



HEALTHIER FAIRER SAFER

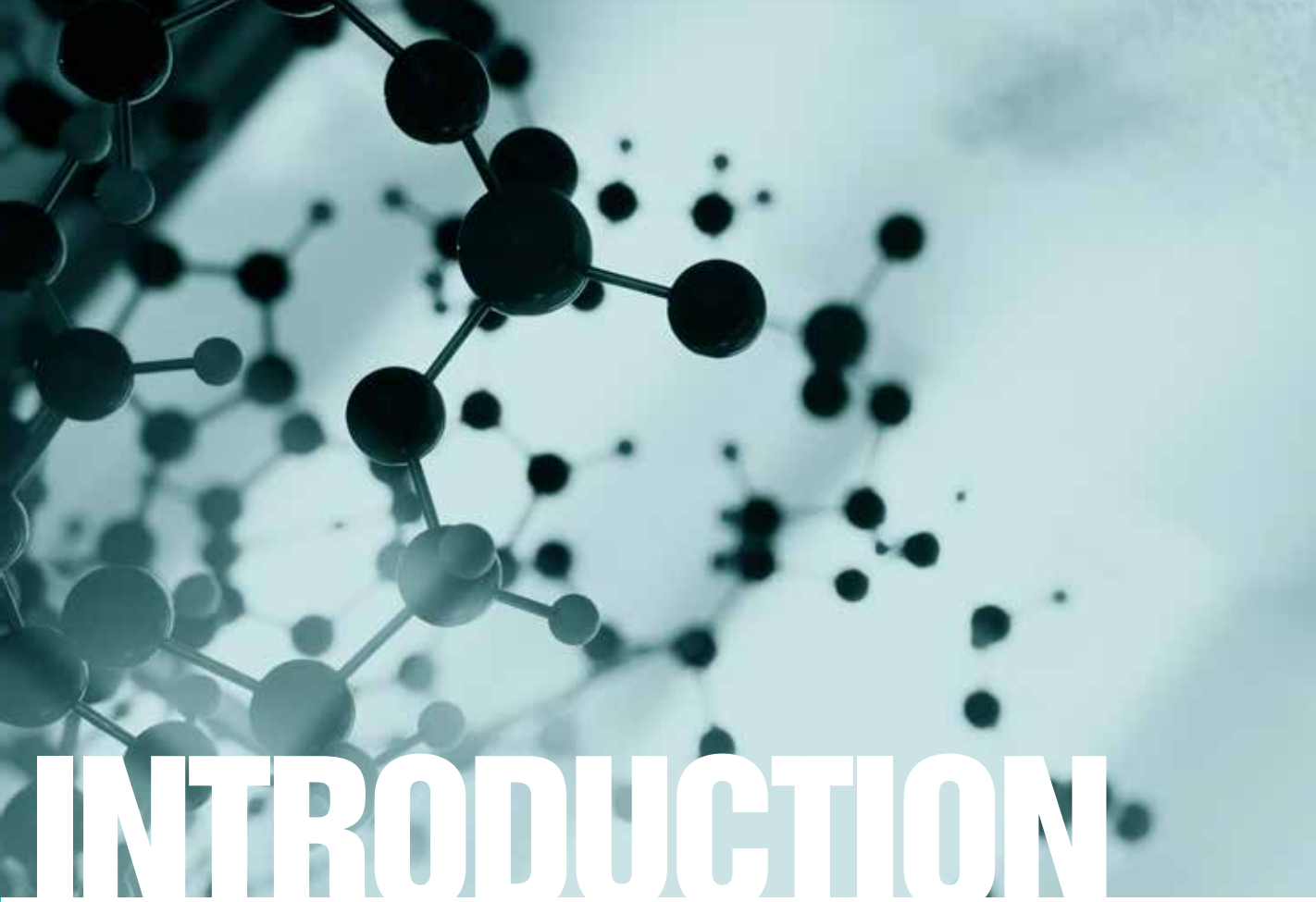
THE GLOBAL
HEALTH
JOURNEY
2007-2017



World Health
Organization

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INTRODUCTION

This report describes and analyses key aspects of global health over the last decade. It considers trends and policies that are relevant to the role and potential influence of the World Health Organization (WHO). It deals with themes and areas of the world's health, where progress would have been expected, was explicitly pledged, or was urgently needed.

A backdrop of forces, beyond the health arena, have an impact on health. Since the beginning of the 21st Century, the march of globalization has quickened, the world has suffered a major financial crisis, whilst serious armed conflicts and deteriorating security situations in some parts of the world have led to displacements and migration of populations on a massive scale. Public health workers have been targeted and killed when carrying out their humanitarian work. Climate change has precipitated many extreme weather events with devastating effects for human settlements. All these factors have had a major bearing on the health and wellbeing of nations and communities, particularly those in the poorest parts of the world.

WHO works in partnership to achieve its goals. The global health architecture has evolved greatly over the last decade. In documents describing its own reform story, WHO has defined its primary role as directing and coordinating international health and summarized the way it discharges this:

- Providing leadership on matters critical to health
- Shaping the health research agenda
- Defining norms and standards for health
- Articulating policy options for health
- Providing technical support and building capacity
- Monitoring health trends

This report is not intended to be a work of scholarship, nor to address every aspect of global health. It is intended to look back and reflect on the trends, achievements and challenges of global health over the last decade – and to explore the needs of the future.



POPULATIONS: THE VITAL SIGNS

The world is home to 800 million more people than it was just a decade ago. The number of births has been more than double the number of deaths, so the population has expanded. The greatest growth has been in the lowest income countries, where mortality rates have been falling much more quickly than birth rates. This is an expected phase of demographic transition.

The number of people living to an advanced age has grown extraordinarily. Between 2007 and 2017, the number of people aged over 90 years has increased by two-thirds, and the number over 100 years has practically doubled – substantial shifts over such a short slice of human history.

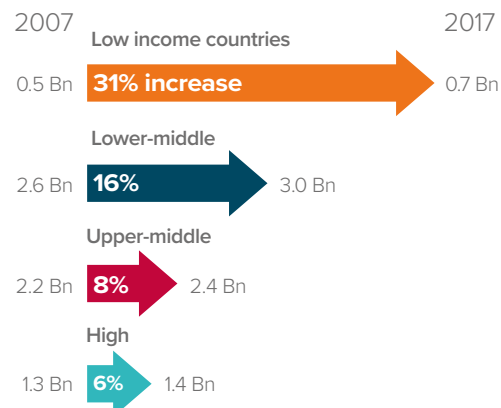
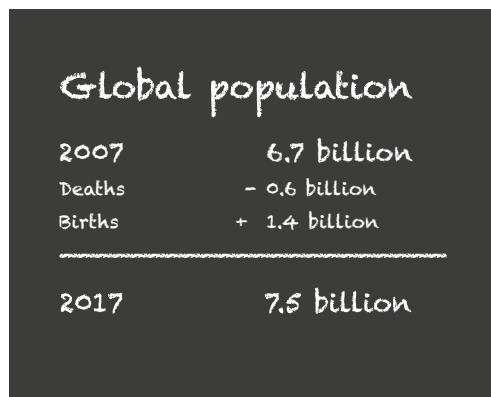
The populations of different countries remain very different in their structures. Low-income countries have the youngest populations – on average, half

of their population is aged less than 18.5 years. This number rises markedly to 28.9 years for middle-income countries and 39.7 years for high-income countries.

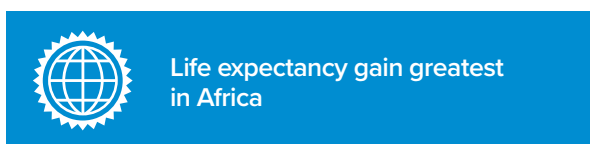
Human life expectancy has grown at a remarkable rate. The global average life expectancy at birth is now more than 71 years. With every passing year, it has been increasing by four months. In 2007, 15 countries had a life expectancy at birth of more than 80 years. By 2015, that number was 29 countries. Meanwhile, the number of countries with a life expectancy of less than 60 years fell from 36 to 22.



29 countries with life expectancy over 80 years in 2015 compared to 15 in 2007



Life expectancy gain has been greatest in the African region – five and a half more years in a period of just eight years. Zimbabwe, Malawi and Zambia climbed fastest (gaining 14 years, 9.8 years, and 9.2 years respectively). Women have longer life expectancy than men, by four and a half years. Almost every country has shown increased life expectancy over the last decade. War has created the exception. In the Syrian Arab Republic, life expectancy has fallen by 9.3 years.



There are two primary elements to life expectancy growth. The first, particularly in the richer countries of the world, is that older people are getting even older – with the major social, economic and healthcare consequences that are well known and too often seen negatively. The second element, particularly in the poorer countries of the world, is that life expectancy is growing because a much higher proportion of those born into this world are surviving childhood and living a full life. This too has major social and economic consequences, almost all very positive.

Globally, the important expansion in life expectancy over the last decade has been driven by a number of changes, including:

- The reduction in **under-5 mortality** rate of 32% between 2005 and 2015
- The fall in the **maternal mortality** ratio of 25% over the same period
- The **HIV mortality** rate drop of 50%
- The drop in the **malaria mortality** rate of 49%
- The reduction in the age-specific risk of **cardiovascular disease mortality** of 14%
- The reduction in the age-specific risk of **cancer mortality** of 11%
- The 7% drop in the **injury mortality** rate

The first four of these in particular were the areas of the three primary Millennium Development Goals related to health: to reduce child mortality, to improve maternal health, and to combat HIV, malaria, and other diseases. The question is often asked: what truly lies behind these major gains? Socioeconomic development has played a part. Changes that go along with this have included improved female (and male) education, and falling fertility rates. Effective health interventions delivered successfully on a greater scale (particularly anti-retroviral drugs, insecticide-impregnated bed nets, measles vaccines) have also made an impact. The balance between the impact of general development and the impact

of specific interventions in the field of health can be debated, but ultimately both have been important.

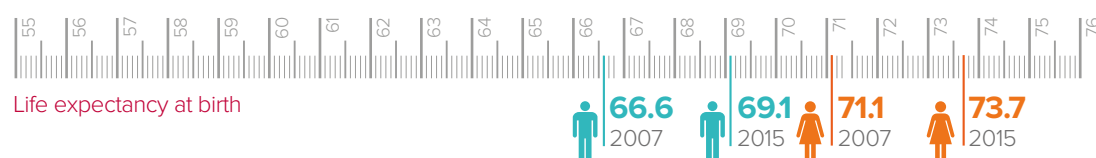
As childhood mortality has fallen, so the global health spotlight has fallen on the causes of premature death that come later in life. Over the last decade, progress has been made in preventing and treating noncommunicable disease. This has contributed to the improvements in life expectancy. This is often misunderstood, because noncommunicable disease is also causing more illness and death than it was a decade ago. These statements are not contradictory: at any given age, the mortality associated with noncommunicable disease is decreasing, hence the positive contribution to life expectancy. But this is outweighed by the increasing numbers of people in the higher age bands, creating a greater overall burden in the population. Noncommunicable disease is also becoming more important in relative terms; the gains made against it have been less impressive than those made against communicable disease.

The United Nations Millennium Development Goal era has ended. The Sustainable Development Goals are what matters now. *Good Health and Wellbeing*

is the third Sustainable Development Goal. Its 13 targets demand progress on maternal, childhood and communicable disease, as well as to: reduce premature mortality from non-communicable diseases by one third; halve the number of global deaths and injuries from road traffic accidents; reduce the number of deaths and illnesses from hazardous chemicals, as well as air, water and soil pollution and contamination; achieve universal health coverage; promote mental health and well-being; strengthen the prevention and treatment of substance abuse; and achieve universal access to sexual and reproductive healthcare services.

Good progress on the Sustainable Development Goals will bring further growth in life expectancy. Taken together, the targets imply an overarching goal of reducing premature mortality. When the Sustainable Development Goals were being developed, a number of prominent experts argued for such a goal to be made explicit and quantified, but it was not.

Maintaining progress on maternal, childhood and communicable disease is of a somewhat different nature than achieving progress in the areas newly



Life expectancy at birth

2015



2007

< 50 years	50-60 years	60-70 years	70-80 years	> 80 years
8 countries	31 countries	44 countries	85 countries	15 countries

set out. Achieving the first, essentially the unfinished Millennium Development Goals agenda, cries out for tackling inequity in the provision of the most basic health services. The leading diarrhoeal cause of death in the under-5s is rotavirus, and of death from pneumonia is pneumococcus. Both are vaccine-preventable. Water and sanitation, nutrition, and contraceptive access remain current and critical issues. To populations in richer countries, these seem absolutely the basics. But the basics are not yet available for all.

Very little is basic either about the areas of newer focus, primarily noncommunicable disease. At a macro- and policy-level, prevention needs political courage and multi-sectoral collaboration. The delivery of primary prevention through healthcare systems requires those systems to have a fair degree of sophistication; secondary prevention and other treatment requires this even more so.

During 2015, more people became refugees than at any time since the Second World War. There are now 21 million refugees. This has been a hugely adverse trend. The number of refugees has grown

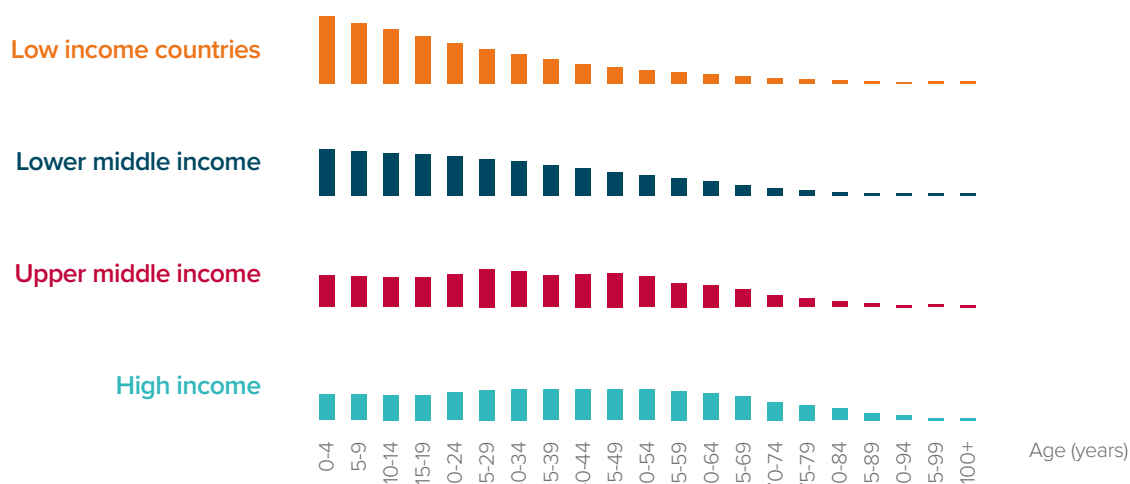
by more than 40% over just three years, largely from the Syrian Arab Republic. In addition, some 40 million people are now internally displaced. They no longer have a stable home but remain within the borders of their own country. Two-thirds of the world's refugees and half of its internally displaced people are in the Eastern Mediterranean region.

This forced displacement is a small fraction of the total number of migrants worldwide, which now stands at 244 million. The level of international migration has remained constant – at between three and four percent of the total global population – for several decades now.

Refugees and internally displaced persons can face extreme health threats. Their suffering includes: violence, torture, rape and sexual exploitation, slavery, and mental illness. The wider group of migrants also faces social economic and health disadvantage, though usually less severe (for example, barriers in access to services, as well the challenges of a new language and culture).

In 2008, the World Health Assembly put the issue of

Global population 2017



migrant health firmly on the agenda, with a resolution calling on both Member States and the WHO secretariat to act. The Director-General was asked *“to promote migrants’ health on the international health agenda, in collaboration with other relevant organisations”*. Over the subsequent years, the needs of migrants have become increasingly considered in WHO policies, plans and programmes, notably in approaches to HIV, tuberculosis, mothers and children, and reproductive health.



Migrant health on the international agenda

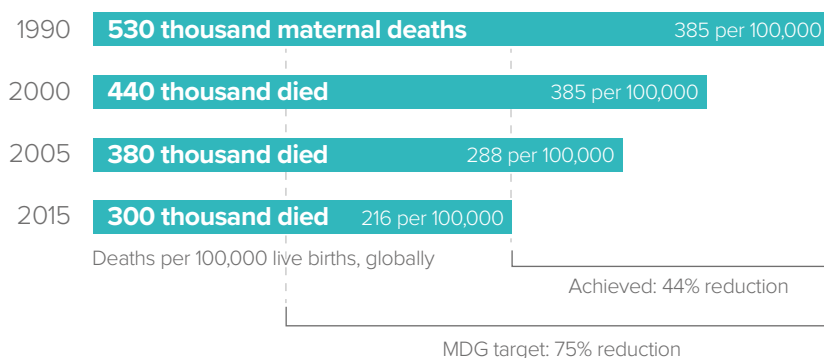
In 2016, with growing international attention to the plight of refugees, the United Nations General Assembly made a political declaration for refugees and migrants. WHO has started to develop a framework of priorities and guiding principles on the health of refugees and migrants, which the World Health Assembly in 2017 will consider further.

