle-income country groups. As can be seen, the median values for coverage by place of residence was at least 80%, except for rural residents of the low-income country group.

**Figure A1.6.** DTP3 immunization coverage (%), by world region and globally, 2000 and 2013



**Figure A1.7.** DTP3 immunization coverage (median values), by multiple dimensions of inequality, in low- and middle-income countries, DHS-MICS 2005–2013



## **Skilled attendance at birth**

### **Policy context**

Effective delivery and postpartum care can reduce preventable maternal and newborn deaths, and is dependent on the presence of a skilled attendant at birth (SAB). SAB is an MDG indicator, and will likely figure in the SDGs, maintaining global momentum in this area generated by MDG4 and 5, and various initiatives, including the UN Secretary-General's Global Strategy for Women's and Children's Health<sup>1</sup> and Every Women Every Child<sup>2</sup> initiative, UNICEF's Committing to Child Survival: A Promise Renewed,<sup>3</sup> Ending Preventable Maternal Mortality,<sup>4</sup> and the Every Newborn Action Plan (14).<sup>5</sup>

### **Measurement**

The indicator for coverage of skilled birth attendance is defined as the proportion of live births attended by health personnel trained in providing life-saving obstetric care, including giving the necessary supervision, care and advice to women during pregnancy, labour and the postpartum period; conducting deliveries on their own; and caring for neonates.<sup>6</sup> This includes attendance by doctors, nurses and midwives, but excludes traditional birth attendants. How well survey respondents can identify the type of health provider who assisted them is one of the challenges faced when monitoring levels and trends in SAB. In addition, the quality of care provided during this encounter cannot be measured with the current formulation of this indicator. The main data sources for SAB coverage monitoring in developing countries are population-based household surveys (usually DHS and MICS). However, administrative data are also used, and in countries with very high SAB coverage, rates of institutional delivery can serve as a proxy for SAB coverage. For the preparation of this report, the database of SAB measurements maintained by WHO was analysed with a Bayesian multilevel regression model to estimate country-level time trends in SAB coverage (15).

### **Global status**

Globally coverage increased from 62% in 2000 to 73% in 2013, with most regions achieving coverage greater than 80%. The exceptions were South Asia (53% coverage) and sub-Saharan Africa (51% coverage). In 2013, there were 51 countries with coverage below 80%, of which 35 were in sub-Saharan Africa (Figure A1.8).

### **Equity**

Data from 83 low- and middle-income countries that conducted at least one national survey (DHS or MICS) during 2005–2013 show that poorer subgroups report lower SAB coverage than richer subgroups. Figure A.9 illustrates the median coverage by multiple dimensions of inequality in low-income and middle-income country groups. In 53 middle-income countries the median coverage of skilled birth attendance is well over 80% in all quintiles except the poorest. The poorest quintile in those countries is however close to 80%. In 30 low-income countries the situation is very different, as only the richest quintile has coverage over 80% and all others have coverage rates well below 80%, with the poorest two quintiles below 45% (2).

1 <http://www.who.int/pmnch/activities/advocacy/globalstrategy/en/>

2 <http://www.everywomaneverychild.org/>

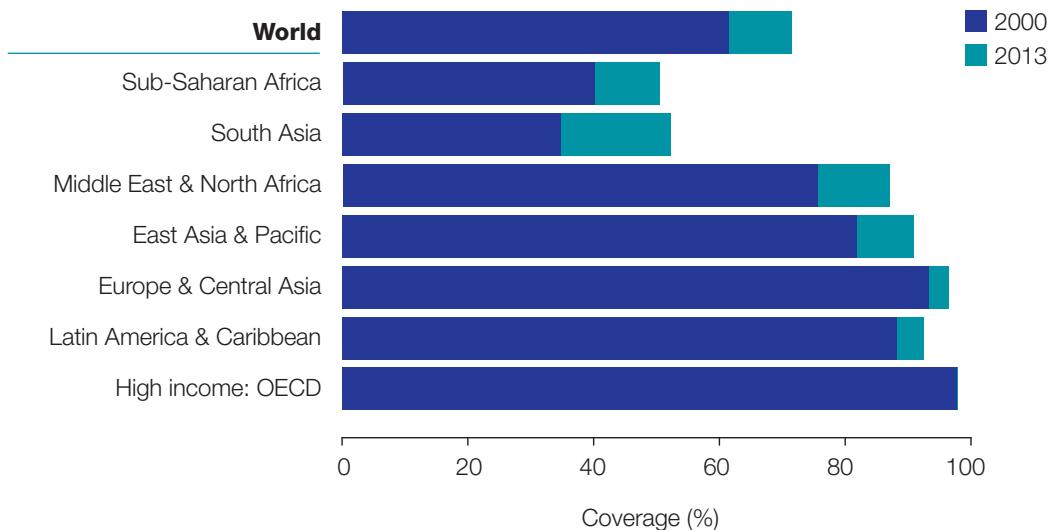
3 [http://www.apromiserenewed.org/A\\_Promise\\_Renewed.html](http://www.apromiserenewed.org/A_Promise_Renewed.html)

4 [http://www.who.int/reproductivehealth/topics/maternal\\_perinatal/epmm/en/](http://www.who.int/reproductivehealth/topics/maternal_perinatal/epmm/en/)