SAVING MOTHERS AND CHILDREN

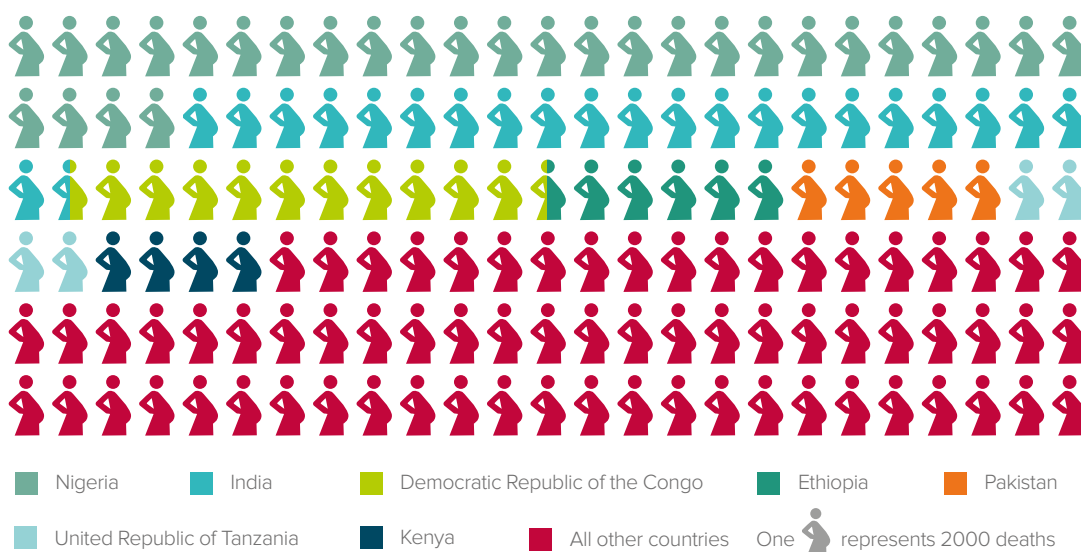
Two bleak events are without equal: the death of a baby, just months into a life that has barely begun; the death of a young woman, leaving a family without a mother. There is no starker reminder of inequity: that in some parts of the world, such events are rare to the point of being scandalous and newsworthy, whilst in others they are a common fact of life.

Speaking to the World Health Assembly as Director-General Elect in 2006, Dr Margaret Chan said:

“Let me be clear about the results that matter most. Reducing the burden of disease is important. Improving the strength of health systems is important. Reducing the threat of risk factors for disease is important. These are all vital. But what matters most to me is people. And two specific groups of people in particular. I want us to be judged by the impact we have on the health of the people of Africa, and the health of women.”



Where were the maternal deaths in 2015?



The stunning reductions in maternal and childhood mortality are rightly a source of pride and celebration for global health leaders and practitioners. They addressed the two most-cited health-related Millennium Development Goals: to reduce the maternal mortality ratio by three-quarters, and to reduce the under-5 mortality rate by two-thirds. These were ambitious goals, around which so many rallied. They were clear and specific. Neither was fully achieved, but both were transformative, showing that with concerted action, passion, and commitment major change is possible.



Maternal mortality ratio cut by 25% between 2005 and 2015

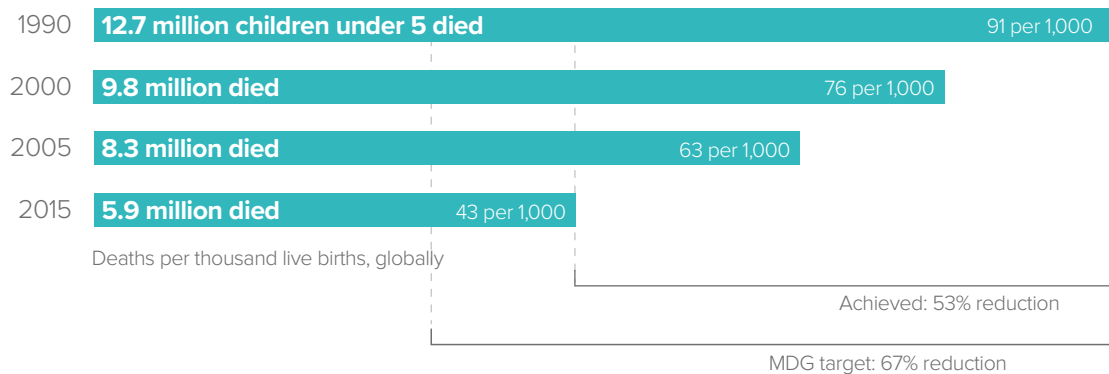
Many data used to estimate maternal and child mortality are drawn from surveys, not formal death registration systems. There is a time lag in their production and a degree of uncertainty in making statements about reductions. However, there is little doubt that the much-acclaimed major decreases are real. Year-on-year improvements were occurring in the 1990s, but they accelerated in the current Millennium. These declines in maternal mortality are

consistent with: the big reduction in HIV mortality; the widespread introduction of incentives to encourage facility-based delivery; greater access to antenatal care; the easier availability of antibiotics to treat puerperal sepsis; and decreasing fertility rates (including through better availability of contraceptives and family planning services). The improvement in childhood mortality has also been multifactorial. Nutritional improvements and more available vaccines (particularly measles) have been crucial. The reductions are not attributable to the health sector alone. Socioeconomic development has played a very significant role.



Under-5s mortality rate cut by a third between 2005 and 2015

Yet, the story of these gains in maternal and child health does not sit easily with the widely quoted statistics about inequity. This is enduring and even widening. The lifetime risk of maternal death in sub-Saharan Africa is 1 in 36; in high-income countries it is 1 in 4900. The risk of dying before the age of five averages just 1 in 400 in the ten best performing countries. It is 50 times worse – an average risk of



Worst 10: On average, one in 8 die before age 5



Angola



Chad



Somalia



Central African Republic



DR of the Congo



Mali



Sierra Leone



Benin



Niger



Nigeria

Best 10: On average, one in 400 die before age 5



Luxembourg



Iceland



Norway



Slovenia



Japan



Andorra



Singapore



Estonia



Cyprus



Finland

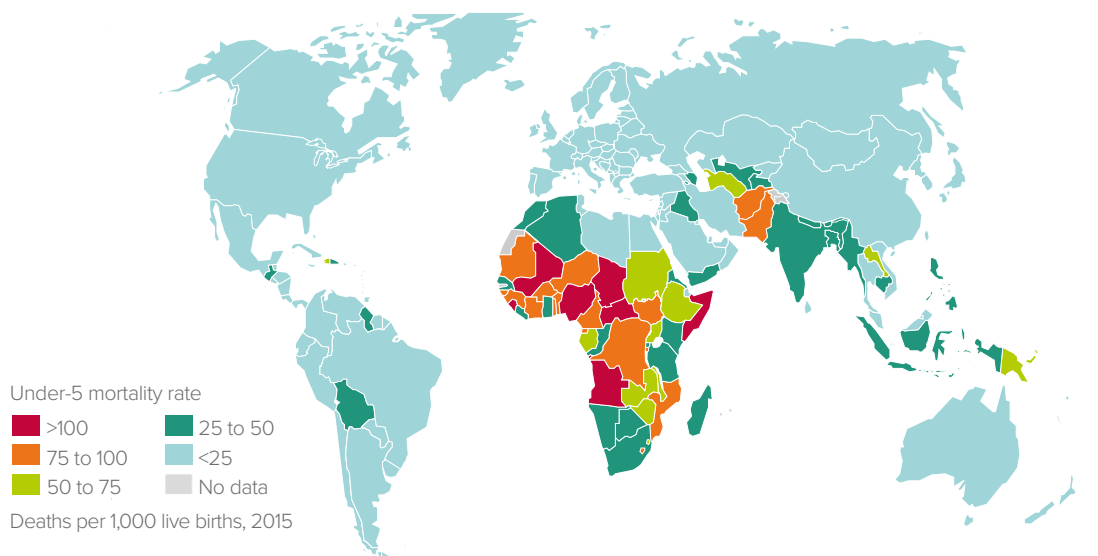
2015 data, pooled

1 in 8 – in the ten worst performers. In 24 countries, maternal mortality is still classed as high – most of them fragile states, conflict-affected areas, or both. Sadly, statistics like this are so familiar that they do not always create the shock that they should. They have to be viewed as unacceptable. They have to be writ large if the momentum that has saved so many lives is to be maintained.

On the surface, the Sustainable Development Goals give maternal and child mortality less prominence than the separate and specific Millennium Development Goals. But ambitious targets for both

measures are now embedded within the Sustainable Development Goals. Early opportunities to meet these harder targets are possible. There can be simple upgrades to those birth facilities that are so basic that they even lack water. Other solutions are more difficult to implement: for example, millions more health workers – including skilled birth attendants – are required.

Individual technical and social interventions have made a major difference and can continue to do so. There is a need, though, to move beyond individual initiatives, towards the more complex work of true



systems development. To address the dual issues of maternal and newborn mortality in a way that is truly sustainable and equitable means creating a foundation of universal antenatal care, skilled birth attendance in quality facilities, and ultimately reaching the point of comprehensive and quality integrated care. It also requires effective humanitarian responses where conditions are unstable. Conflict-related migration, health service disruption and food emergencies are all too evident in 2017, with young children their first victims.

Much of the progress to date has relied on socio-economic development. This must be sustained, which is not a given. Corruption, food insecurity and climate change are amongst the forces to be reckoned with.

It is critical to tackle deaths in the neonatal period (the first 28 days). Neonatal mortality has reduced less than other indices in early life, so neonatal deaths are a large and growing share of childhood mortality. In 2015, one million babies died on the day of their birth. More than 2.6 million died in the first month of life. The World Health Assembly's 2014 endorsement of *Every Newborn: An Action Plan To End Preventable*

Deaths gave prominence to this need. It asks every country to achieve a neonatal mortality rate of 12 or fewer deaths per 1,000 live births by 2030. It also aims to end preventable stillbirth. The 2030 target for each country is a rate of 12 per 1,000 live births on that measure too.

In the areas of maternal and child health, the Millennium Development Goals gave prominence to reducing mortality. This is good and essential but it has overshadowed other important needs and work: on early childhood development, for example. As mortality falls further, these other major issues need to come to the fore.

The World Health Organization has used its position in the wider United Nations family very effectively to address maternal and child health. The *Global Strategy for Women's and Children's Health* in 2010 was led by the United Nations Secretary-General, as was the associated *Every Woman Every Child* initiative. The strategy was later updated and expanded to include adolescents. The WHO secretariat has worked in close support, whilst the World Health Assembly has reviewed and endorsed the strategies. *The Global Strategy for Women's,*

Children's and Adolescent's Health covers the period 2016-2030. Its ambition goes beyond reducing mortality to envisage:

"A world in which every woman, child and adolescent in every setting realizes their rights to physical and mental health and well-being, has social and economic opportunities, and is able to participate fully in shaping prosperous and sustainable societies."

It sets out how objectives and targets, aligned with the Sustainable Development Goals, can be achieved through actions spanning country leadership and health system resilience, to community engagement, research and innovation.



**Every Woman Every Child
adopted by the United Nations**

WHO and the World Health Assembly were pivotal in the more recently launched United Nations *Decade of Action on Nutrition, 2016-2025*. Malnutrition remains a substantial contributor to childhood deaths and illness. It continues to hold children back from achieving their physical and cognitive potential. There remains a great deal to learn in this area.

The gains in maternal and child health have been golden achievements for global health – major, measurable improvements, of great human and economic importance. As with each of the other major developments of the last decade, the challenge now is to build on them.



MICROBES: OLD AND NEW

A series of goals to combat, conquer, or control communicable diseases has been high on the global health agenda over the last decade. The big killers – diseases like HIV, tuberculosis, and malaria – remain priorities on which major progress is being made. The threat of new and emerging diseases – and the risk of their global spread – is an ever-present concern. Particularly at times of natural disaster, famine, and conflict, diseases like typhoid and cholera can surge and cause havoc. Infective agents in tropical and subtropical areas of the world are longstanding sources of disability. They cause diseases that are seldom visible to the richer parts of the world but are devastating in their impact in the poorest parts of the countries and regions affected. Many common healthcare-associated infections can cause serious illness and costly hospital stays. Uncontrolled infection can lead to death and disability. A large-scale outbreak can even weaken national economies. Success

requires good planning, strengthening resilience, excellence in surveillance, effective prevention and control measures, as well as treatments reaching people in the right way and at the right time.

Over the last decade, there have been major successes in the fight against communicable diseases, although familiar challenges remain.

The HIV epidemic – and the world's response to it – has changed the face of global public health. At the turn of the Millennium, the epidemic was well underway, but the response to it was nascent. That changed, as a huge civil society movement was followed by widespread political commitment and the flow of very substantial funding.

Since its foundation in 2002, the Global Fund to Fight AIDS, Tuberculosis and Malaria has disbursed

\$16 billion to HIV programmes. Thanks to the Global Fund's donors and many others, the scale of antiretroviral use has exploded – 16 million people are now receiving treatment today, up from 0.7 million in 2000. The price of these drugs dropped dramatically through negotiation. Between 2005 and 2015, the HIV mortality rate fell by 50%, contributing significantly to reducing childhood and maternal mortality. The number of new cases fell by 18%.



HIV mortality cut in half between 2005 and 2015

In the second half of the 2000s, the treatment scale-up was well underway and the response started to grow in its sophistication. It was recognised that prevention was lagging behind treatment, and efforts were made to right this balance. The WHO Director-General's *Health In All Policies* approach saw HIV being considered in drug control policies, in the human rights dialogue, and in discussion of gender-related issues. Granular data were increasingly used to find and work with populations at the greatest need – particularly young and teenage girls in sub-Saharan Africa. There was rapid innovation, in both technology and service delivery models. The protective benefit of male circumcision was recognised, and particularly promoted in eastern and southern Africa.

Over recent years, there has also been a shift away from individual projects, and towards integrated national programs. Some are more developed than others, but the best offer a continuum of HIV services – risk reduction, testing, and treatment and care throughout the course of life and the disease.

WHO now recommends antiretroviral treatment from immediately after diagnosis. This benefits the individual treated, and substantially reduces the risk of transmission. It brings into sharp focus the estimate that half of all people who are infected with HIV are unaware of their infection.

In 2016, the World Health Assembly adopted a new global health sector strategy on HIV. This centres on strengthening HIV services within a framework of Universal Health Coverage. It highlights linkages to tuberculosis and hepatitis efforts in particular.

The sixth Millennium Development Goal included to “have halted by 2015 and begun to reverse the spread of HIV/AIDS”. This was achieved. The lessons are substantial: on the catalytic role that civil society can play; on co-creating health services with communities; and on rapid and massive scale-up. A number of the lessons, including the power of drug price negotiations, are now being applied to hepatitis. But, as the global strategy makes clear, HIV is far from over.

Global Fund disbursements, 2000-2015



Major gains 2005 to 2015

		Reduction in new cases rate	Reduction in death rate
HIV		18%	50%
Malaria		21%	49%
Tuberculosis		16%	25%

Malaria is a disease that affected the first human populations and was chronicled in records of Antiquity. When the final history of malaria is written, the past decade will be featured prominently. Mortality from malaria was cut almost in half between 2005 and 2015. This was achieved largely through the prevention of malaria cases, and through improved diagnosis and treatment of the disease.



**Malaria mortality cut by 49%
between 2005 and 2015**

More than six million deaths from malaria have been averted since the turn of the Millennium – mostly in children under five living in sub-Saharan Africa. The massive scale-up of prevention, diagnosis and treatment are responsible for saving these lives. First, and foremost, the increased coverage of insecticide-treated bed nets - since 2004, more than 900 million nets were distributed in sub-Saharan Africa alone. Second, the increased use of rapid diagnostic tests, which were instrumental in increasing the percentage of suspected malaria cases being tested in sub-Saharan Africa from 40% in 2010 to 76% in 2015. Third, the increased access and use of effective artemisinin-based combination therapies.

Based on modelling of parasite prevalence and case incidence, it is estimated that malaria interventions contributed to 70% of the reduction in malaria cases in sub-Saharan African between 2000 and 2015. Diagnosis and treatment interventions were crucially important in achieving this breakthrough in malaria control, but the preventive mainstay of bed nets has made the greatest impact, accounting for an estimated 50% of the decline. These tools were implemented through major scale-ups, made possible by large financial investments through the Global Fund and other bilateral donors in addition to domestic investments.

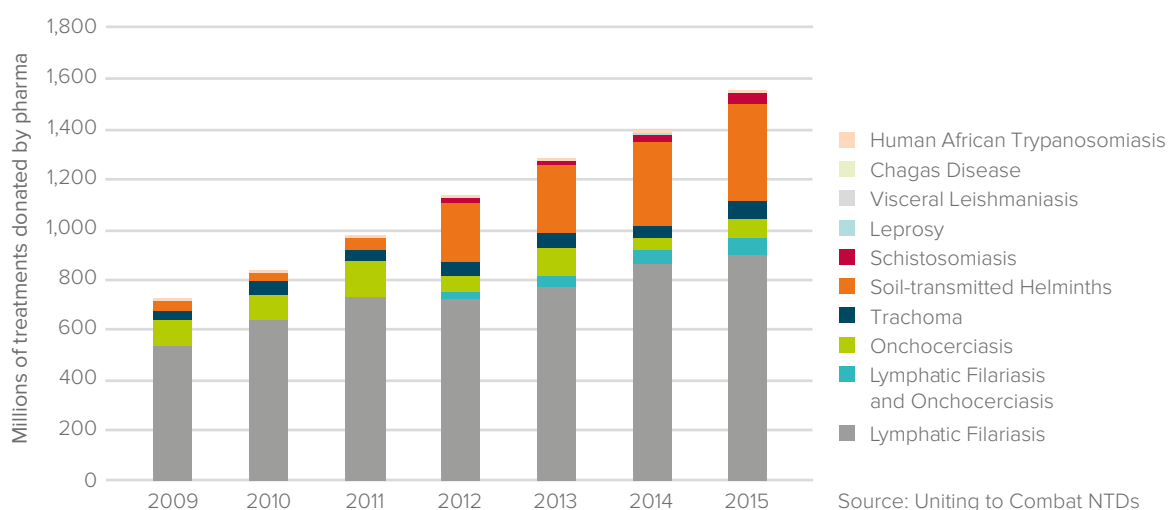


**900 million mosquito nets
distributed in Africa since 2004**

In addition to the notable declines in the number of malaria cases and deaths, countries are moving forward toward elimination. Between 2007-2016, six countries were certified free of malaria and an additional 13 countries reported zero local cases. Despite these achievements, malaria is still endemic in more than 90 countries, causing an estimated 200 million cases and 429 thousand deaths in 2015. WHO and partners have a clear vision for what should be achieved by 2030. This is articulated in the *Global Technical Strategy for Malaria 2016-2030*. Using 2015 as a baseline, the target is a 90% decrease in malaria incidence and mortality rates, and elimination in 35 more countries.

Over the last decade, progress has also been made against tuberculosis. The rates of new cases and deaths from tuberculosis were reduced by 16% and 25% respectively, between 2005 and 2015. Tuberculosis diagnosis and treatment saved an estimated 50 million lives between 2000 and 2015. These gains are meaningful, though less impressive than the gains achieved against both HIV and malaria. This was partly because big gains had already been made against tuberculosis in the preceding decade, which was not the case with HIV or malaria. Tuberculosis remains a leading cause of death amongst people infected with HIV, causing one-third of such deaths.

Six countries now account for 60% of all tuberculosis worldwide. India alone accounts for 27% of cases. A further 33% are from Indonesia, China, Nigeria, Pakistan and South Africa. Managing tuberculosis tests many different aspects of public health. Malnutrition is a key risk factor, particularly for mortality, as is tobacco smoking. Surveillance –



generally based on case notification – is a vital element. Diagnosis and treatment require healthcare systems to have a degree of sophistication.

In 2014, the World Health Assembly endorsed the *End TB Strategy*. The broad goal of ending the tuberculosis epidemic is included within the Sustainable Development Goals. By 2030, the *End TB Strategy* aims to achieve an 80% drop in incidence, a 90% reduction in mortality, and to ensure that no TB patients and their households face catastrophic costs as a result of TB disease. Its three pillars are: integrated patient-centered care and prevention; bold policies and supportive systems; and, intensified research and innovation.

Managing the tuberculosis epidemic is made more complex by antimicrobial resistance. Currently, fewer than half of all patients with multidrug-resistant tuberculosis are successfully treated. Just one-quarter of patients with extensively drug-resistant tuberculosis are successfully treated.

Tuberculosis has not had the same level of funding that HIV or malaria have had. It has also not had the same degree of high-level political attention – a deficit which a planned WHO Ministerial Conference on tuberculosis in November 2017 and a United Nations General Assembly meeting in 2018 should help to rectify.



2000-2015: 50 million TB deaths averted

A group of diseases characterized by their ability to cause long-term disability and physical disfigurement, as well as sometimes death, affect one billion people in 149 countries. This is an extraordinary 1 in 7 of all people on the planet. These 17 diseases are the neglected tropical diseases. They affect the poorest communities in the world. They are “neglected” because they are not visible to the affluent countries of the world, few pose a threat of transmission globally, and the affected people are impoverished – without power or voice in the world.

Addressing the World Health Assembly in May 2007, WHO Director-General, Dr Margaret Chan said:

“Last month, the first meeting of global partners for the neglected tropical diseases was held. This was a turning point. Prospects for reducing the burden of debilitating diseases for at least one billion people have never looked brighter.”

In 2012, WHO produced *Accelerating work to overcome the global impact of neglected tropical diseases: a roadmap for implementation*. This plan set targets for each disease and addressed key

mechanisms to achieve change, including how to deliver large-scale distribution and use of safe, single-dose medicines for diseases that can be treated in that way. Other measures included: vector and intermediate host control, public education, establishing safer water supplies and good sanitation, and addressing the risks in the human-animal interface. This very focused action plan was a big step forward.

Another key breakthrough was a meeting held in London, England in January 2012, called *Uniting to combat NTDs*. Leaders of global health organisations came together, with representatives of 13 pharmaceutical companies and some major donors. They were ready to commit to a highly specific goal to achieve the WHO Roadmap's targets for 10 neglected tropical diseases. They made the London Declaration.

The pharmaceutical companies' commitment to expand the supply of drugs was crucial. Bill Gates, Co-Chair of the Bill and Melinda Gates Foundation, said at the meeting:

"Maybe as the decade goes on, people will wonder if these should be called neglected diseases. Maybe as the milestones go on, we will call them just tropical diseases."



40 treatments for neglected tropical diseases every second in 2015



The largest public health-private partnership: pharma companies donated 1.5 billion tablets to treat neglected tropical diseases in 2015

2017 is the fifth anniversary of the *London Declaration*. Strong progress has been made overall, in relation to specific diseases, and in particular countries. In 2015, 1.2 billion treatments were given, equivalent to 40 every second. Since 2013, one country every year in the Americas has freed its population from

River Blindness. Only one small region is left and the Americas will be clear of the disease. Overall 330 million fewer people have required treatment in 2015, as compared to 2011. Guinea-worm is down to only 25 cases in the world.



Action on antimicrobial resistance on the agenda of the United Nations

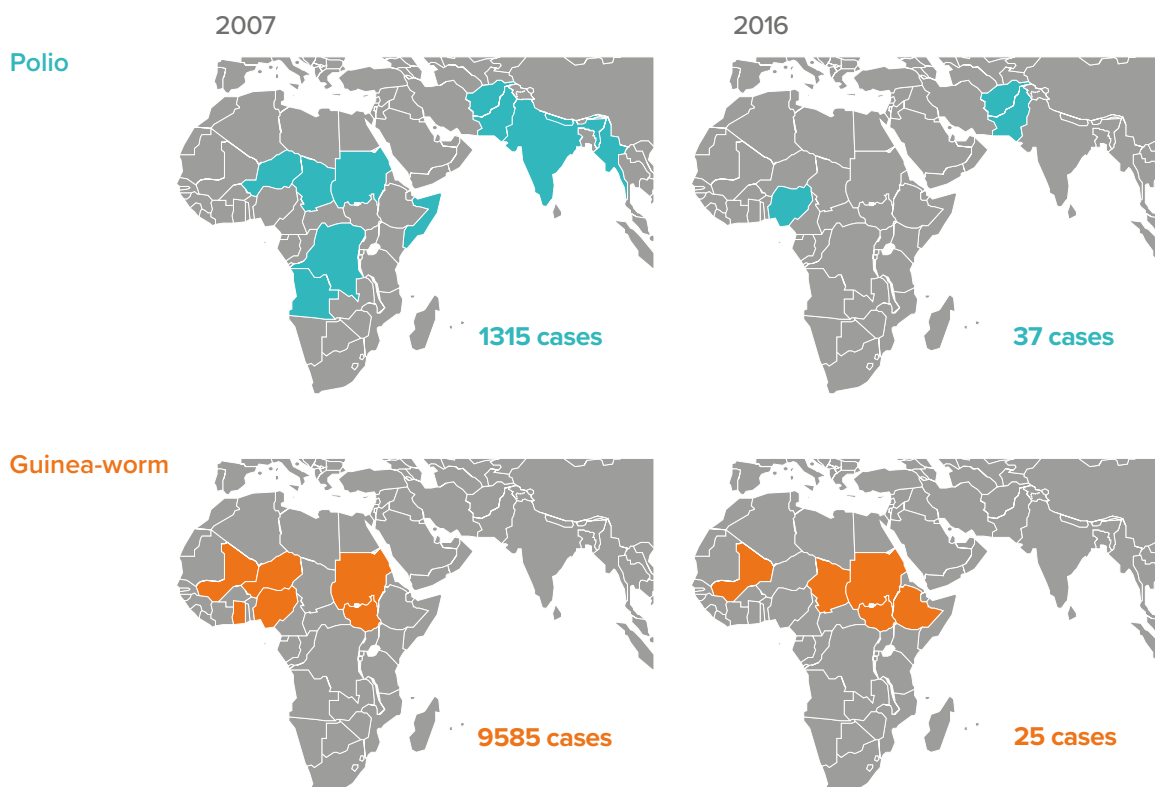
In the last decade, the world has had to think the unthinkable: that even with access to care and essential treatments, the growth of resistance of pathogens (bacteria, viruses, fungi, parasites) to a wide range of antimicrobial drugs may mean that, for millions of people around the world whose survival will depend on such drugs, time is running out.

In 2010, WHO found that resistance to new courses of anti-retroviral therapy in people who had HIV was 7% in low- and middle-income countries, and 10-20% in high-income countries. In 2014, there were an estimated 480,000 cases of multidrug-resistant tuberculosis (MDR-TB) worldwide, and 10% of these were extensively drug-resistant tuberculosis (XDR-TB). In 2016, resistance to first-line treatments to malaria was confirmed in five countries.

The global focus on antimicrobial resistance has increased greatly over the last decade.

In 2015, the World Health Assembly agreed a *Global Action Plan on Antimicrobial Resistance* that delineated five key areas of action:

- To improve awareness and understanding of antimicrobial resistance through effective communication, education and training
- To strengthen the knowledge and evidence base through surveillance and research
- To reduce the incidence of infection through effective sanitation, hygiene and infection



prevention measures

- To optimize the use of antimicrobial medicines in human and animal health
- To develop the economic case for sustainable investment that takes account of the needs of all countries and to increase investment in new medicines, diagnostic tools, vaccines and other interventions

In developing this blueprint, WHO worked closely with the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) in a *One Health* approach to promote best practices to avoid the emergence and spread of antibacterial resistance, including optimal use of antibiotics in both humans and animals.

In some parts of the world, 50% of all antimicrobial drug usage is in food-animals. In medical practice, underuse, overuse, and misuse of antibiotics are all problematic. This happens in a variety of ways, for example: poor access to full courses of required drugs so that a patient is only able to get two or three tablets;

unnecessary prescription of drugs for infections that would resolve spontaneously; over-the-counter availability so that the criteria for use are not medically determined; and use in just-in-case clinical situations.

Antimicrobial resistance has moved from being only a subject of professional and scientific interest to a global priority for political leaders. It is now also a matter of urgency for all national governments and ministries of health around the world. This has not happened by accident. It is the result, over the last decade, of sustained technical analysis, advocacy, influencing, and leadership. The United Kingdom, Sweden, the Netherlands and other governments have championed the need for action.

In September of 2016, Heads of State attending the United Nations General Assembly made a declaration of their political commitment to tackling antimicrobial resistance. *The Political Declaration of the High-Level Meeting of the UNGA on Antimicrobial Resistance* recognizes that prevention and control of infections in humans and animals are essential

to tackling antimicrobial resistance. The importance of affordability of, and access to, existing and new antibiotics and vaccines was also emphasized during the deliberations.

Heads of State pledged to:

- Strengthen surveillance and regulation on the use and sales of antimicrobial drugs for people and animals
- Encourage innovative approaches using alternatives to antimicrobials and new technologies for diagnosis and vaccines
- Raise awareness of citizens and health professionals on how to prevent drug resistant infections
- Foster increased international cooperation to advance national plans

Speaking after the historic commitment was made, WHO Director-General, Dr Margaret Chan said:

“Antimicrobial resistance poses a fundamental threat to human health, development, and security. The commitments made today must now be translated into swift, effective, lifesaving actions across the human, animal and environmental health sectors. We are running out of time.”

Important action need not always be big-picture and political. For example, researchers in the United Kingdom and China collaborated on research to understand resistance to the antibiotic *colistin*. The importance of this drug is two-fold. Firstly, it is heavily used as a growth promoter in animal feed, particularly pigs. It is cheap. Secondly, it is a last-line-of-defense antibiotic in treating seriously-ill patients whose infection is resistant to other antibiotics. This is typical of the story of antimicrobial resistance more generally: an antibiotic used in veterinary and agricultural practice in animals produces drug-resistant strains of the infective organism, and when people acquire similar infections they

face a situation in which the antibiotic will not work. The researchers found a resistance gene (MCR-1) in the *E. coli* bacterium in pigs. The gene also had the dangerous capability to transfer and confer resistance on other bacteria.

In response to this research, in November 2016, the Chinese Ministry of Agriculture banned the use of colistin as an animal feed additive. One of the lead researchers, Professor Jianzhong Shen, of Beijing Advanced Innovation Center for Food Nutrition and Human Health, said:

“The antibiotic usage in food animals is indeed becoming a global issue associated with food safety and public health. All countries in the world should use antibiotics in animals more prudently and rationally. On the basis of the evaluation of risk assessments of such antibiotics, the Chinese Government worked promptly to remove colistin in the list of feed additives for the purpose of growth promotion. We suggested that our Government take the AMR problem very seriously and in this instance they responded very efficiently to tackle this issue.”

These words sum up one of the key challenges in mitigating the threat, but also show the opportunity for decisive action. In complex problems like antimicrobial resistance, there are no easy solutions. That does not mean there are no solutions. Action needs top level leadership, coordination, and monitoring of action plans. It also needs partnership and cooperation across all sectors and constituencies: governments, health and medical, science, policy-making, industry, agriculture, food production, farming, pharmaceutical companies, and civil society.



6.4 billion people living in countries with national action plans for antimicrobial resistance

WHO oversight of progress at national level showed

WHO list released February 2017: Urgent antibiotics needed

Priority 1: Critical

Acinetobacter baumannii, carbapenem-resistant
Pseudomonas aeruginosa, carbapenem-resistant
Enterobacteriaceae, carbapenem-resistant, 3rd generation cephalosporin-resistant

Priority 2: High

Enterococcus faecium, vancomycin-resistant
Staphylococcus aureus, methicillin-resistant, vancomycin intermediate and resistant
Helicobacter pylori, clarithromycin-resistant
Campylobacter, fluoroquinolone-resistant
Salmonella spp., fluoroquinolone-resistant
Neisseria gonorrhoeae, 3rd generation cephalosporin-resistant, fluoroquinolone-resistant

Priority 3: Medium

Streptococcus pneumoniae, penicillin-non-susceptible
Haemophilus influenzae, ampicillin-resistant
Shigella spp., fluoroquinolone-resistant

that by April 2017, 69 countries had finalised or approved a National Action Plan on antimicrobial resistance. These countries are home to over 6.45 billion people, more than 90% of the world's population.

In February 2017, WHO published its first ever list of twelve antibiotic-resistant pathogens for which the development of new antibiotics is a priority. Tuberculosis was not included in the prioritization exercise, which focused on identifying previously unrecognised health threats. WHO reaffirmed that tuberculosis remains a top priority for the research and development of new antibiotics.



Guinea-worm eradication: down to 25 cases worldwide in 2016

Disease eradication is an attractive proposition. Once achieved, humanity is free of a pathogen for the rest of time. To date, the list of eradicated human pathogens remains at only one: smallpox. Polio and

guinea-worm are now tantalisingly close. WHO is a leader in both eradication efforts, alongside Member States and a formal set of partners that is slightly different for each.

Over the last decade, both polio and guinea-worm eradication efforts have advanced substantially. But in both, the annual rate of disease decline has slowed very significantly since the early days. As eradication nears, the challenges become greater. By definition, the last places in which the pathogen remains are the places in which elimination is the most difficult. So the slowing of progress is not a surprise, but the sheer scale of this effect was not fully anticipated. Placing a definite bet would be foolhardy, but eradication now seems imminent for both polio and guinea-worm. Both campaigns have major lessons to offer, whether or not the world decides to embark on further eradication goals.



THE ASCENDANCY OF NONCOMMUNICABLE DISEASES

In 2010, WHO published a *Status Report on Noncommunicable Diseases*. This made it clear that:

- Noncommunicable disease was the world's leading health problem, causing nearly two-thirds of all deaths. Most of the burden was due to cardiovascular disease, cancer, diabetes and chronic lung disease.
- This is not a rich countries' problem alone: 80% of the burden of noncommunicable disease was falling in low- and middle-income countries.
- The prominent causes were four behavioural risk factors, which were symptoms of economic transition, rapid urbanisation, and modern lifestyles. These were: tobacco use, unhealthy diet, insufficient physical activity and the harmful use of alcohol.

The report was action-oriented, spelling out a series of “best buys” for governments. These are interventions that are effective, feasible, and affordable, even in resource-constrained settings. Some are population-wide, such as smoke-free public places and reducing the salt content of food. Some are healthcare interventions – such as using aspirin in the treatment of myocardial infarction, and providing simple inhaler treatments for asthma.

WHO Director-General, Dr Margaret Chan, said in the foreword of the 2010 report:

“The warning remains stark. The epidemic already extends far beyond the capacity of lower-income countries to cope. In the absence of urgent action, the rising financial burden of these diseases will reach levels that are beyond the capacity of even the wealthiest countries in the world to manage.”



In September 2011, the United Nations General Assembly held a *High-Level Meeting on the Prevention and Control of Non-communicable Diseases*, and issued a Political Declaration acknowledging that:

“The global burden and threat of non-communicable diseases constitutes one of the major challenges for development in the twenty-first century, which undermines social and economic development throughout the world, and threatens the achievement of internationally agreed development goals. We recognize that non-communicable diseases are a threat to the economies of many Member States, and may lead to increasing inequalities between countries and populations”.



Goal set: 25% drop in NCD mortality by 2025

Eight months later, in May 2012, the World Health Assembly established a bold goal, known as ‘25 x 25’. It aimed, by 2025, to reduce by 25% the number of premature deaths caused by the main four noncommunicable diseases - cardiovascular disease, cancer, diabetes, and chronic respiratory disease.