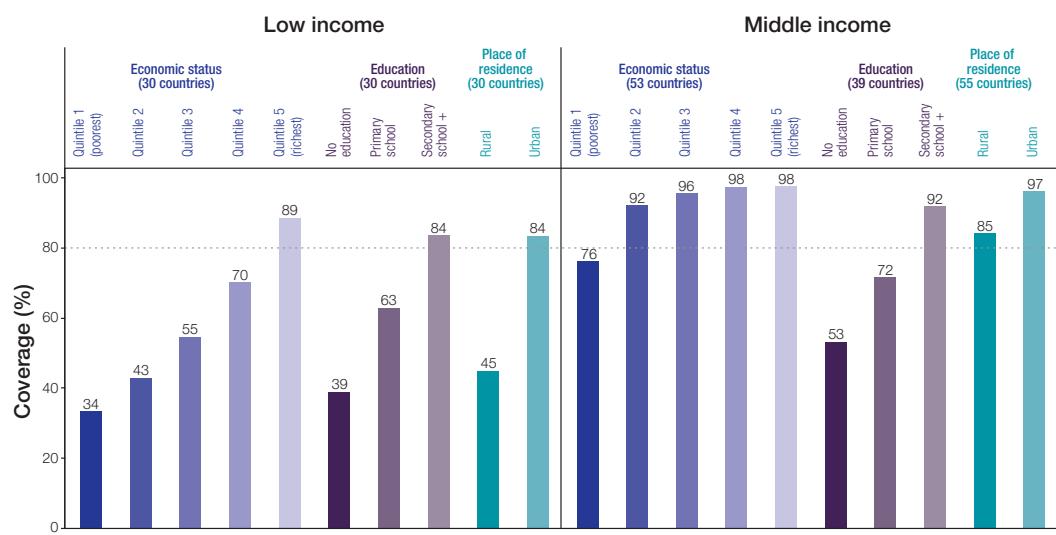
5 <http://www.everynewborn.org/>

6 <http://mdgs.un.org/unsd/mi/wiki/5-2-Proportion-of-births-attended-by-skilled-health-personnel.ashx>

**Figure A1.8.** Proportion of deliveries attended by a skilled health provider, by region and globally, 2000 and 2013



**Figure A1.9.** Births attended by skilled health personnel (median values), by multiple dimensions of inequality, in low- and middle-income countries, DHS-MICS 2005-2013



## Tuberculosis (TB) treatment coverage

### Policy context

Universal access to high-quality care for all people with TB is a core element of TB strategies (16) and fundamental to UHC.<sup>1</sup> The focus of programme monitoring is on routine recording and reporting of the numbers of TB cases diagnosed and treated, and monitoring of treatment outcomes, using standard definitions of cases and treatment outcomes. Treatment for multidrug-resistant TB (MDR-TB), defined as resistance to two of the four first-line drugs (rifampicin and isoniazid), is longer (usually at least 20 months) and requires more expensive and more toxic drugs. The post-2015 global TB strategy emphasizes the importance of UHC and social protection. Many households face financial hardship due to TB, as OOP payments for medical care, transport and food are often high (17, 18).

### Measurement

WHO estimates the TB case detection rate on an annual basis from the reported number of notifications and the estimated total number of new cases in the population. Notifications of TB cases are obtained from regular reports from health facilities. The denominator, the estimated number of incident cases (in need of TB treatment), is estimated from a model that includes a wide range of data (19). The recent upsurge in national TB prevalence surveys provides a stronger empirical basis for the estimates of the numbers of people in need of treatment. The health facility reports also provide data on treatment outcomes. Treatment success rates, defined as treatment completed among notified cases, have had an explicit target of at least 85% since the 1991 World Health Assembly resolution (20).

### Global and regional situation

In 2013, the case detection rate for new and relapse cases was estimated at 64% (uncertainty 61–66%) (21). The global TB treatment success rate was 86% in 2012 and has been at that level since 2005. In other words just over 50% of all TB cases are detected and treated (Figure A1.10). East Asia and Pacific has the highest effective treatment coverage, with 72% of cases detected and successfully treated. Of the 194 countries with 2013 estimates, 100 had at least an 80% case detection rate. If treatment success is also considered, only 12 of the 187 countries for which estimates are available have effective treatment coverage of 80% or higher.

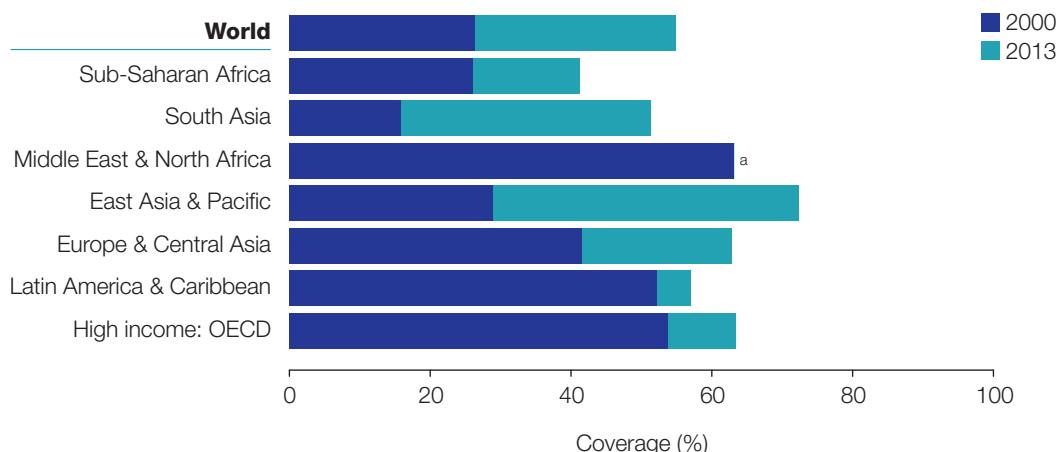
### Equity

There are only limited data on inequalities in TB treatment coverage. The health facility reports and population surveys indicate that TB is much more common among men, indeed the male : female ratio is 1.6 globally.

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1 <http://www.who.int/tb/strategy/en/>. Stop TB strategy 2006–2015.

**Figure A1.10.** Estimated proportions of TB cases that were detected and successfully treated (effective coverage), by region and globally, 2000 and 2013



a Coverage decreased by 2 percentage points in the Middle East and North Africa region.

## Water and sanitation

### Policy context

Access to safe and sufficient drinking water and sanitation has multiple impacts on population health. Ensuring such access will be an important part of the post-2015 SDGs such as eradicating poverty and hunger, improving health and well-being, and ensuring environmental sustainability (22, 23). All people need adequate drinking water and sanitary facilities, and should be able to access them without incurring financial hardship. Low-income populations, disadvantaged population groups and rural communities often do not have the financial means to obtain or connect to existing water and sanitation services, and pay for the cost of sustaining these services. Among 94 countries responding to a survey in 2014, over 60% indicated that affordability schemes (e.g. increasing block tariffs, reduced connection fees, vouchers, free water tanks, free water allocations, microfinance loans) exist for drinking water, but only half of countries that have set up such schemes report that their use is widespread (23).