A plan and monitoring framework followed: a *Global Action Plan for the Prevention and Control of Noncommunicable diseases 2013-2020*. The plan provides guidance on reducing harmful alcohol use, physical inactivity, salt intake, tobacco use, and raised blood pressure. It aims to halt the rise in diabetes and obesity; to increase the proportion of people receiving basic cardiovascular preventive care; and to boost the availability of basic technologies and medicines needed for treatment. The plan builds on its predecessor report, providing Member States with clear “best buy” policy options for achieving each target. Triennial status reports are planned, as are further High-Level meetings of the United Nations General Assembly.

In parallel with developing this overarching framework, there has been some strong – and some less strong – progress on a number of its key elements.

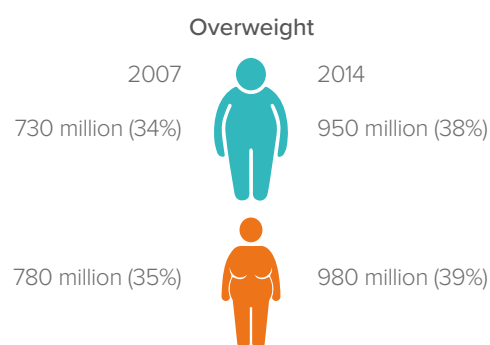
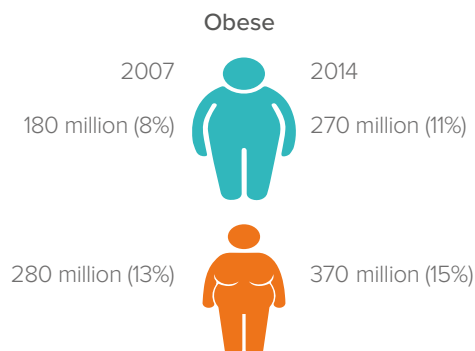
The WHO Framework Convention on Tobacco Control has been in place since 2005. WHO uses MPOWER, a set of six cost-effective and high impact measures to help countries implement the Convention’s key demand reduction provisions. Since 2007, the number of people protected by at least one MPOWER measure has tripled, but all countries can do more.



The prevalence of tobacco use has fallen a little, but one billion people still smoke – 80% of them in low- and middle-income countries. Six million people die each year as a result. The *2013-2020 Global Action Plan* includes a target of reducing tobacco use prevalence by 30%. This is well off-track. WHO is monitoring both MPOWER implementation and – where data and modelling allow – tobacco use prevalence. The *WHO Framework Convention on Tobacco Control* is a pioneering approach in global health and some hope that it is a model that could be applied to other elements of noncommunicable disease.

WHO issued *Global recommendations on physical activity for health* in 2010, citing that one in four adults and four in five adolescents were not meeting the necessary standards. The strength of physical inactivity as a risk factor has become more widely recognised during the last decade. It is established in its own right, not just on the causal pathway to overweight and obesity.

WHO has shown high profile leadership on diet and health over the last decade. The statement on sugar resounded very powerfully. In March 2015, WHO strongly recommended that free sugars should account for less than 10% of people's total energy intake, and that reducing to 5% would bring additional health benefit. This was underpinned by technical analysis that examined free sugar's relationship to both weight gain and dental caries. The guideline



provided policy options for countries. It particularly highlighted sugar-sweetened beverages, pointing to the research links to obesity. The announcement of the guideline drew extensive media coverage, and prompted substantial engagement with the food and beverage industries at both international and national levels. A year later, the *WHO Commission on Ending Childhood Obesity* released its report. This included an explicit recommendation that Member States “implement an effective tax on sugar-sweetened beverages”.



New sugar intake guidelines for children and adults

The *Commission on Ending Childhood Obesity* was launched in 2014, at the Director-General's initiative. The alarming rise in childhood obesity prevalence provided a clear epidemiological rationale - and new evidence was emerging on the epigenetic basis of obesity, meriting close attention.

The Commissioners were a broad group. Alongside senior public health practitioners were scientists, economists, a senior industry executive, a well-known athlete, and others. The food and beverage industry engaged closely in the Commission's work, with senior representatives meeting the Director-General on several occasions. The Commission made its report to the World Health Assembly in 2016, and an implementation plan is due at the World Health Assembly in May 2017. Its report made recommendations to Member States in six areas:

- Promoting healthy food intake, and reducing the intake of unhealthy food and sugar-sweetened beverages
- Promoting physical activity and reducing sedentary behaviour
- Integrating measures to reduce the risk of childhood obesity into pre-conception and pregnancy care
- Supporting diet and physical activity in early childhood
- Promoting healthy school environments, physical activity, and health and nutrition literacy amongst school-age children and adolescents
- Managing the weight of children and young people who are obese

The *Commission on Ending Childhood Obesity* was also important because it showed the complexity of tackling obesity, the crucial role of multiple sectors, and the vital role of industry. Each of these strands is a valuable part of the approach that will need to continue over the coming years, across the whole field of noncommunicable disease.



Commission on ending childhood obesity provides global action plan

Other elements of noncommunicable disease have not been so prominently covered. The burden of

these diseases falls more heavily on those in lower socioeconomic groups. Many of the risk factors are more common in these groups; the incidence and impact of many noncommunicable diseases is greater; and the costs of care can be catastrophic for the poor. Some have argued that a goal to directly address the socioeconomic determinants should have been included in the 2013-20 Action Plan.

In 2013, the World Health Assembly endorsed a 2013-2020 *Mental Health Action Plan* – the first such plan. This focuses not only on tackling mental disorder, but on positively improving mental health. It established a series of targets and recommended actions for Member States, and for bodies including WHO.

WHO has had a *Mental Health Gap Action Programme* in place since 2008, launched by the Director-General. This works to improve the care for a people with a prioritised set of conditions (depression, dementia, psychoses, epilepsy, and others) in 90 countries, primarily in resource-poor settings. WHO initiatives including the current *Depression: Let's Talk* campaign, have brought important mental health issues to greater prominence. On World Mental Health Day 2012, WHO partnered with writer and illustrator Matthew Johnstone, releasing a short video "*I had a black dog, his name was depression*". The aim was to raise awareness, and to encourage people with depression to take effective actions to help tame their own black dog. The video has so far been viewed 7.5 million times on YouTube.

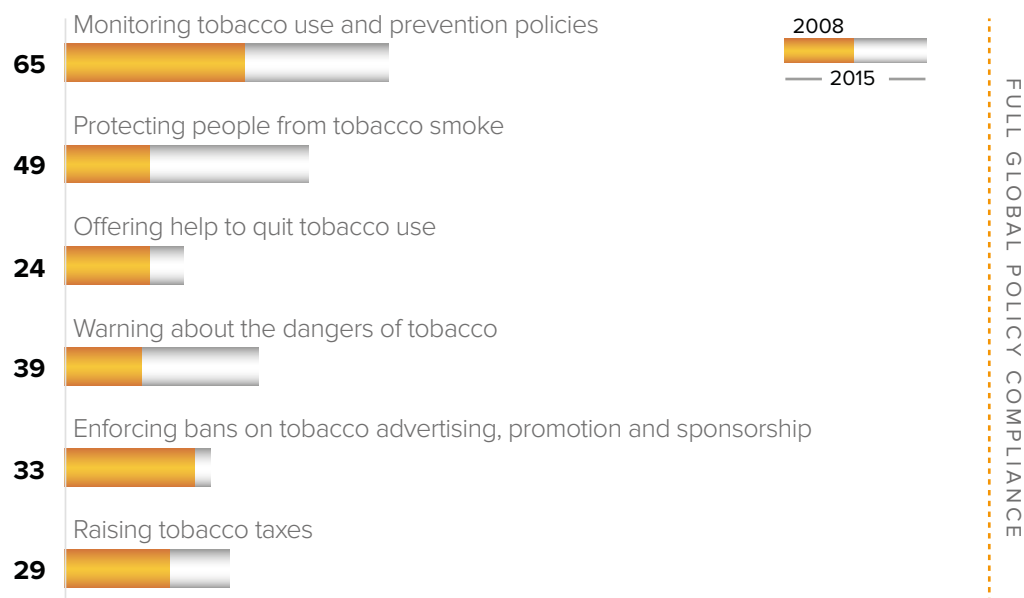
WHO has estimated that 4.4% of the world's population is suffering from depression (more than 300 million people), 3.8% from anxiety, and that there are nearly 800,000 suicides every year. Mental health makes an appearance in the targets of the Sustainable Development Goals. It is to be hoped that, a decade from now, mental health will have moved more firmly into the spotlight.

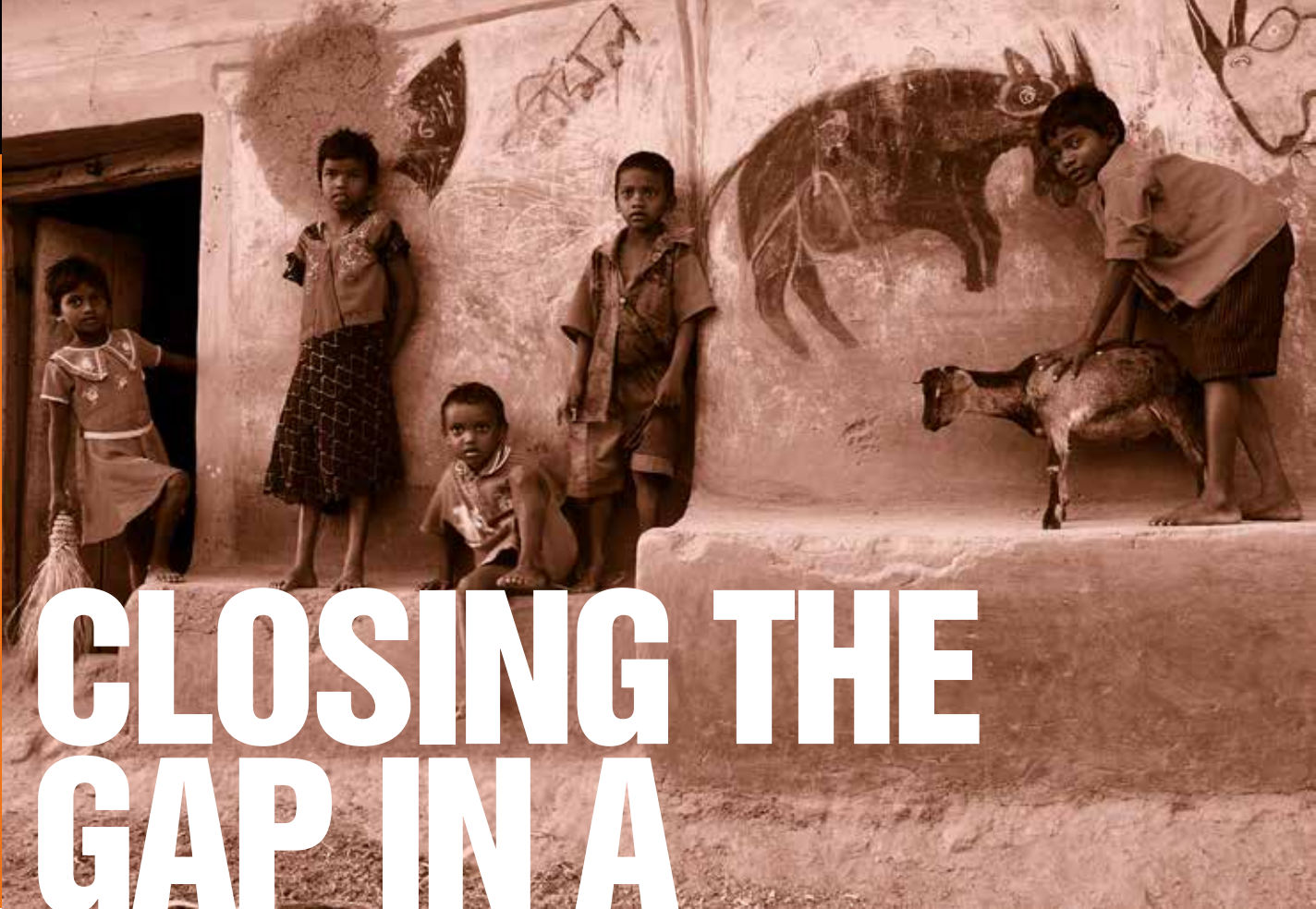
Over the last five years, the important issue of dementia has come to greater prominence. In May 2017, the World Health Assembly will review a *Dementia Action Plan*. In 2013, the G8 held a special summit on dementia. Speaking at that event, WHO Director-General Dr Margaret Chan said:

“Dementia is a costly and heart-breaking epidemic with an immense impact, medically, psychologically, emotionally, and financially. I can think of no other condition that has such a profound effect on loss of function, loss of independence, and the need for care. I can think of no other condition that places such a heavy burden on society, families, communities, and economies. I can think of no other condition where innovation, including breakthrough discoveries, is so badly needed.”

Tackling noncommunicable disease is complex. The complexity is increasingly being embraced, and this must continue and grow. Tackling noncommunicable disease involves engaging far beyond the sphere of health and healthcare, to tackle the causes at their root. It involves dealing with vested interests – working productively with industry if possible, and drawing red lines if not. It involves being criticised as a Nanny – a hazard that communicable disease programmes do not have to bear. It involves sustained political will. And it requires building health systems that can deliver an increasingly sophisticated spectrum of prevention, treatment and care. It is not easy – but it is central to the future of public health globally.

Number of countries fully implementing tobacco policy





CLOSING THE GAP IN A GENERATION

The Commission on Social Determinants of Health led by British-Australian epidemiologist, Sir Michael Marmot, presented its report to the Director-General of WHO in the summer of 2008. In welcoming the report, Dr Chan said: “*Health systems will not naturally gravitate towards equity*” and called for “*Unprecedented leadership to compel all actors, including those beyond the health sector to examine their impact on health.*”

WHO has had a longstanding commitment to health equity, but in presenting to the world the work of its Commission, *Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health*, it fired the starting gun on a deeper and more fundamental approach linking equity, social justice, poverty and health, driven by some of the compelling inequalities spelled out in the report at the time of its launch:

- Life expectancy for Indigenous Australian males shorter by 17 years than all other Australian males
- Maternal mortality 3–4 times higher among the poor than among the rich in Indonesia
- Child mortality in the slums of Nairobi is 2.5 times higher than in other parts of the city
- A baby born to a Bolivian mother with no education had a greater than 10% chance of dying in the first year, while one born to a woman with at least secondary education had less than a 0.4% chance
- In Uganda, the death rate of children under 5 years in the richest fifth of households was 106 per 1000 live births but in the poorest fifth of households in Uganda it was even worse – 192 deaths per 1000 live births (that was nearly a fifth of all babies born alive to the poorest households destined to die before they reach their fifth birthday)

Despite the stark statistical picture that the Commission revealed, its report was not all bad news. There were many examples where targeted action, local and country innovation, and committed leadership were making a difference. The examples highlighted in the report included: a comprehensive approach to early childhood development in poor Jamaican communities; the establishment of universal child development services in Cuba; and, the expansion of pre-primary education for socially disadvantaged children in Chile.

The Commission on Social Determinants of Health set out three guiding principles through which to organize programmes of action to address the challenges and needs that it identified:

- Improve the conditions of daily life – the circumstances in which people are born, grow, live, work, and age
- Tackle the inequitable distribution of power, money, and resources – the structural drivers of those conditions of daily life – globally, nationally, and locally
- Measure the problem, evaluate action, expand the knowledge base, develop a workforce that is trained in the social determinants of health, and raise public awareness about the social determinants of health

WHO had previously taken high-level strategic positions on the fundamental causes of poor health. For example, Director-General Brundtland in the *1999 World Health Report* estimated that around half the mortality reduction in the 30 years since 1960 in low-income and middle-income countries had been due to two main underlying influences: income and education. Nevertheless, much of the emphasis on solutions in the report was on strengthening health systems rather than broader-based initiatives in other sectors.

In 2001, the *Commission on Macroeconomics and Health*, led by Professor Jeffrey Sachs, focused on the potential benefits to health of investment in areas such as education, sanitation, and water, and explored the relevance of poverty and the gains to health through tackling it.

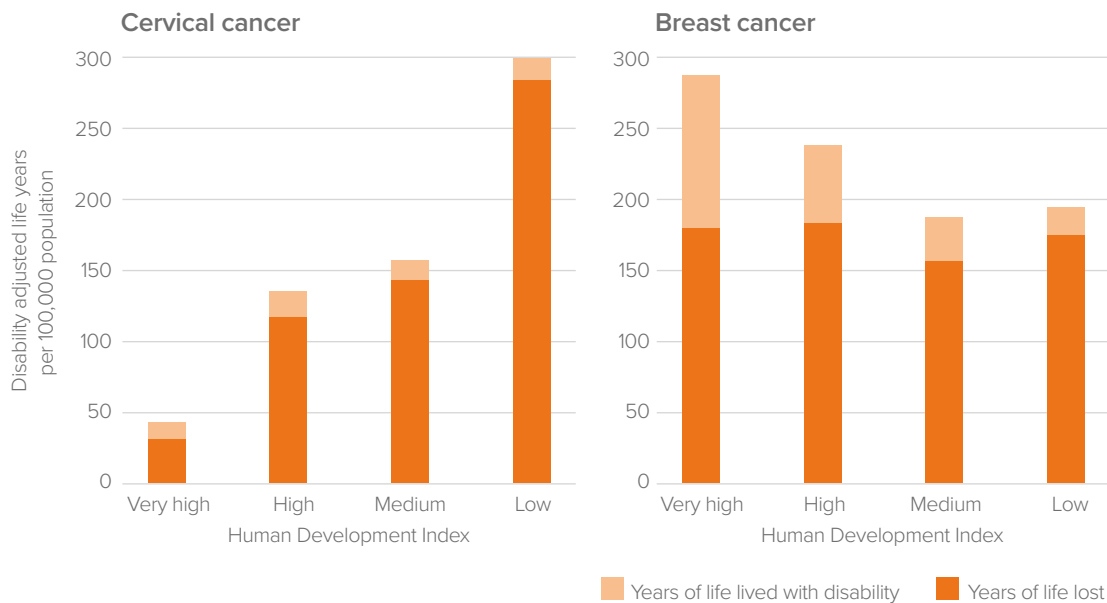
The *Commission on Social Determinants of Health* has been one of the most important policy initiatives that WHO has launched in the last decade. It has cascaded through the regional and country networks, not just as a technical reminder of the importance of health equity but as a transformative approach to thinking about the meaning of “health” itself, and how, in practical terms, to really address the root causes of poor health and social and economic disadvantage.