### Measurement

According to the definitions used by the WHO/UNICEF Joint Monitoring programme, improved drinking water sources include: piped water into dwelling, plot or yard; public tap/stand pipe, tube well/borehole; protected dug well; protected spring, and rainwater collection.<sup>1</sup> Improved sanitation facilities include: flush or pour-flush to piped sewer system, septic tank or pit latrine, ventilated improved pit latrine, pit latrine with slab, and composting toilet. The main data sources for both indicators are national household surveys and censuses. Regular estimates are made by WHO and UNICEF, as part of the Joint Monitoring Programme.<sup>2</sup> Expanded indicators are proposed to capture more information on water quality, actual usage, and hygiene practices (24).

### Global and regional status

Substantial progress has been made in improving access to drinking water and adequate sanitation, with 89% of the world's population having access to a sustainable safe drinking water source in 2012, up from 82% in 2000 (Figure A1.11). However, 40 countries reported less than 80%

1 <http://www.wssinfo.org/definitions-methods/watsan-categories/>

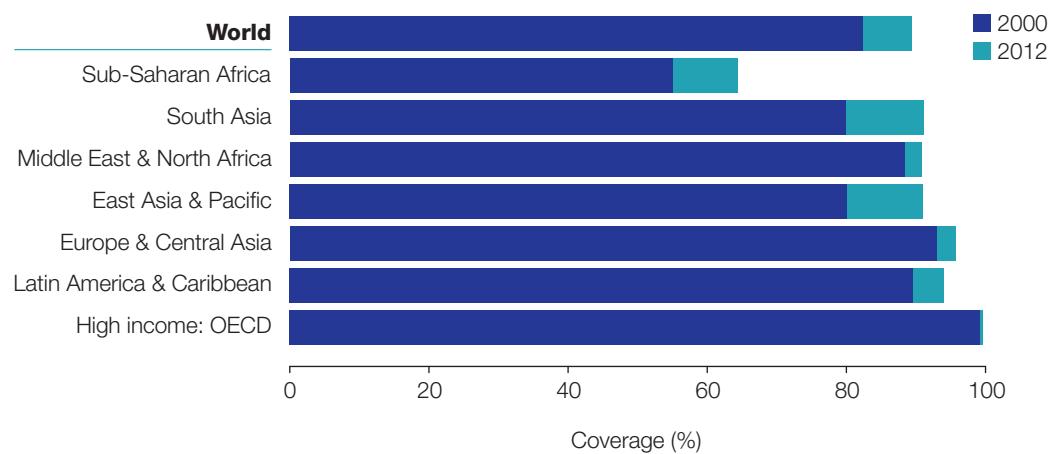
2 [www.wssinfo.org](http://www.wssinfo.org)

coverage, 30 of which are located in sub-Saharan Africa. Global access to improved sanitation facilities also improved but coverage is much lower, with 64% coverage in 2012, up from 56% in 2000. Seventy-six countries had coverage below 80%, while 46 countries had coverage at less than 50% of the population, 34 of which were in sub-Saharan Africa (Figure A1.12).

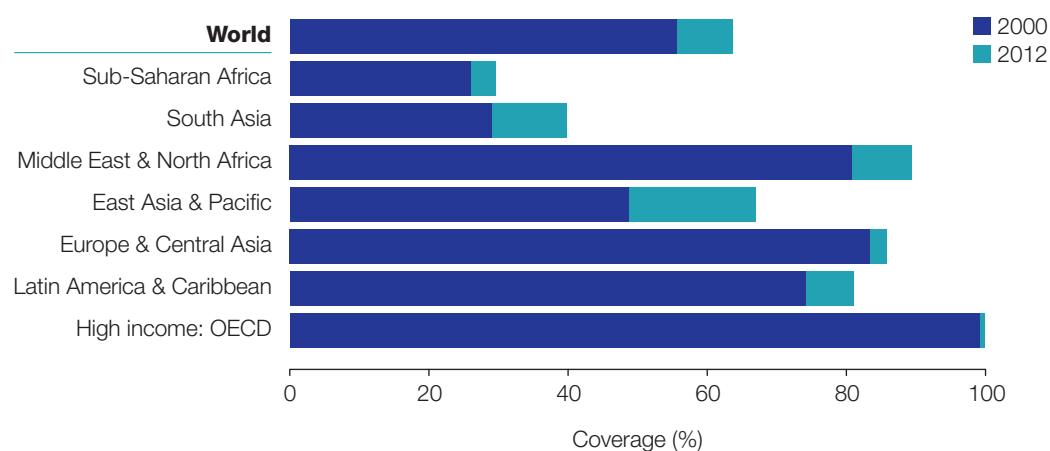
## Equity

Analyses of household survey data show that critical inequities exist for both water and sanitation, with disparities across wealth gradients and place of residence (urban and rural populations). These inequities are much greater for sanitation than water. The median access to improved sanitation in 73 selected low- and middle-income countries was 24% in the poorest subgroups, 41% in the middle economic subgroups and 71% in the richest subgroups, while median access to improved water in those countries was 71% in the poorest subgroups, 78% in the middle economic subgroups and 89% in the richest subgroups.

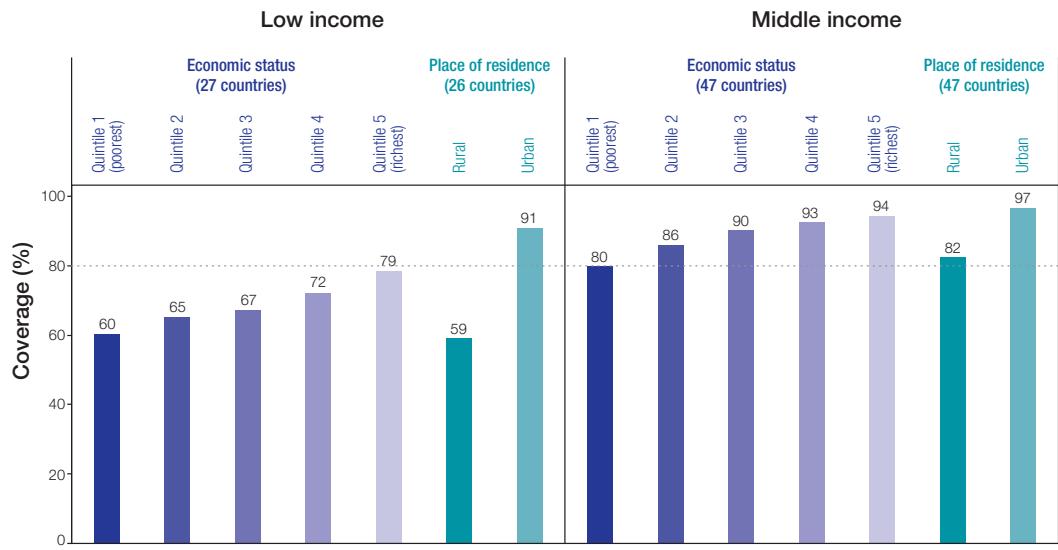
**Figure A1.11.** Improved drinking water coverage, by world region and globally, 2000 and 2012



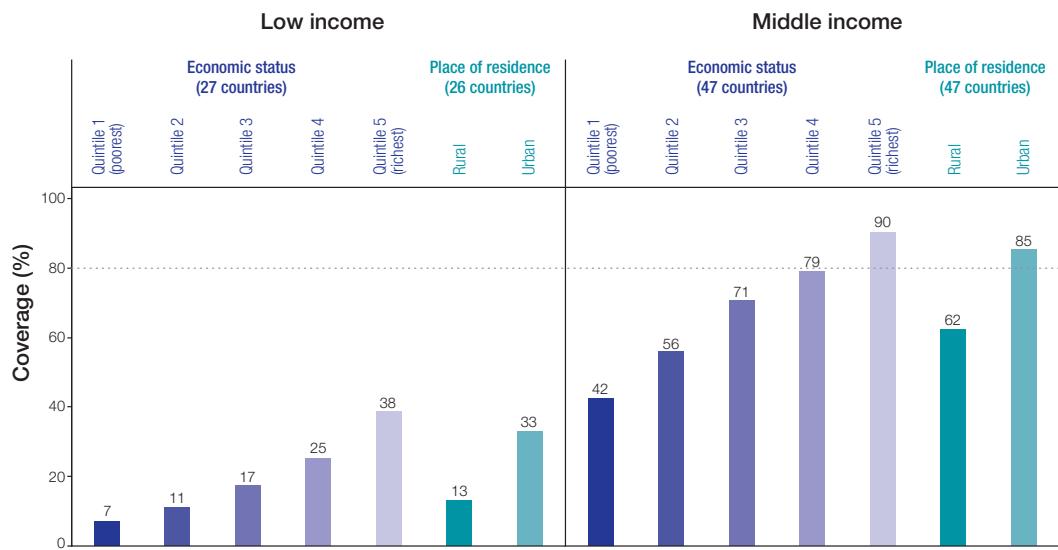
**Figure A1.12.** Improved sanitation coverage, by world region and globally 2000 and 2012



**Figure A1.13.** Access to improved water (median values) by multiple dimensions of inequality, in low- and middle-income countries, multiple household surveys, model based 2010 (economic status) and 2012 (place of residence)



**Figure A1.14.** Access to improved sanitation (median values), by multiple dimensions of inequality, in low- and middle-income countries, multiple household surveys, model based 2010 (economic status) and 2012 (place of residence)



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# Annex 2

## Financial protection indicators

**Table A2.1.** Definition of indicators of (lack of) financial protection

Concept	Lack of financial protection (LFP) indicators	Financial protection (FP) indicators <sup>1</sup>
<b>Catastrophic health expenditures</b>		
Budget share approach	LFP headcount ratios = Numerator/total population	FP headcount ratios are rescaled versions of the lack of financial protection ones, i.e. FP ratios = 1 – LFP ratios
Capacity to pay based on subsistence needs (WHO approach)	Number of people spending 25% or more of their total expenditure on out-of-pocket (OOP) health expenditures. <sup>2</sup>  Capacity to pay is defined as total expenditure net of expenses for basic necessities. Food is obviously one such basic necessity but not all food spending is non-discretionary. Hence a subsistence level of food expenditure is estimated as the average food expenditure per equivalent adults of households in the 45th–55th food budget share distribution. <sup>5</sup> When actual food spending falls below this amount, then capacity to pay is defined as total expenditures net of actual food spending. This also avoids estimating a negative level of capacity to pay. <sup>5</sup>	Share of the population spending less than 25% of their total expenditure on OOP
Capacity to pay based on food expenditure	Number of people spending 40% or more of their non-food expenditures on OOP. <sup>2</sup>	Share of the population spending less than 40% of their non-food expenditure on OOP
<b>Impoverishing health expenditures</b>		
Absolute approach using the international poverty line	Number of people with expenditures net of OOP below an international poverty line but with expenses gross of OOP above such an international poverty line (e.g. US\$ 1.25 per capita per day). <sup>2</sup>	• Share of the population not pushed into poverty, i.e. with expenditures net and gross of OOP above an international poverty line/level of subsistence food consumption/multiple poverty lines
WHO approach using subsistence food expenditure	Number of people with expenditure net of OOP below levels corresponding to subsistence food expenditure but with expenses gross of OOP above subsistence levels of food. Subsistence food expenditure is estimated following the same approach used to identify catastrophic health expenditures in the WHO capacity to pay approach. <sup>3</sup> In other words, the incidence of catastrophic and impoverishing OOP expenditures is based on a function using the same benchmark.	• Share of the population not further pushed, i.e. with expenses below an international poverty line/level of subsistence food consumption/multiple poverty lines and no OOP
Absolute approach using different international poverty lines	Number of people with expenditures net of OOP below the international poverty line applied to the country according to its World Bank income group classification (US\$ 1.25 for low-income countries, US\$ 2.00 for lower-middle-income countries, US\$ 4.00 for upper-middle-income countries and US\$ 5.00 for high-income countries) but with expenses gross of OOP above its corresponding international poverty line. <sup>6</sup>	• Share of the population that are neither pushed nor further pushed into poverty

1 WHO and World Bank. Monitoring progress towards universal health coverage at country and global levels: framework, measures and targets. Geneva: World Health Organization and International Bank for Reconstruction and Development/The World Bank, 2014 ([http://www.who.int/healthinfo/universal\\_health\\_coverage/en/](http://www.who.int/healthinfo/universal_health_coverage/en/), accessed 27 April 2015).