Traditionally, although the global health community has recognized the wider and deeper influences on health in a diagnostic sense, action has tended to concentrate on the established risk factors (e.g. smoking, physical inactivity, obesity, high blood pressure, unhealthy nutrition, excess alcohol intake). Social determinants have not been viewed as modifiable in the same way that these established risk factors are. However, the case studies in the Commission’s report, and the way in which many of WHO’s regions as well as national governments have constructed their own Marmot-style reviews and plans, has created a sense that practical action is not just feasible, not just necessary, but almost a moral imperative.



A Commission on Social Determinants of Health cascading action through regions and countries

Opposing trends: the relationship between economic development and disease is not always straightforward



In 2011, the Brazil government and WHO convened an important meeting of Heads of Government, Ministers and government representatives, which issued the *Rio Political Declaration on Social Determinants of Health*. This included the clause:

“We reaffirm that health inequities within and between countries are politically, socially and economically unacceptable, as well as unfair and largely avoidable, and that the promotion of health equity is essential to sustainable development and to a better quality of life and well-being for all, which in turn can contribute to peace and security”.

It is of particular importance that the orientation of the meeting was “political”. This is where the commitment, ideas, and will needs to come from if the “causes of the causes” of ill health, premature mortality, and disability are to be really acted upon.

The fact that health is often determined in other sectors has become a recurrent topic in global policy fora. It was clearly understood and expressed by the Heads of Government at this meeting. The Rio Political Declaration established five action areas, to:

1. adopt better governance for health and development
2. promote participation in policy-making and implementation
3. further reorient the health sector towards reducing health inequities
4. strengthen global governance and collaboration
5. monitor progress and increase accountability

Continuing to have a laser focus on the social determinants of health is one of the most important roles of WHO in the future. This is not simply to ensure that the many inequities in health are matched

Figure source: Soerjomataram I, Lortet-Tieulent J, Parkin DM, et al. Global burden of cancer in 2008: a systematic analysis of disability-adjusted life-years in 12 world regions. *Lancet* 2012; 380: 1840–50

with practical programmes of action but to act as a custodian of a philosophy of public health that is broad-based, inter-disciplinary, and multi-sectoral.

The last decade has brought a broadening awareness of the social determinants of health, and the programs of action needed to address them. This will be critical in the era of sustainable development. The Sustainable Development Goals' promise of "leaving no-one behind" means that health is protected and promoted to fulfil potential in life, but also that targeting adverse social circumstances will enable attainment of the best possible health.



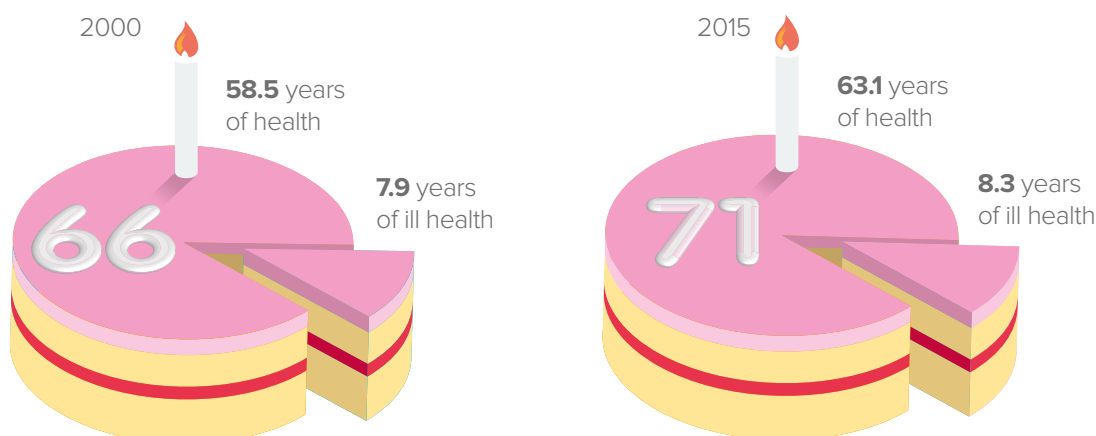
HEALTHY AGEING

The numerical challenges of population ageing are formidable. In 40 years' time, 80% of the world's over-60s will be in low- and middle-income countries. They will number more than the entire population of high-income countries combined. In the same time frame, there will be 330 million people over 60 years in China and 200 million in India, and a quarter of the population of Latin America and the Caribbean will also be in this age group.

With the rise in life expectancy, attention in many parts of the world is increasingly being focused on the question of healthy life expectancy. This varies greatly between and within countries. It is often assumed that because death rates are falling, levels of disease and disability are coming down too. Some have asserted that this is not the case, saying that those countries that have experienced gains in life expectancy will find that the extra years are marked

by ill-health and disability. The reality is that no one really knows for certain, though figures are regularly quoted. Routinely available information on healthy life expectancy is scarce and very inadequate.

Discussing the quality of information may seem a technical argument. It is not. It will not be possible to plan properly for the impact of population ageing, nor evaluate public health programmes aimed at healthy ageing, without comprehensive valid measurement of health and functioning in older populations. There is also disagreement amongst experts on the choice of methods. For example, measures based on the presence, or absence, of disease do not take account of the fact that some older people experience much more disability from them than others. Also, the presence of multi-morbidity complicates the construction of metrics. Simple measures of functioning in which older people



Expectancy at birth; totals rounded 'Years of health' refers to equivalent years of full health. 'Years of ill-health' refers to equivalent years of full health lost due to disability and ill-health.

are asked about or assessed for their ability to carry out activities of daily living, are easily understood. However, it can be difficult to determine whether the deficit is the individual or the environmental circumstances. For instance, someone might declare that they have difficulty in shopping for food because their walking is impaired or because there are no neighbourhood shops, so that the problem is access rather than loss of capacity.

To address these uncertainties in characterizing health in older age, WHO has adopted the concept of functional ability:

"The health-related attributes that enable people to be and to do what they have reason to value; it is made up of the intrinsic capacity of the individual, relevant environmental characteristics and the interactions between the individual and these characteristics."

As people, and populations, age, the proportion of years spent in a state of health and vitality is of major significance. It has implications for quality of life of the individual, the level of social support required, and for families. Most importantly, it has a great relevance to

the need and demand for healthcare.

Many discussions about the future of healthcare start gloomily with a consideration of the growing numbers of old and very old people, with multiple chronic diseases, who are spoken of as a burden. This is misleading. The facts do not bear out assumptions that older people are largely dependent and unproductive. On a world view, and also within countries and regions, this population is hugely diverse in its state of health, its outlook and attitudes, as well as its relationship with work, family life and civil society more generally. Older people become involved in the societies that they live in through a wide range of forms of participation, including as: mentors, caregivers, artists, consumers, innovators, entrepreneurs and members of the workforce. These roles can themselves promote older people's health and well-being.

Low- and middle-income countries have become used to being characterized by their youthful populations, but these are the very groups who will be ageing. If present levels of resources and disease patterns persist, higher levels of poverty will make ageing in low- and middle-income countries more complex. So too will: weak health systems; the

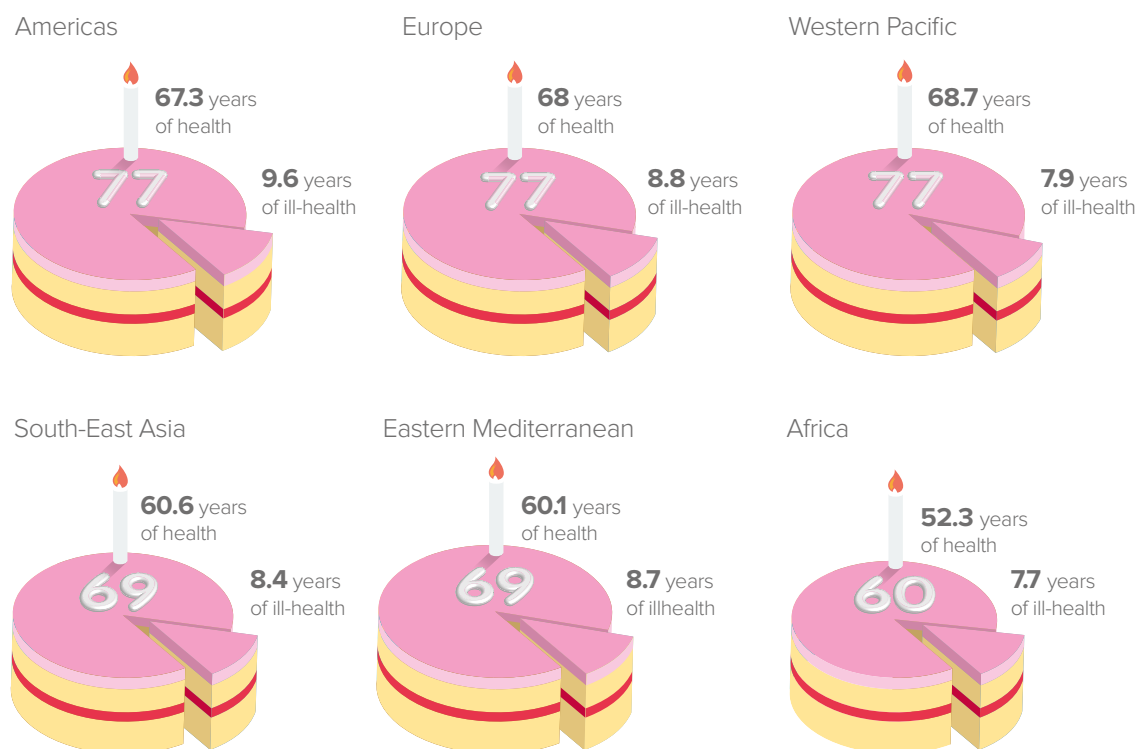
greater threat of serious communicable and parasitic diseases; vulnerability to natural disasters; extreme weather events; and regional conflicts that displace populations. Older people will be at additional jeopardy because of these influences.

The policy response to these challenges has developed slowly over the past decade as heads of state and health ministers have realized that the rapid population ageing that their countries are experiencing will have a major impact on all aspects of their societies. In 2015, the Director-General of WHO contributed to a publication (*Facing the facts: the truth about ageing and development*) by the NGO Help Age International, along with Mary Robinson (one of The Elders) and other leaders and experts. At the time of the report's launch, the

Director-General said:

"The health needs of the world's population are being transformed by global ageing yet governments, development and health practitioners have been slow to react. The increase in the number of older people is one of the success stories of international development and how we respond to this reality will be one of the keys to prosperity in the future."

WHO produced a landmark document in 2015, the *World Report on Ageing and Health*. The report set out a vision for healthy ageing, defined as: *"the process of developing and maintaining the functional ability that enables well-being in older age"*. The *World Report on Ageing and Health* expressed key priorities:



Expectancy at birth; totals rounded ; 2015 data 'Years of health' refers to equivalent years of full health. 'Years of ill-health' refers to equivalent years of full health lost due to disability and ill-health.

- aligning health systems with the needs of the older populations they now serve
- developing systems for providing long-term care
- creating age-friendly environments
- improving measurement, monitoring and understanding.

These priorities were picked up again in another important action when the World Health Assembly in 2016 was asked to adopt *The Global Strategy and Action Plan on Ageing and Health*. This aimed to gain Member States' commitment and political leadership to take practical steps and engage multi-sector partners to implement the goal and priorities of the earlier World Report.



Global strategy on Ageing and Health: by 2050, 80% of the world's over-60s will be in low- and middle-income countries

The *World Report* and the *Global Strategy and Action Plan* set an ambitious but exciting agenda to create a decade of healthy ageing in which the growth in life expectancy is treated as an opportunity and not a threat:

"If people are experiencing these extra years in good health and live in a supportive environment, their ability to do the things they value will have few limits."





GOOD HEALTH SERVICES FOR ALL

Since its foundation in the second half of the 20th century, through to the turn of the Millennium, WHO's commitment to health services was based on a development approach that aligned with donor governments' and foundations' drive to strengthen health systems. There was also particular emphasis on primary care, notably with the touchstone *Alma Ata Declaration* of 1978, that saw the advancement of primary care as the most important route to achieving the goals of *Health for All*.

The goal of strengthening health systems is still an important one, but has not always been clear and specific enough to guide action and investment. Some speak of it in more critical terms as a development "mantra" that has led to untargeted donor aid with few demonstrable gains. Whilst this is unfair, there is no doubt that the introduction of the more focused, citizen-oriented, and rights-based goal

of Universal Health Coverage (defined as "people having access to the health care they need without suffering financial hardship") has elevated concern about the inadequacy of health systems to a much higher level of prominence.

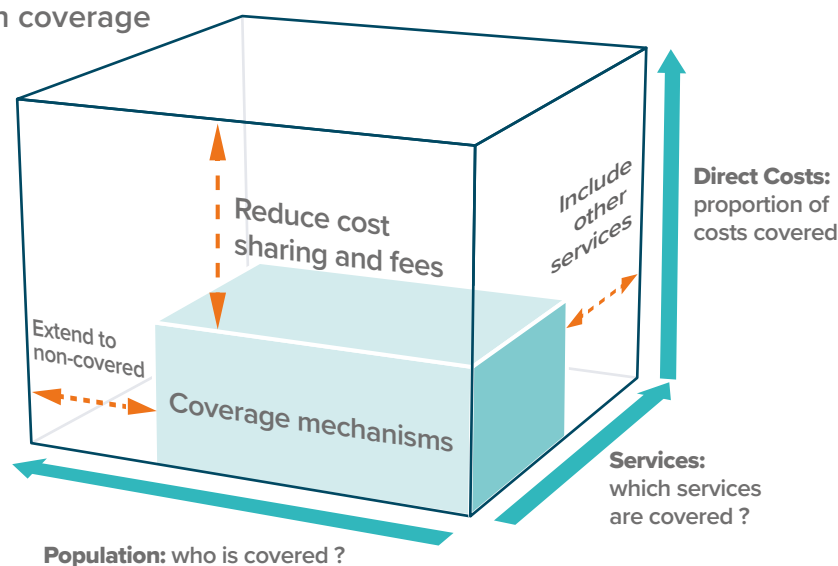


Universal health coverage as an overarching goal

Speaking at the Ministerial meeting on Universal Health Coverage in Singapore in February 2015, WHO Director-General Dr Margaret Chan said:

"Universal health coverage is one of the most powerful social equalizers among all policy options. It is the ultimate expression of fairness. If public health has something that can help our troubled, out-of-balance world, it is this: growing evidence that well-

Towards universal health coverage



functioning and inclusive health systems contribute to social cohesion, equity, and stability”.

Particularly over the last five years, WHO has worked with other global bodies, heads of state, and health ministers to put the achievement of Universal Health Coverage high on everyone’s agenda. The United Nations General Assembly has called upon Member States to *“urgently and significantly scale-up efforts to accelerate the transition towards universal access to affordable and quality healthcare services.”*

The World Bank has set out three key aims of Universal Health Coverage:

- To achieve better health and development outcomes
- To help prevent people from falling into poverty due to illness
- To give people the opportunity to lead healthier, more productive lives.

The inclusion of a target in the Sustainable Development Goals (SDGs) framework is of vital importance. SDG 3, target 8 is:

“To achieve universal health coverage, including financial risk protection, access to quality essential health care services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all.”

WHO’s leadership has also engaged other key constituencies and stakeholders, importantly civil society. For example, after widespread consultation with its members, the International Association of Patient Organisations (IAPO) has developed a set of principles governing universal access to health coverage based on:

- Accessibility
- Patient-centredness and equity
- Choice and empowerment
- Quality
- Partnership and collaboration
- Sustainability and value
- Accountability and transparency

Achieving universal health coverage has multiple dimensions. WHO has done strong work on many fronts – most notably in the areas of financing, governance and alignment.

It is clear from the discussions on Universal Health Coverage that the offer of health services to populations around the world should not just be of *any* health services, but those based on strong foundations of safety and good quality. This is an area in which WHO has done much ground-breaking work over the last decade. WHO's focus on the quality of health services started with a comprehensive global programme in patient safety, spearheaded by two global patient safety challenges.

The first Global Patient Safety Challenge was aimed at engaging the world to reduce the level of healthcare infection. The aim of the Challenge was highly visible and easily understood by politicians, health professionals and civil society. It was relevant to all countries: rich, poor, and emerging economies. Everyone had a vested interest in its success because anyone could need treatment in a health facility and could therefore become the victim of harm by acquiring an infection.

In driving forward *Clean Care is Safer Care*, a wide range of supporting activities and campaigns was implemented. The idea of this Challenge generated huge interest and enthusiasm across all six WHO regions. As ministers signed pledges of commitment to the Challenge in country and regional launches and events, from a small start, the commitments grew to cover more than 85% of the world's population.