2 Wagstaff A, van Doorslaer E. Catastrophe and impoverishment in paying for health care: with applications to Vietnam 1993–98. *Health Econ.* 2003;12(11):921–34.

3 Xu K, Evans DB, Kawabata K, Zeramini R, Klavus J, Murray C. Household catastrophic health expenditure: a multi-country analysis. *Lancet.* 2003;362(9378):111–7.

4 Distribution of health payments and catastrophic expenditures: methodology (discussion paper EIP/HSF/DP.05.2). Geneva: World Health Organization; 2004 ([http://www.who.int/health.../dp\\_e\\_05\\_2-distribution\\_of\\_health\\_payments.pdf](http://www.who.int/health.../dp_e_05_2-distribution_of_health_payments.pdf)).

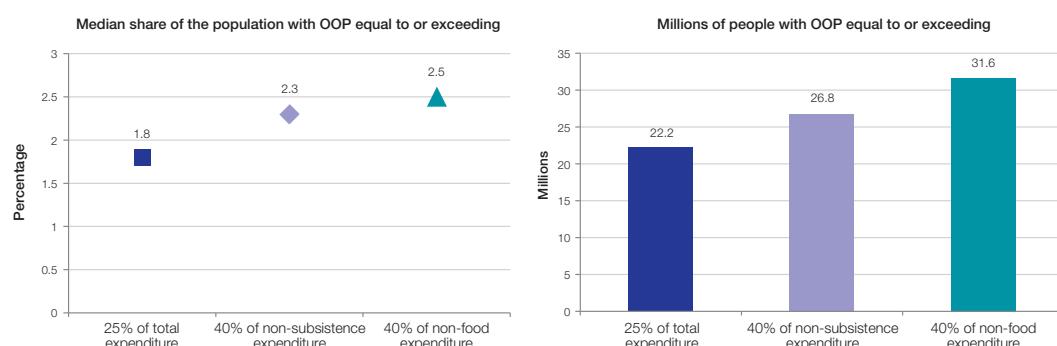
5 Wagstaff A. Measuring financial protection in health. In: Smith P, Mossialos E, Papanicolas I, Leatherman S, editors. Performance measurement for health system improvement: experiences, challenges and prospects. Cambridge: Cambridge University Press; 2009:114–37.

6 Flores G, O'Donnell O. Robust measurement of financial protection in health. Forthcoming HEC-DEEP, University of Lausanne.

## Estimates of catastrophic and impoverishing health spending

Indicators of the lack of financial protection against catastrophic health expenditures can be computed using different thresholds (e.g. 25%, 40%) and different measures of a household's income or capacity to pay (e.g. total expenditure, non-subsistence expenditures, non-food expenditures). Thus, alternative rigorous approaches exist. One approach calculates catastrophic health spending against the household's budget share. This approach does not make an attempt to separate out what might be considered as discretionary spending in a household's budget, i.e. it does not make adjustments to take into account any spending on necessities. The second approach calculates catastrophic health spending against a household's capacity to pay in that it does take spending on necessities into account. One way to do this is to take total expenses net of a subsistence level of food. Another way is to take total expenses net of food spending. For clarity and comparability, this report presents estimates based on these common approaches (1–3). Most importantly budget share indicators and capacity to pay ones are informative about different potential consequences. For instance, two countries might have the same proportion of people spending 25% or more of their total expenditure on OOP health expenditures and yet in one country everyone might also be spending more than 40% of their capacity to pay on OOP health expenditures and not in the other. This can happen if one of the countries is much "poorer" than the other and households in such a country only manage to spend on health care and subsistence needs. Hence, even for global monitoring it might be desirable to show both types of measures.

**Figure A2.1.** Median estimated catastrophic headcount ratios<sup>a</sup> and headcounts<sup>b</sup> across all 37 countries



a Median values (unweighted).

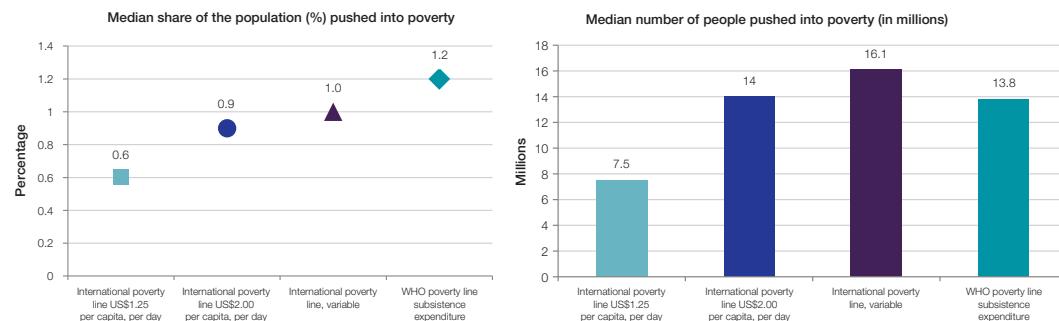
b Number of people are matched to population of survey year.