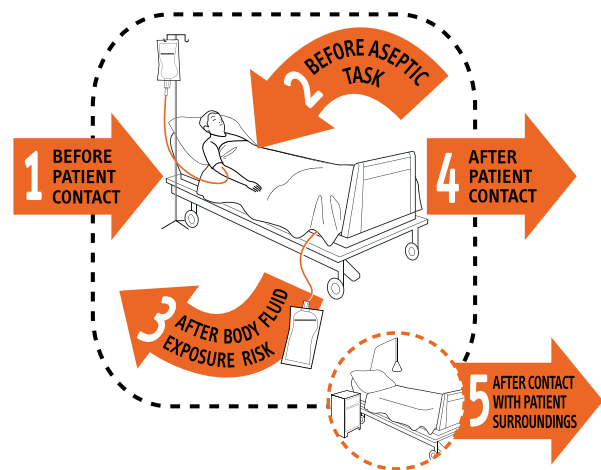


A Global Patient Safety Challenge on hand hygiene covering 85% of the world's population

The WHO hand hygiene global campaign (*SAVE LIVES: Clean Your Hands*), launched in 2009, has been particularly successful. Before the Challenge, alcohol-based hand rubs (hand sanitizers) were not commonplace in hospitals around the world. The core message was that the lack of consistent, immediate, access to a sink equipped with soap

and single-use towels (high-income countries) and/or the unavailability of clean water (many low-income countries) put patients at risk. The evidence of higher efficacy, effectiveness, and skin tolerability of alcohol-based hand rubs made them the method of choice to assure hand hygiene. WHO made alcohol-based hand rubs more affordable to the poorest hospitals of the world by ensuring that the University Hospital of Geneva formulation became available with no patent restriction for local manufacture.

WHO campaign: Five moments for hand hygiene



Overall, the first Challenge represented a proven change model that mobilised the world around infection prevention through: a) raising awareness about the burden of the problem to engage stakeholders; b) an approach to engage nations through demonstrable commitment; and, c) the availability of evidence-based guidance and implementation tools to drive improvement.

A second Global Patient Safety Challenge recognised the relatively high burden of disease arising from unsafe surgical care. *Safe Surgery Saves Lives* created a surgical checklist that was piloted, evaluated and promoted for use globally. Early studies of its use showed that the checklist reduced morbidity and mortality associated with surgery. Major professional bodies across the world endorsed it. It is

Over 400 million people worldwide lack access to essential health services



in widespread use in hospitals in many countries and, increasingly, it is seen as essential if the key risks of surgery are to be avoided.



A surgical safety checklist in hospitals throughout the world

The checklist concept was developed further with the creation of the *WHO Safe Childbirth Checklist*, which focuses on reducing risk and adverse outcomes related to childbirth for both mothers and babies. The Checklist supports the delivery of essential maternal and perinatal care practices and addresses the major causes of maternal death, intra-partum related stillbirths, and neonatal deaths. The *Safe Childbirth Checklist Collaboration* has already made significant strides to improving maternal and neonatal health. It is hoped that the Checklist can become an effective life-saving tool that can be used in a wide-range of settings.

These programmes – the two Global Challenges, the research and knowledge management programme,

and the Patients for Patient Safety initiative – have all had a global reach. The WHO Patient Safety Programme has raised awareness across the world of the key concepts and strategies in patient safety. It has inspired passion for the universal cause of making health care safer. It has secured commitment at the highest level amongst health ministers and health leaders in Member States of the World Health Organization. It has provided standards, evidence-based guidance and practical tools to support those involved in the design of patient safety programmes within nations' health care systems. It has championed the use of the stories of patients and families who have been the victims of unsafe care.

All of these approaches are fundamentally important in the drive to strengthen all elements of quality health service delivery - with safety being central to this, but not the whole story.

To further shape the nature of Universal Health Coverage, and how it is delivered, WHO developed a *Framework on Integrated, People-Centred Health Services*. This sought to promote a fundamental

shift in the funding, management and delivery of health services. It also aimed to provide a blueprint to address two common adverse features of many healthcare systems: that they are poorly coordinated and fragmented.



Framework on integrated, people-centered health services

The framework eschews purely disease-based models of care, instead advocating putting people and communities at the centre of health systems.

Development of the Framework drew on evidence demonstrating that health systems designed around people's and communities' needs are more effective, cost less, improve health literacy and patient engagement, and are more resilient to health crises.

Giving a clear priority to Universal Health Coverage has also meant that there is an imperative to measure and monitor progress, as well as to stimulate interest in the academic world to consider the effectiveness of new models of care and to evaluate progress.



VACCINES: PROTECTING YOUNG LIVES

The opportunity to prevent a vast swathe of human disease over a lifetime is the greatest development in the history of public health. Lifelong protection, by immunization in childhood, is too often taken for granted. The aim of the Global Vaccine Action Plan, launched by the World Health Assembly in 2012, was to create:

“A world in which all individuals and communities enjoy lives free from vaccine-preventable disease”.

Vaccines were already saving 2.5 million lives – mainly of children – every year. Yet, 1.5 million were dying from diseases that vaccination can prevent. The action plan sounded a clarion call:

“Overwhelming evidence demonstrates the benefits of immunization as one of the most successful and cost-effective health interventions known. Over the

past several decades, immunization has achieved many things, including the eradication of smallpox, an accomplishment that has been called one of humanity’s greatest triumphs. Vaccines have saved countless lives, lowered the global incidence of polio by 99 percent and reduced illness, disability and death.”

The World Health Organization had launched its Expanded Programme on Immunization (EPI) in 1974. At that time, great progress was being made towards eradicating smallpox – the first time (and, so far, the only time) that a human pathogen was wiped from the planet. This momentous feat demonstrated the immense power of vaccines, and created enthusiasm to spread the benefit more widely. When the Expanded Programme on Immunization was launched, just one in 20 of the world’s children received the basic set of vaccines: protection against



polio, diphtheria, tuberculosis, pertussis, measles, and tetanus. By 2010, that earlier paltry figure of 5% coverage had grown to 85%.

In the first decade of the new Millennium, a new focus and determination came into play. Gavi, the vaccine alliance, was founded in 2000. WHO then led the creation of the first *Global Immunization Vision and Strategy*, intended to cover the period 2006 to 2015. This established a global framework for regions and countries. But more was needed. In January 2010, at the World Economic Forum in Davos, Bill Gates, Co-Chair of the Bill and Melinda Gates Foundation, announced that:

"We must make this the decade of vaccines. Vaccines already save and improve millions of lives in developing countries. Innovation will make it possible to save more children than ever before."

The coalescence of action necessary to deliver this transformation started to happen. In 2011, the World Health Assembly discussed and agreed on its strategic direction. A substantial but rapid consultation received input from more than 1000 people in 140 countries. And so, in 2012, the *Global Vaccine Action Plan* was launched.

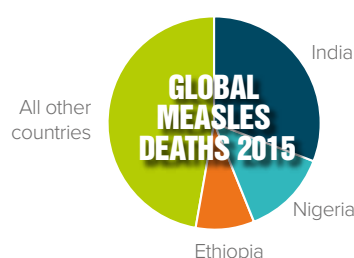


Decade of Vaccines launched

The *Global Vaccine Action Plan* set out a number of key challenges:

- Achieving global polio eradication – the last ever case of wild polio to occur no later than 2014
- Regional tetanus, measles and rubella elimination – there were no new targets, but reiteration of those already endorsed by the regional and global bodies
- Improving vaccine coverage – goals at national level and the aim of enhancing the equity of coverage within countries
- Introducing new vaccines – targets to expand use of existing vaccines to countries where they were not used
- Research and development – making at least one new disease vaccine-preventable

The Plan also pledged to help achieve the fourth Millennium Development Goal – reducing under-5 mortality – towards which vaccines were already making a substantial contribution.



Since the Plan's launch, great progress has been made to introduce new and under-utilised vaccines. Scaling up of pneumococcal and rotavirus vaccines was particularly promising, preventing the leading causes of under-5 deaths from pneumonia and diarrhoea respectively. Between 2000 and 2015, \$10

Target: 90 low and middle income countries introduce one or more new or under-utilised vaccines, 2010-2015



Target: 90% DTP3 coverage in all 194 member states, 2015



billion was committed to Gavi – an alliance of which WHO is a key member. Three-quarters of the money was to fund vaccine introductions directly. Its work accelerated in step with the Decade of Vaccines. It has introduced the pentavalent vaccine to 68 countries since 2000, pneumococcal vaccine to 58, rotavirus vaccine to 43, and more. Most recently, it has introduced the human papillomavirus vaccine – primarily to prevent cervical cancer in women – to four countries so far, following pilot projects in 27.

The authors of the Global Vaccine Action Plan, thinking of tuberculosis, influenza, and malaria, could not have envisaged the Ebola crisis. But, with Ebola came a need and an opportunity to rapidly find a usable candidate vaccine. WHO and its Strategic Advisory Group of Experts on Immunization (SAGE) rose to this challenge. There was real innovation, in both technical and regulatory terms. The lessons learned from this will hasten the development of other vaccines in the future.

WHO's Strategic Group of Experts on Immunization (SAGE) was asked to monitor implementation of the Global Vaccine Action Plan, and report on this to the World Health Assembly. Their successive reports have highlighted the residual problems of vaccine coverage:

"There are still 19 million un-vaccinated and under-vaccinated children in the world, representing the

least privileged members of society: those who are fleeing disaster, marginalized, dispossessed or simply uncounted".

Globally, since 2010, there has been no significant improvement in vaccination, as measured by DTP3. In 2015, 68 countries were falling short of the mid-decade target of 90% coverage. These percentages have flat-lined, or deteriorated, in more than 50 countries. Variation in performance on this measure has persisted, both within and between countries. Where delivery of vaccines is failing, it indicates weakness in the basics needed for a health system – a supply chain, simple management measures, training of staff, availability of frontline workers, and financing. There are gaps in data availability and quality – a perennial theme in public health. In turn, this holds back the quality of analysis needed to improve coverage.



Polio eradication: only three polio endemic countries remaining; fewest cases in history

Eradication has a special, but controversial, place in the field of immunization. Smallpox eradication was a momentous public health achievement. Over the last decade, considerable progress has been made towards eradicating polio. In 2007, there were 1315 cases in 12 countries; in 2016, there were just 37 cases in three countries. But the "last mile" of

polio eradication is taking far longer than anybody anticipated, when the 1988 World Health Assembly set off along this track. Meanwhile, each WHO region has now set a goal of eliminating measles. These are on different timelines, with 2020 the latest targeted date. The step of converting these regional goals into a global eradication target has not been taken, largely because of the polio experience. However, higher levels of measles vaccination have substantially contributed to the decade's decreases in childhood mortality.



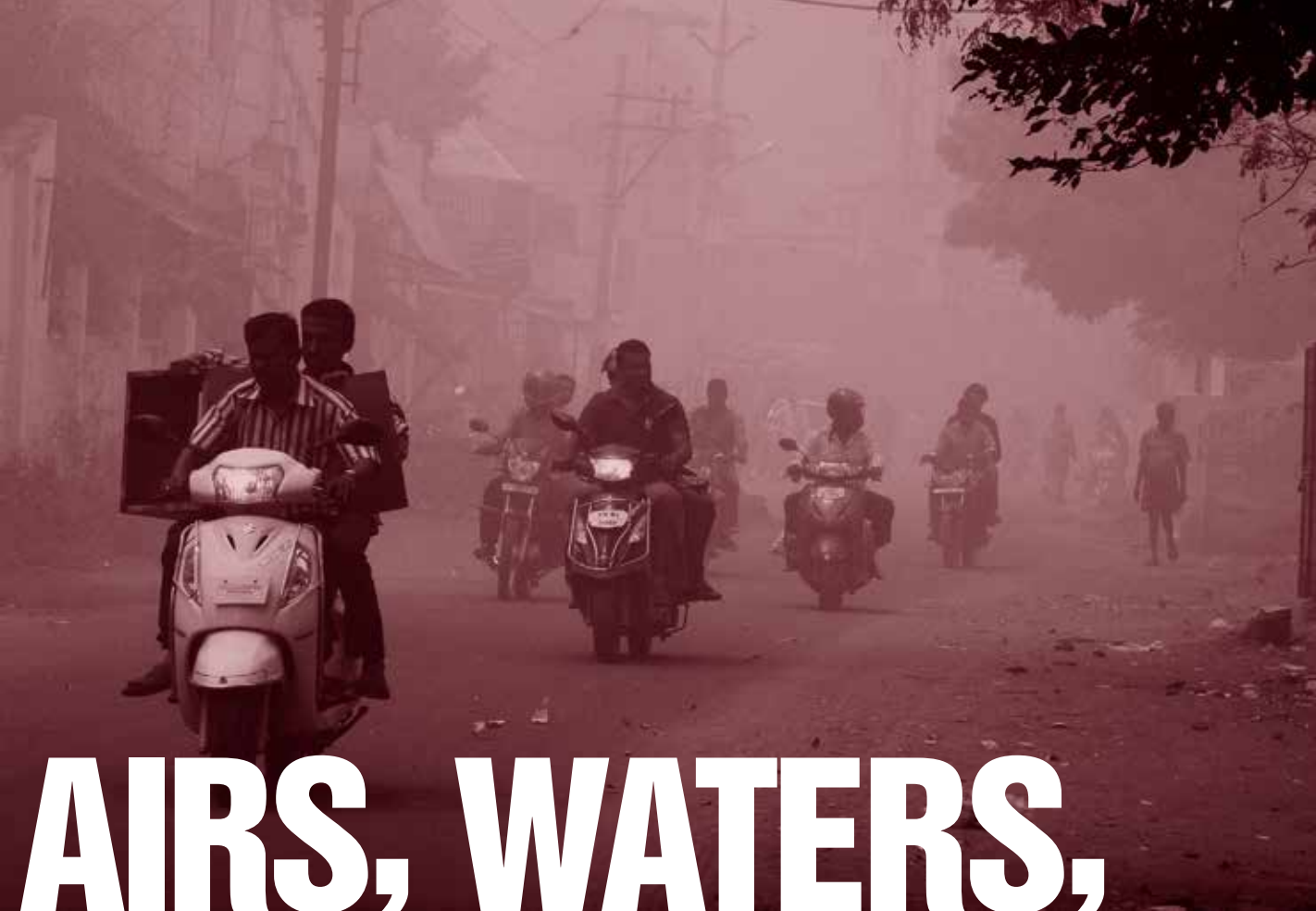
In two-week window in 2016,
more than 150 countries switch to
bivalent oral polio vaccine

Vaccine financing is becoming increasingly contentious. In 2015, the World Health Assembly passed a resolution on vaccine pricing, encouraging greater transparency and collective efforts from Member States. It requested a series of actions from the WHO Secretariat. The greatest concern surrounds countries “graduating from” Gavi (i.e. becoming ineligible for financial support), and also those middle-income countries that were never eligible for Gavi support.

The *Decade of Vaccines* has three years left to run. The World Health Assembly is monitoring its progress annually. The *Global Vaccine Action Plan* has reaffirmed that vaccines are a cornerstone of global health policy. However, many of the children who need them most are still out of reach. At the start of this decade, Melinda Gates, Co-Chair of the Bill and Melinda Gates Foundation, made the case afresh:

“Vaccines are a miracle,” she said, “With just a few doses, they can prevent deadly diseases for a lifetime.”

This continuity of purpose must infuse the closing years of this decade and shape the years that follow.



AIRS, WATERS, PLACES

The World Meteorological Organization confirmed that 2016 was the hottest year on record. It combines data from a wide range of sources to produce its global and regional average annual temperatures. Carbon dioxide and methane concentrations – both indicators of human-induced climate change – are at record levels.

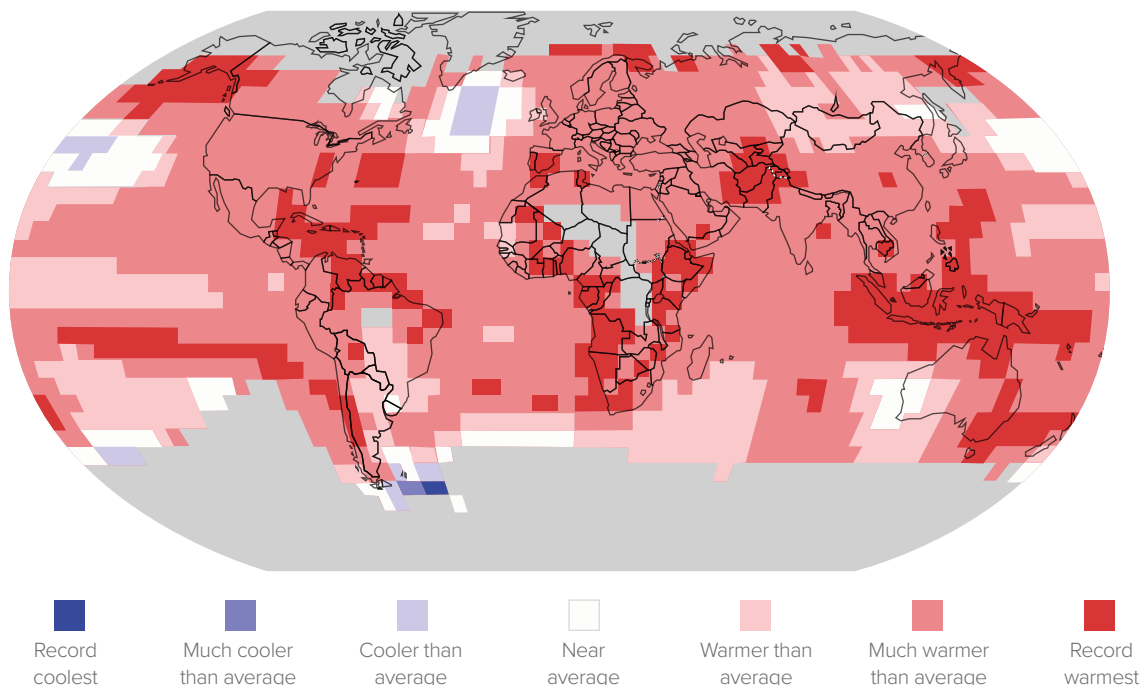
Over the last decade, the United Nations, national governments, public health bodies, non-governmental organisations, civil society, scientific organisations, and the academic community have given unprecedented attention to climate change, to addressing ways to slow and mitigate its effect, and to reaching formal and binding international agreements. The majority continues to emphasise that it is the single dominant threat to the planet's future. This is reinforced by the judgments and

reports of the *Intergovernmental Panel on Climate Change*. The Panel prepares comprehensive Assessment Reports about the state of scientific, technical and socio-economic knowledge on climate change, its causes, potential impacts and response strategies. It also produces special reports, which are an assessment on a specific issue, and methodology reports, which provide practical guidelines for the preparation of greenhouse gas inventories. The Fifth Assessment Report was released in 2013/2014.