Figure A2.1 shows that across all countries the median catastrophic headcount ratio at a 40% threshold of capacity to pay using WHO's approach is 2.3%, but if capacity to pay is defined instead as non-food consumption, the median incidence increases to 2.5%. This reflects the fact that the two measures are conceptually similar. The WHO approach assumes that some level of food consumption is potentially discretionary and hence is not used to calculate capacity to pay which depends on a subsistence level of food expenditure. Any amount beyond such a level can be spent on other goods and services, including health services. Relaxing such an assumption, i.e. when capacity to pay is defined in terms of actual food consumption, excludes any discretionary component of food expenditure such that indicators based on this definition can be considered as an upper bound estimate for the incidence of catastrophic health expenditures. Hence the estimated number of people spending relatively beyond their capacity to pay ranges between 26.8 million when defined in relation to subsistence food expenditure and 31.6 million when accounting for any type of food expenditure. Across the 37 countries used in this analysis, the median difference between the two approaches was 0.3%. On the other hand, at a 25% threshold of total expenditure, the median number of people facing catastrophic OOP falls to 22.2 million, i.e. 1.8% of the people in the 37 countries. The lower incidence is driven by inequalities in the distribution

of food expenditures. Indeed, poorer households have less resources available to spend on other things given that the same share of households' resources is devoted to health services, which is not captured by measures based on the OOP payment budget share. Recent work has questioned the capacity to identify a greater burden for the poorer households when using a single threshold, even if capacity to pay is used as a measure of household resources (4–6). However, the methods proposed so far to set variable thresholds for different socioeconomic groups either continue to rely on an arbitrary threshold for a reference socioeconomic status group (4, 5) or require data that are not routinely available (6). For both reasons this report does not follow such approaches to compute indicators. Recently an alternative proposal has been made, namely to define impoverishing and catastrophic payments as two mutually exclusive outcomes. This can be achieved by expressing OOP payments as a ratio of "discretionary consumption" defined by total consumption expenditure in excess of the poverty line (7). In this report, numbers for each measure are presented separately but a detailed analysis based on such an approach is available upon request.

Impoverishing health expenditures can also be monitored using different benchmarks. One choice for the poverty line followed by WHO is to use the subsistence level of food expenditure per equivalent adult which is based on the average food consumption of the poorest 45–55% in each country (8, 9). The main advantage of such an approach is that the same benchmark is used to identify catastrophic and impoverishing OOP. In other words, the burden of realized health expenditures is measured in relative and absolute terms in relation to subsistence food spending. However such a threshold is not appropriate for assessing longitudinal trends as it is difficult to determine changes that are due to the evolution of OOP relative to subsistence needs and changes due to shifts in the distribution of food consumption. Another choice for the poverty line is to use national poverty thresholds but this does not allow for comparability, which is essential for global monitoring. The alternative is to use the World Bank international poverty line which is anchored to the national poverty lines used in the poorest countries (10). However, it could be argued that using a single poverty threshold such as the US\$ 1.25 is not appropriate to assess the global burden of health spending given that countries are at different levels of economic development (11). In an attempt to address this concern, multiples of the international poverty line can be considered for countries classified in different income group categories. Figure A2.2 shows that the share of the population facing impoverishing OOP defined as people pushed into poverty due to OOP ranges between 0.6% when the focus is on extreme poverty (i.e. using the US\$ 1.25 per capita per day) and 1.0% when multiple poverty thresholds are used to take into account differences in levels of economic development. The incidence rate is slightly larger if the WHO subsistence food spending is used instead (1.2%). However, in terms of the absolute number of people, the frequency is lower for this measure because the most populous countries, such as Pakistan, have a lower proportion of the population pushed into poverty with this benchmark than with the international poverty line. In addition, the median rate is unweighted.

**Figure A2.2.** Median estimated impoverishing headcount ratios<sup>a</sup> and headcounts<sup>b</sup> across all 37 countries



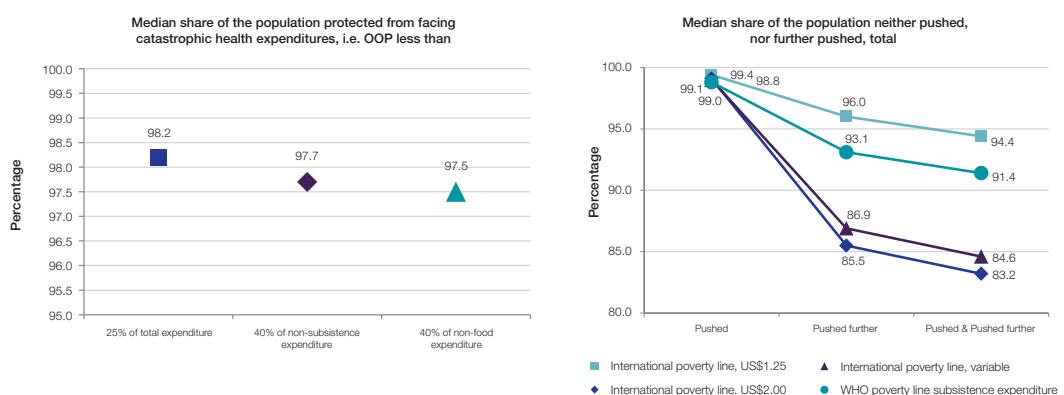
a Median values (unweighted).

b Number of people are matched to population of survey year.

Measures used in this report have also been challenged on the grounds that they do not take into account forgone care (12) or other dimensions of financial hardship such as income losses or borrowing at high interest rates (13). In some cases, these omissions are based on the premise that measures of the lack of financial protection should reflect failures of the health system and not the broader social protection system. This is for instance the argument for not considering earning losses (14). The burden of relying on informal insurance arrangements to cope with the cost of care can be taken into account when the appropriate data are available (15); unfortunately such information is still scarce. In the UHC framework problems of forgone care and unmet demand for essential health services are identified through the coverage indicators. Achievements on the financial protection side have to be evaluated at the same time as achievements on the coverage side.

Figure A2.3 shows estimated median levels of protection using the rescaled measures of catastrophic (left panel) and impoverishing (right panel) measures proposed in the WHO/World Bank joint monitoring framework (Table A2.1). The median share of the population protected from catastrophic health expenditure across the 37 countries ranges between 97.5% and 98.2% depending on the measure of catastrophic expenditure used for calculation. At the same time, the median proportion of the population that is not pushed below any poverty line exceeds 98%. Including people who are already living in poverty and are pushed further below the poverty line because of OOP health spending always decreases levels of protection to values ranging between 86% and 96%. However, the drop is the least steep when using the US\$ 1.25 poverty benchmark because only 12 of the 37 countries used in this analysis are low-income countries for which such a benchmark is really appropriate as it identifies extreme absolute poverty. Using WHO subsistence level of food expenditure, the percentage of people not further pushed into poverty falls below 95% but remains above 90%. For any other threshold, the median share of the population not further pushed into poverty is closer to 85%, in particular when variable international poverty lines are used to identify those living below absolute minimum subsistence level depending on the economic level of development of the country.

**Figure A2.3.** Median estimates<sup>a</sup> of protection against catastrophic and impoverishing health spending across all 37 countries



a Median values (unweighted).

## Trend analysis over 2000–2011

The trend analysis concerned 23 countries which have at least two points of data over the 2000–2011 period. Figure A2.4 shows patterns in impoverishing OOP for those countries with a share greater than or equal to 0.1%, i.e. respectively 15/23 countries when using international poverty lines and 4/23 countries if subsistence food expenditure is used instead. For those countries, the incidence

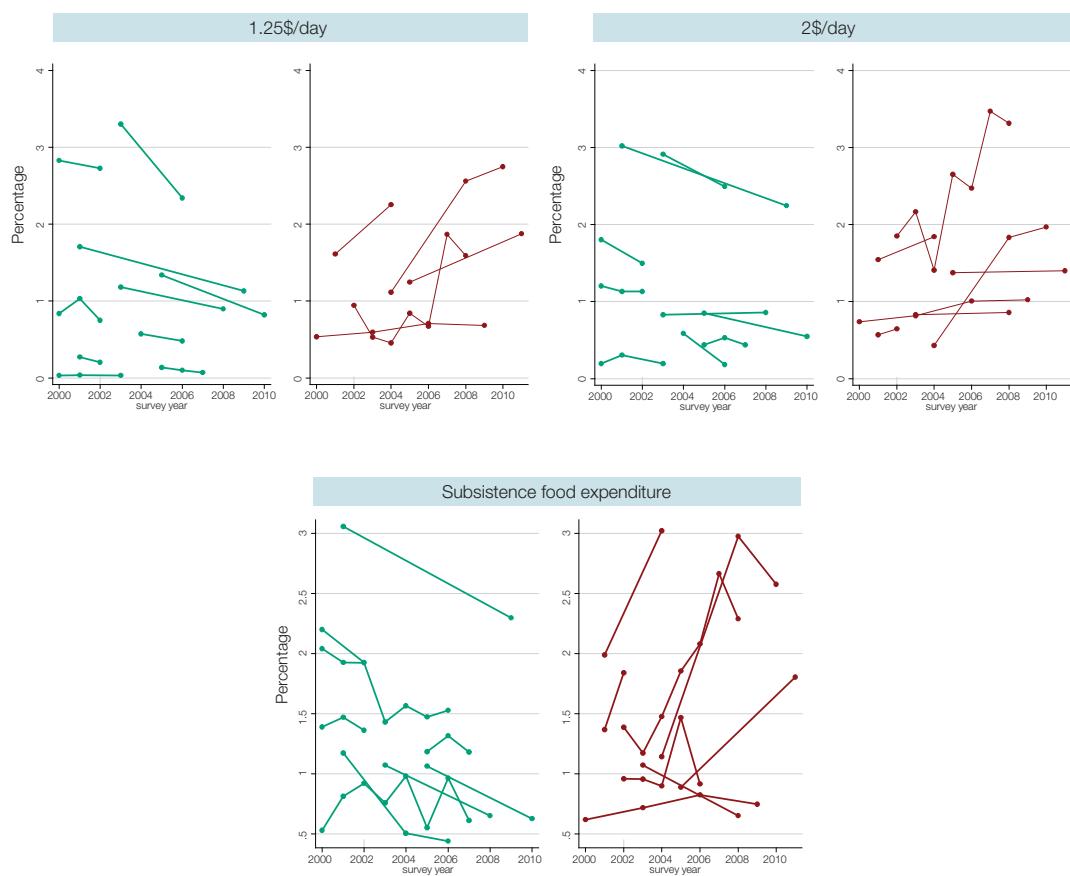
of impoverishing OOP has remained below 0.1% over the period of observation. Keeping this in mind, it is clear from the graphs that for any poverty benchmarks there are more countries showing either a decreasing proportion of the population pushed into poverty or no change at all. Figure A2.5 shows dynamics in the incidence of catastrophic health expenditure for all the 23 countries. For any definition of catastrophic spending there are as many countries showing decreasing trends as there are showing positive ones.

## Data source

The main data sources are population-based household expenditure surveys, the two most common of which are Living Standards Measurement Surveys and Household Budget Surveys. Table A2.2 lists our sample of countries for which we have nationally representative, publicly available and comparable survey data with information on total consumption and on health OOP over the 2002–2012 period. There is an ongoing effort to extend this sample to other countries for which we have survey data but which need to be validated to ensure consistent comparisons across countries and over time.