Amongst the Panel's key findings were the following summary conclusions:

“Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven largely by economic and population growth, and are now higher than ever. This has led to atmospheric

2016: the hottest year since records began



Source: NOAA-NCEI

concentrations of carbon dioxide, methane and nitrous oxide that are unprecedented in at least the last 800,000 years. Their effects, together with those of other anthropogenic drivers, have been detected throughout the climate system and are extremely likely to have been the dominant cause of the observed warming since the mid-20th century.”

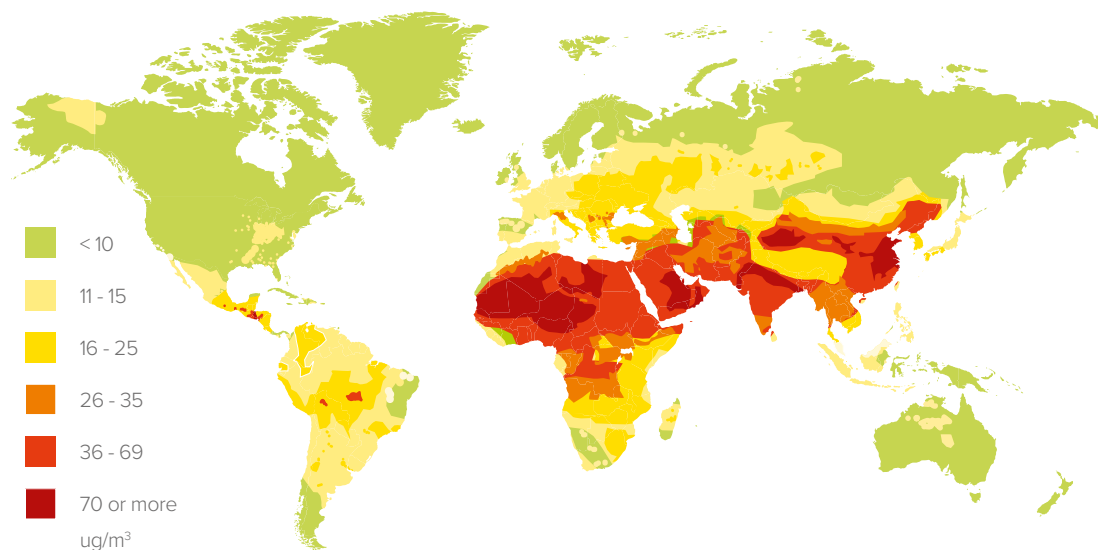
and

“Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems. Limiting climate change would require substantial and sustained reductions in greenhouse gas emissions which, together with adaptation, can limit climate change risks.”

Despite these clear and consistent conclusions, some continue to dispute that human factors have made a major contribution to climate change, and hold that current meteorological observations are not out of the ordinary.

Throughout the entire last decade of WHO’s work, climate change and its bearing on planetary health and human populations has been a towering backdrop. Extensive work has been undertaken to scope, document, and model the specific health effects of climate change. These include: a greater risk of injury, disease or death from extreme weather events (such as prolonged heat waves and major floods); greater transmission of vector- and water-borne diseases as well as zoonoses; poor air quality causing cardiac and respiratory illness; reduction in levels of safe drinking water; adverse effects of exposure to ultraviolet light; malnutrition due to poor crop yield; and, social and economic impacts on mental health and well-being.

Air pollution: the growing bands of yellow and red



Annual mean ambient level of particulate matter (PM2.5)

WHO estimates that, between 2030 and 2050, climate change will cause approximately 250,000 additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress. The direct damage costs to health (i.e. excluding costs in health-determining sectors such as agriculture and water and sanitation) is estimated to be US\$ 2-4 billion per year by 2030.

Since a landmark resolution by Member States in 2008, WHO has developed and implemented workplans to prevent and mitigate the health effects of climate change. The latest, endorsed in 2015, covers:

- *Partnerships*: to coordinate with partner agencies within the UN system, and ensure that health is properly represented in the climate change agenda
- *Awareness raising*: to provide and disseminate information on the threats that climate change presents to human health, and opportunities to promote health while cutting carbon emissions
- *Science and evidence*: to coordinate reviews of the scientific evidence on the links between climate

change and health, and develop a global research agenda

- *Supporting the public health response*: to assist countries to build capacity to reduce health vulnerability to climate change, and promote health while reducing carbon emissions.

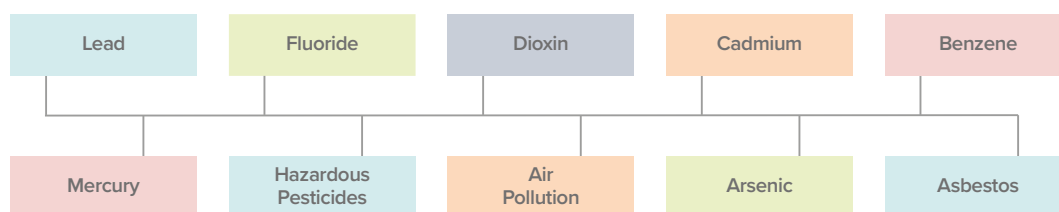
Building on this, a broader action agenda for the whole health community was agreed at the 2016 WHO Conference on Health and Climate.



The major threat of climate change maintained on the global health agenda

In 2015, *The Lancet Commission on Health and Climate Change* produced a series of reports and papers on the health aspects of climate change and the potential response which it described as “the greatest global health opportunity of the 21st century”.

Chemicals of Public Health concern



The Commission, and indeed other global health panels established by *The Lancet* medical journal, are an excellent example of how independent groups of scientists, experts, and thought-leaders, are indispensable to advancing global health. In this case, *The Lancet Commission on Health and Climate Change* made a series of policy proposals and pledged to monitor progress on them:

- Invest in climate change and public health research, monitoring, and surveillance
- Scale-up financing for climate-resilient health systems worldwide. This must enable the strengthening of health systems in low- and middle-income countries, and reduce the environmental impact of health care
- Protect cardiovascular and respiratory health by ensuring a rapid phase out of coal from the global energy mix
- Encourage a transition to cities that support and promote lifestyles that are healthy for the individual and for the planet
- Establish the framework for a strong, predictable, and international carbon pricing mechanism
- Rapidly expand access to renewable energy in low- and middle-income countries, thus providing reliable electricity for communities and health facilities; unlocking substantial economic gains; and promoting health equity
- Support accurate quantification of the avoided burden of disease, reduced health-care costs, and enhanced economic productivity associated with

climate change mitigation

- Adopt collaborative mechanisms between Ministries of Health and other government departments, ensuring integration of health and climate considerations in government-wide strategies
- Agree and implement an international agreement that supports countries in transitioning to a low-carbon economy.

Many of the same unsustainable and polluting technologies that are driving climate change also contribute to the more immediate and local threat of air pollution. In March 2017, speaking to the BBC, Dr Margaret Chan, Director-General of WHO, said:

“Air pollution is one of the most pernicious threats facing global public health today and on a bigger scale than HIV or Ebola.”

WHO has estimated that 92% of the world is breathing air above the limit for levels of particulate matter. Called PM2.5, these particles have a diameter less than 2.5 micrometres, or one seventh of that of a human hair. For this reason they can travel deep into the lungs. Together with carbon monoxide, nitrogen oxide and ozone, small and ultrafine particles are the most damaging components of polluted outdoor air.

WHO has estimated that poor indoor and outdoor air quality kills around seven million people a year, with the highest number in Asia. Air pollution has an

Win-win strategies for the environment and health



1. Apply low **carbon strategies** in energy generation, housing and the industry.



2. Use more active and **public transportation**.



3. Introduce **clean fuels** for cooking, heating and lighting and clean technologies.



4. Reduce **occupational exposures** and improve working conditions.



5. Increase **access to safe water** and adequate sanitation and promote hand washing.



6. Change **consumption patterns** to lower the use of harmful chemicals, minimize waste production and save energy.



7. Implement interventions that can increase **sun protective behaviour**.



8. Pass **smoking bans** to reduce exposure to second-hand tobacco smoke.



9. Always use a **health in all policies** approach to create healthier environments and prevent disease.

impact on health right across the life course, having been causally linked to low birth-weight, acute and chronic lung disease, stroke, dementia, coronary heart disease, cancer, as well as damage to DNA and the immune system.

The impact on children is particularly marked - every year, nearly 600 thousand children aged under 5 years die from respiratory infections attributable to indoor and outdoor air pollution and second-hand smoke.

Between 2008 and 2013, global urban air pollution levels rose by 8%, although there were improvements in some regions. The sources of outdoor air pollution are diverse: energy use in domestic and commercial settings traffic (particularly diesel engines); farming; power generation; industrial outputs; burning of

living and dead vegetation (e.g. in land clearance). Additional sources of poor outdoor pollution in some parts of the world include sand and dust storms from deserts and deforested areas.

Indoor air pollution is also important in causing premature death, illness, and poor health across the world. WHO estimates that it kills 4.3 million people a year.

At the World Health Assembly in May 2016, a *Road Map for An Enhanced Global Response to the Adverse Health Effects of Air Pollution* was adopted, covering actions to be taken between 2016 and 2019. It sets out four areas of action. Firstly, to expand the knowledge base in respect of evidence on the impact on health of air pollution, and the effectiveness of policies to prevent

and mitigate them. Secondly, to develop better monitoring and reporting systems, and measures of progress towards the air pollution-related targets of the Sustainable Development Goals. Thirdly, it seeks to design approaches to leverage health sector leadership and coordinated action at local, national, regional and global levels in order to raise awareness of air pollution. Fourthly, the Road Map aims to strengthen institutional capacity of the health sector to analyse policy and decision-making in support of joint action on air pollution and health.



A Road Map for an Enhanced Global Response to Health Effects of Air Pollution: action 2016-2019

The emphasis in the Road Map is on securing multi-sectoral engagement across transport, energy, waste management, agriculture, urban planning, and industry.

The importance of the core human needs of water (for drinking, bathing, and household uses), sanitation (access to toilets, safe disposal of solid waste), and hygiene have risen up the global health agenda over the last decade. Populations in the poorest parts of the world suffer badly from the lack of these basics.

Safe water for drinking was a Millennium Development Goal target and was one of the first to be met. However, the situation is still very serious as the United Nations data show:

- 2.6 billion people have gained access to improved drinking water sources since 1990, but 663 million people are still without
- At least 1.8 billion people globally use a source of drinking water that is faecally contaminated
- Water scarcity affects more than 40 per cent of the global population and is projected to rise
- Over 1.7 billion people are currently living in river basins where water use exceeds recharge

- 2.4 billion people lack access to basic sanitation services, such as toilets or latrines
- More than 80 per cent of wastewater resulting from human activities is discharged into rivers or sea without any pollution removal
- Each day, nearly 1,000 children die due to preventable water and sanitation-related diarrhoeal diseases
- Floods and other water-related disasters account for 70 per cent of all deaths related to natural disasters.

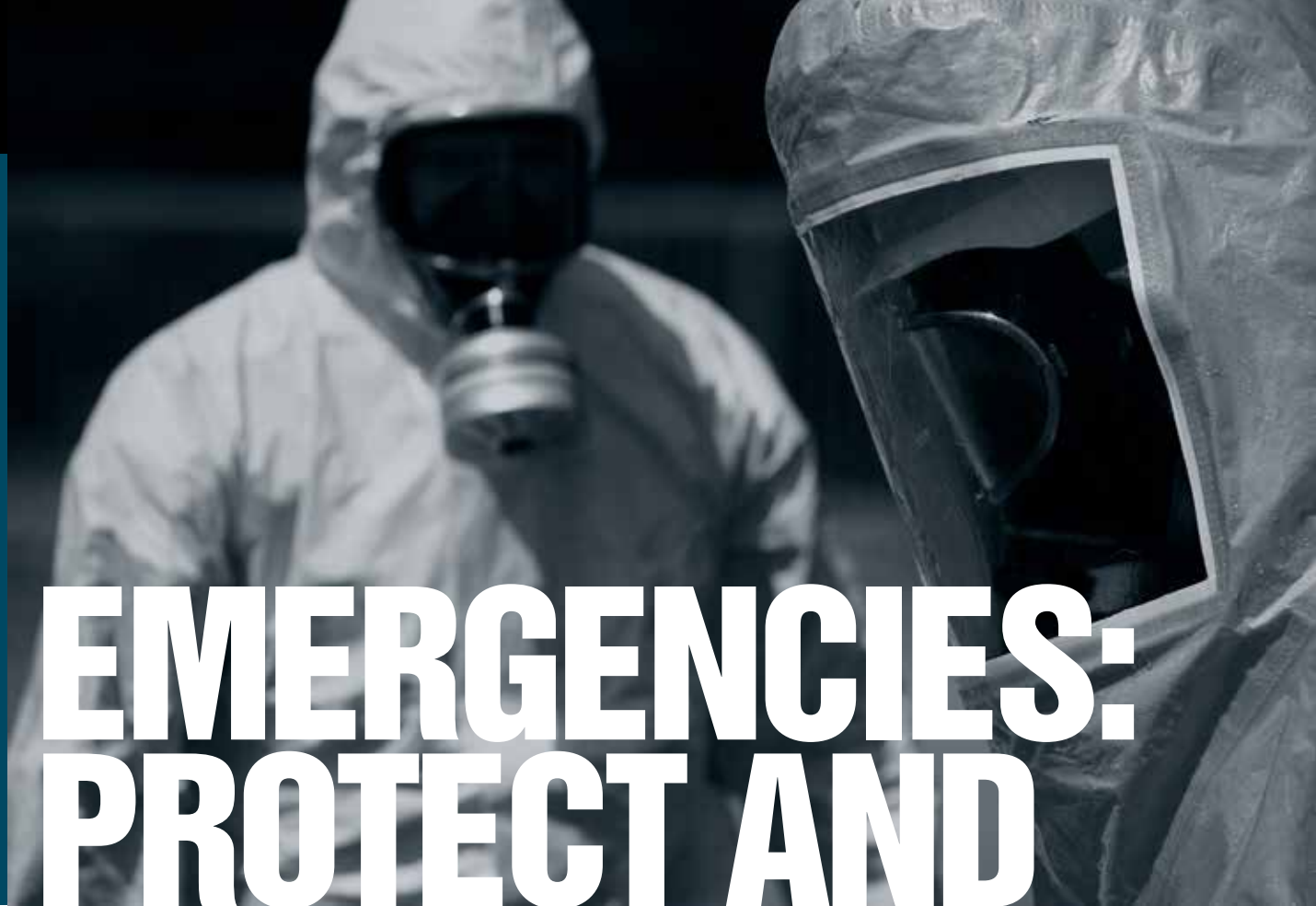
The Sustainable Development Goals take a broad-based approach. Goal 6 states: "Ensure access to water and sanitation for all." Water, Sanitation and Hygiene (WASH) is now part of many global health programmes, notably those run by a wide range of non-governmental organisations. Particular expertise is needed in delivering such programmes at times of floods and other extreme weather events as well as in refugee and migrant camps and settlements.

Toxic land pollution is another route through which health is damaged. Many people in poorer communities in low- and middle-income countries can come into contact with toxic compounds. This happens in a number of ways. They may be living near, or on, an abandoned industrial site where heavy metals and other hazardous substances can stay in the soil for years, or even decades. Children playing in such environments are particularly vulnerable.

A greater and concerted international effort is needed to clean up these sites but also to assess the risks more comprehensively, educate and inform the communities affected, and find creative ways to provide alternative employment. There have been some encouraging programmes. For example, in a \$25 million program, the World Bank has removed over 3,000 tons of obsolete and dangerous pesticides from around 900 contaminated sites in Ethiopia, Mali, Tanzania, Tunisia and South Africa.

Soil contamination is just one of the many ways in which health is harmed by exposure to hazardous chemicals. The dangers remain too commonplace in the workplace, the home, and even in schools. The hazards exist in all countries, but are often more marked in poorer countries. People may visit sites with industrial waste to try to harvest anything of value to provide a small income. Increasingly, this can include so-called e-waste where discarded electronic products are broken apart, again exposing someone to toxins, including lead. They may work in unregulated or exploitative industries with no safeguards or protection for workers. Or, they may try to make a living through a hazardous process such as battery recycling or attempting to extract gold using mercury. In such circumstances, levels of knowledge or awareness of the dangers are usually very low. These are examples drawn from a wide spectrum of hazards. Drawing on expert opinion, WHO has estimated that over 12 million people die each year from exposure to hazards of all kinds in the environment. A roadmap for how the health sector can address chemical concerns will be considered by the World Health Assembly in 2017.