**Figure A2.4.** Trends in financial protection indicators for 23 countries over 2000–2011

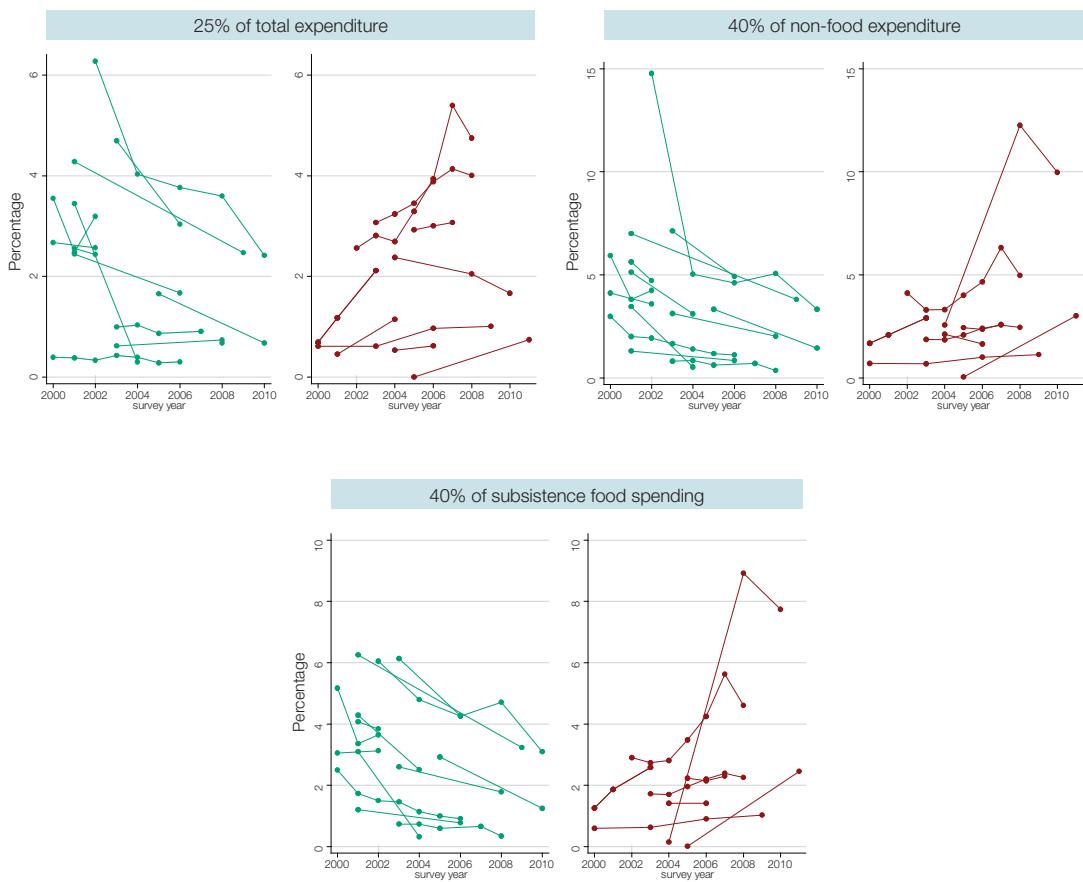
Share of the population (%) facing catastrophic health expenditure using different incidence rates, i.e. OOP equal to or exceeding



Note: For illustrative purposes the figures showing the share of the population (%) pushed into poverty have been restricted to those countries with a share greater than or equal to 0.5% (15/23).

**Figure A2.5.** Trends in financial protection indicators for 23 countries over 2000–2011

Share of the population (%) facing catastrophic health expenditure  
Using different incidence rates, i.e. OOP equal to or exceeding



**Table A2.2** Household surveys over the 2002–2012 period

country name	year	survey	region <sup>a</sup>	Income group <sup>b</sup>
Argentina	2002	Encuesta de Impacto Social de la Crisis Argentina	1	UM
Bolivia (Plurinational State of)	2002	Bolivia—Encuesta Continua de Hogares 2002, MECOVI	3	LM
Bosnia and Herzegovina	2004	Living in Bosnia and Herzegovina Survey	2	LM
Bulgaria	2003	Bulgaria—Multi-Topic Household Survey 2003	2	LM
Cambodia	2006	Cambodia Socio-Economic Survey	1	L
Egypt	2012	Household Income Expenditure and Consumption Survey	4	LM
Estonia	2007	Household Budget Survey	7	H
France	2006	Household Budget Survey	7	H
Georgia	2008	Household Budget Survey	2	LM
Ghana	2006	Living Standards Measurement Survey	6	L
Iran (Islamic Republic of)	2007	Household Income and Expenditure Survey	4	LM
Jordan	2006	Household Income and Expenditure Survey	4	LM
Kenya	2003	Kenyan Health Expenditure and Utilization Survey	6	L
Kyrgyzstan	2004	Household Budget Survey	2	L
Lao People's Democratic Republic (the)	2008	Expenditure and Consumption Survey	1	L
Latvia	2006	Household Budget Survey	2	UM
Malawi	2004	Living Standard Measurement Study	6	L
Mongolia	2008	Household Socio-Economic Survey	1	LM
Nicaragua	2009	Living Standard Measurement Study	3	LM
Niger (the)	2011	Living Standard Measurement Study	6	L
Pakistan	2010	Household Integrated Economic Survey 2010-2011	5	LM
Panama	2008	Living Standard Measurement Study	3	UM
Philippines (the)	2009	Family Income and Expenditure Survey	1	LM
Republic of Korea (the)	2008	Household Income and Expenditure Survey	7	H
Republic of Moldova (the)	2007	Household Budget Survey	2	LM
Russian Federation (the)	2002	Russian Longitudinal Measurement Survey Round XI	2	LM
Rwanda	2010	Enquête intégrale sur les conditions de vie des ménages	6	L
Senegal	2011	Enquetes de Suivi de la Pauvreté au Senegal	6	LM
Tajikistan	2003	Living Standard Measurement Study	2	L
Tunisia	2010	Enquête national sur la dépense, la consommation et le niveau de vie des ménages	4	UM
Turkey	2008	Household Budget Survey	2	UM
Uganda	2002	Uganda National Household Survey II	6	L
Ukraine	2006	Household Budget Survey	2	LM
United Republic of Tanzania (the)	2010	Living Standard Measurement Study	6	L
Viet Nam	2010	Household Living Standards Survey	1	LM
West Bank and Gaza Strip	2004	Palestinian Households Expenditure and Consumption Survey	4	LM
Zambia	2006	Living Conditions Monitoring Survey	6	L

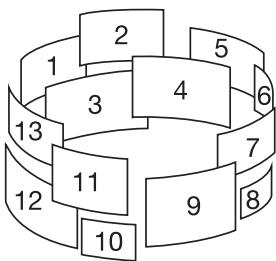
Total number of countries: 37; median year 2007; share of the global population 17.4%. Country regions and income categories all refer to the World Bank classification schemes.

a Region: 1 East Asia & Pacific; 2 Europe & Central Asia; 3 Latin America & Caribbean; 4 Middle East & North Africa; 5 South Asia;  
6 Sub-Saharan Africa; 7 High income: OECD.

b Income group classification of the year of the survey: L—low income; LM—lower middle income; UM—upper middle income; H—high income

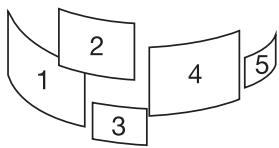
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**Department of Health Statistics and Information Systems (HSI)**  
World Health Organization  
20 Avenue Appia  
1211 Geneva 27  
Switzerland  
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