The Ancient Greek physician, Hippocrates, wrote *On Airs, Waters, and Places*. He was one of the first to speculate that the quality of air, water, and soil as well as climatic conditions was likely to have a strong influence on health. Nearly 2500 years later, concerns about the impact of climate and environment on health are still centre stage.



EMERGENCIES: PROTECT AND MITIGATE

WHO's global health leadership role comes to greatest public prominence at times when outbreaks or epidemics of communicable disease pose a serious international threat. This can be because of the novel nature of the infectious agent, the scale and speed of transmission, or the severity and consequences of the resulting illness.

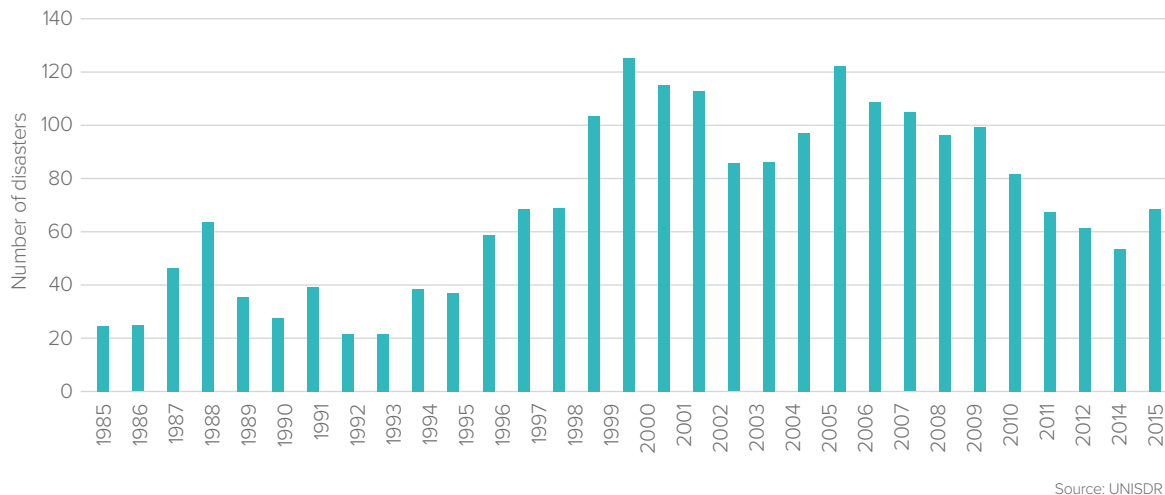
The 21st Century began with just such an emergency, when a respiratory virus that had not previously caused widespread human illness struck with a force that precipitated a global crisis. Severe Acute Respiratory Syndrome (SARS) caused massive economic and social upheaval and threw a critical spotlight on national and international public health systems. By the time the disease had run its course, it had been reported from 29 countries and areas, there had been more than 8000 cases, and nearly 800 people had died.

SARS triggered many fundamental reviews of public health capacity and capability, particularly in countries such as China and Canada that had been worst affected. It also led to the broadening of the *International Health Regulations*, which now cover a wide range of risks and represent a major agreement between 196 countries to work together to protect global health.

Many key lessons came out of the experience of SARS, including: the need for early sharing of surveillance data between countries and with WHO; getting virus isolates to specialist laboratories as quickly as possible; and, strong global coordination of response. Central to the future was recognition of the importance of the leadership role of WHO.

Much of this learning was invaluable for the public health emergencies that were to dominate the

Reported intensive natural hazards in Africa



succeeding period, notably pandemic influenza, Ebola virus disease, and Zika virus. However, each brought a new set of challenges.

In the 20th Century, there had been three well documented influenza pandemics (1918, 1957, and 1968) causing up to 100 million deaths. By 2007, pandemic influenza planning was intensive, because: 40 years had passed since the last pandemic; there had been alarming outbreaks of “bird ‘flu” with human cases; and, there was worldwide infection of wild and domesticated bird populations with H5N1 influenza virus, with such viruses having high propensity to re-assortment.

In March 2009, a new influenza virus emerged in Mexico (initially described as “swine ‘flu”) with early reports suggesting a case fatality rate of 64%. Had this virulence been borne out by further evidence, it would have been catastrophic to the world’s population. The subsequent course of the influenza A [H1N1] pdm09 virus pandemic, the first for 40 years, made it one of the mildest on record. The figure of an estimated 105,700 to 395,000 deaths globally is certainly much less than the three 20th Century pandemics, and more comparable to seasonal influenza mortality. However, what was

largely overlooked by many commentators was that it killed a disproportionate number of children and young adults. This was typical of an influenza virus “shift” and not of seasonal ‘flu. Had the world’s public health services left their extensive pandemic plans on the shelves, and shrugged their shoulders that the effort would not be worthwhile, then more children and young adults would surely have died. To an epidemiological eye, the numbers would still have been small, but that is of little comfort to the mother or father of a dead child. Public perceptions of risk are very different to those of 40 years ago and clusters of children’s deaths and the hospitalization of young people are not readily accepted in a rationale of “mildness.”

At WHO, strong pandemic plans were in place and these were implemented. The eventual outcome could not have been reliably forecast. In the event, the 2009 H1N1 pandemic was invaluable as a “dress rehearsal” for a more severe future pandemic. It was the first test of the 2005 International Health Regulations.

The independent review of the pandemic response concluded that some things had gone well, notably: the early identification and characterisation of the

Recommendations of the WHO Review Committee on the Functioning of the 2005 International Health Regulations (IHR) in Relation to the 2009 H1N1 Influenza Pandemic

- Accelerate the implementation of the core capacities required by the IHR
- Enhance the WHO Event Information Site
- Reinforce evidence-based decisions on international travel and trade
- Ensure necessary authority and resources for all National Focal Points
- Strengthen the internal capacity of the WHO for sustained response
- Improve practices for the appointment of an emergency committee
- Revise pandemic-preparedness guidance
- Develop and apply measures to assess the severity of a pandemic
- Streamline the management of guidance documents
- Develop and implement a strategic, organization-wide communications policy
- Encourage advance agreements for vaccine distribution and delivery
- Establish a more extensive public health reserve workforce globally
- Create a contingency fund for public health emergencies
- Reach an agreement on the sharing of viruses, access to vaccines, and other benefits
- Pursue a comprehensive influenza research and evaluation program

virus, the provision of candidate vaccine strains, and the creation of strong collaborative networks to help manage the pandemic. Other areas were criticized, for example: the slow distribution of the vaccine; the inadequate vaccine production capacity (that could only provide for a third of the world's population); the weakness of the definition of a pandemic that relied purely on the scale of spread, not severity, leading to public announcements that lacked credibility; the absence of transparency about membership of scientific advisory committees and perceived conflicts of interest.

Recommendations were made to strengthen the approach for the future. One of the most important actions should be to drive research harder for a pluripotent influenza vaccine that could block the prospect of a future influenza pandemic. The transformative nature of this to save millions of lives in a severe pandemic has not been fully appreciated. Perhaps the global health community is allowing themselves to believe that influenza pandemics come in 40-year cycles. The reality, of course, is that a novel, easily transmitted, and highly virulent influenza virus could emerge next week.

One of the most important aspects of the SARS crisis was the extent to which the outbreaks moved dangerously out of control once infections were treated within hospitals, if prevention and control standards were weak. Whilst this was understood at the time, the need to look more generally and critically at the risks within healthcare facilities especially in low-income countries was not systematically addressed.

In 2014, Ebola virus disease, an infection with a high case fatality, began to surge in larger conurbations in three countries in West Africa: Guinea, Sierra Leone, and Liberia. Outbreaks in other neighboring countries, Mali, Nigeria and Senegal, were rapidly controlled. The outbreaks in the three main countries were prolonged beyond anything that had been seen before. Previously Ebola had only ever occurred in sparsely populated areas and as a result been contained. This time it emerged in settings with poor healthcare infrastructure, and significant gaps in infection prevention and control procedures. There was no early intervention. As a result, it posed a much greater threat to regional populations and potentially globally.

WHO was criticized for its slow initial response to the threat of Ebola. After a difficult start, the response got stronger - thanks both to WHO and to many of its partners. There were three strong features of the response. Firstly, a public health Emergency Operations Centre that had been created by WHO and other Polio Partners for the purpose of coordinating action to eradicate polio in Nigeria was immediately and successfully deployed against Ebola. It is widely accepted that had Ebola been allowed to spread into densely populated Lagos, Nigeria, the world could have been tipped into a public health catastrophe. Secondly, the team in WHO that led the first Global Patient Safety Challenge, *Clean Care is Safer Care*, had developed a very strong capability in healthcare infection prevention and control, together with extensive experience of implementation in low-resource settings and a wide network of international experts. This team joined forces with other infection control experts in WHO. It was given the mandate to coordinate efforts and also deployed in the affected areas to help reduce risks and strengthen resilience in the affected countries. Thirdly, WHO and partners forged a strong multinational alliance of Member States, international agencies, donors, and NGOs to coordinate action and provide the necessary support in funding, expertise, personnel, and supplies.



A Polio Emergency Operations Centre in Nigeria that halted Ebola virus in that country

The Ebola epidemic was declared over on 14th January 2016. The official figure for deaths was 11,315 but the true figure will be much higher.

The *Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response* reported to the World Health Assembly in 2016. It noted that many of the recommendations from the earlier review of the pandemic response (2011) had not been fully

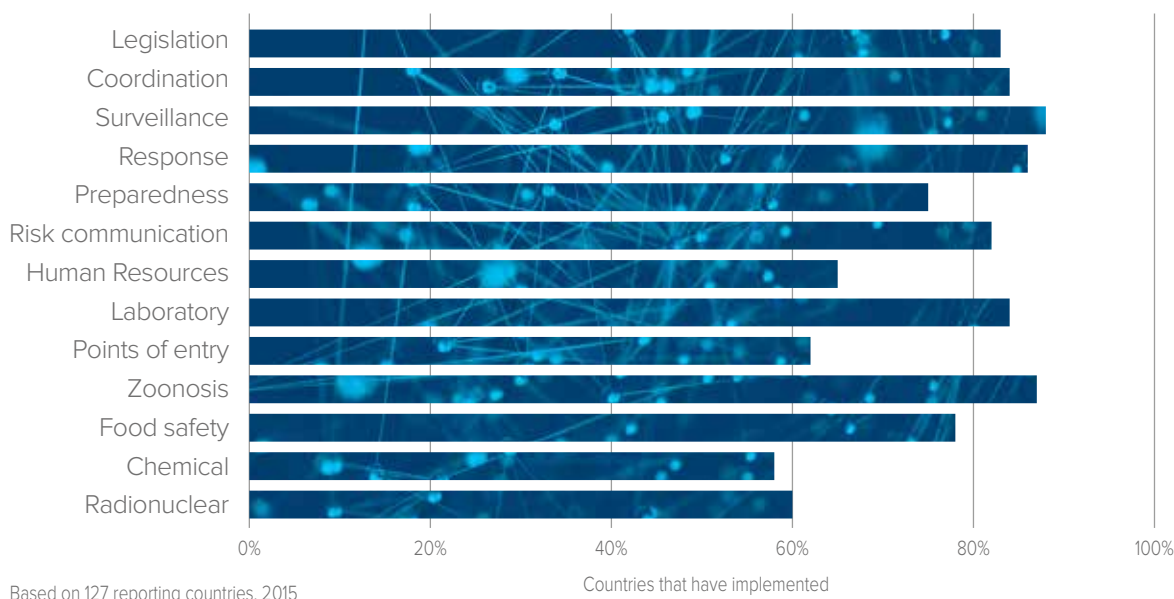
implemented. This meant that the world was still ill-prepared and vulnerable when Ebola struck. The 2016 recommendations therefore focused on the need to ensure full implementation of the International Health Regulations with all that this would entail. Critically, it was recognized that improvements sought, including substantial capacity building, would require a multi-sectoral approach. In addition, significantly greater funding would be required.

WHO has been leading programmes of work to build resilience in healthcare systems post-Ebola. Subject to the availability of the necessary financial support, WHO will be able to provide the urgent help needed to address poor infrastructure and limited implementation of infection prevention and control practices, and quality of care principles. Evidence is also emerging that the delivery of essential maternal and child health services – such as antenatal care and immunization – has reduced since the Ebola epidemic was declared over.

WHO is helping countries to assess their International Health Regulations core capacities. These capacities form an essential platform for the detection, assessment, notification and reporting of events, and for the response to health risks and emergencies of international concern. A programme of Joint External Evaluations is assessing countries' capacity to prevent, detect and respond to public health risks, highlighting the most critical gaps.

The improvements that will flow from the post-Ebola reforms of WHO will have the dual benefit of preparing countries better to face the next new disease, and also the current killers. Major outbreaks of communicable disease over the last few years have included: avian influenza A (H7N9) in China; plague in Madagascar; Yellow Fever in Brazil, Angola, Democratic Republic of Congo and Uganda; MERS-CoV in Saudi Arabia; Hepatitis E in Chad; Seoul

International Health Regulation implementation



virus in the United States of America and Canada; meningococcal disease in Togo; and Lassa Fever in West Africa. The frequency and severity of these events not only emphasizes the need for strong public health in countries, but the need for WHO's role in global coordination and response.

A further important post-Ebola development is the new African Union-funded Africa Centers for Disease Control and Prevention in Addis Ababa, Ethiopia. It became operational on 31 January 2017. It will play a pivotal role in helping the continent respond to public health emergencies. The plans include regional centres across the continent – Kenya, Zambia, Egypt, Gabon and Nigeria. The work of Africa Centers for Disease Control will surely enhance understanding of the higher risk populations in Africa, and advise on what prevention and control measures are necessary to provide better protection.

WHO has broadened its perspective from major outbreak and pandemic preparedness, to a wider concept of public health emergencies. Understanding and responding to the direct and indirect impact of disasters and humanitarian crises on health is advancing. The United Nations Office for Disaster Risk Reduction (ISDR) was established in 1999, mandated by a United Nations General Assembly resolution (56/195), to serve as the focal point in the United Nations system for the coordination of disaster reduction. It ensures synergies among the disaster reduction activities of the United Nations system and regional organizations and activities in socio-economic and humanitarian fields. It received nearly 350 reports of disasters from across the world in 2015. They caused over 22,000 deaths, affecting 98.6 million people, and resulting in \$66.5 billion in economic damage.



New Africa Centers for Disease Control and Prevention

Closely linked to its work is *The Sendai Framework*. This is a crucial development. It is a United Nations initiative to address disasters, bringing together public health and disaster risk reduction. It is part of the so-called “all-hazards” approach, and aims to reduce disaster risk and associated losses of lives, livelihoods, and health.

WHO is not only involved in public health emergencies, but in the health elements of natural disasters (such as the Nepal earthquake) and complex humanitarian situations (such as in Syria and Iraq). The building blocks of its approach include an Early Warning and Response Network (EWARN), a Health Resources Availability Monitoring System (HeRAMS), and an Emergency Medical Teams initiative. It has an increasing leadership role in the Inter Agency Standing Committee, particularly for infectious hazards.

WHO’s new *Health Emergencies Programme* is changing the way WHO works with countries to respond to crises and emergencies, from being primarily a technical agency, producing norms and standards, to a fully operational agency.



**New WHO Emergencies Programme
for All Hazards: prepare, prevent,
protect, respond, recover**

The Programme has five technical and operational divisions:

- *Infectious hazards management*: to ensure strategies and capacities are established for priority high-threat infectious hazards.
- *Country health emergency preparedness and the International Health Regulations (2005)*: to ensure country capacities are established for all-hazards emergency risk management.
- *Health emergency information and risk assessments*: to provide timely and authoritative situation analysis, risk assessment and response monitoring for all major health threats and events.
- *Emergency operations*: to ensure emergency-affected populations have access to an essential package of life-saving health services.
- *Emergency core services*: to ensure WHO emergency operations are rapidly and sustainably financed and staffed.

This is a very big shift of emphasis, and expansion of role, for WHO. The Programme works with countries and partners to prepare for, prevent, respond to and recover from all hazards that create health emergencies, including disasters and conflicts as well as the traditional locus in disease outbreaks and conflicts. The Programme will also lead and coordinate the international health response to provide effective relief and recovery to affected people.



CONCLUSIONS

In reviewing some of the challenges, developments, intractable problems, crises, emergencies, and successes in global health over the last decade, the words “One World” seem to float high above a complex landscape of global and national health architecture. Within it, so many dedicated individuals, teams, and organisations work tirelessly, as the sun rises and sets in the 24 different time zones of the world, to bring the gifts of good health, longevity, well-being, and the relief of suffering to seven billion people.

One World reverberates in many of the goals of global health: Universal Health Coverage; Every Woman, Every Child; access to essential life-saving medicines. The two words echo in the aim of “One WHO”, in which Member States, regional and country offices, global partners, NGOs, and civil society seek to strike a common purpose. They are unavoidable when thinking of the assailants on the world’s health: climate change, pandemics, natural disaster, conflict, antimicrobial resistance. They inspire solidarity, compassion, and idealism when the statistics of health and poverty, health inequity, life and death are

on the table or projected on the screen. They are relevant, too, when discussions turn to the need for alignment and collaboration between: science and policy; public and private; national and local.

WHO and its Director-General have powerful roles in creating and sustaining this holistic view of global health and in trying to forge a broad-based coalition to lead the quest to make lives healthier, fairer, and safer. The power of WHO is delivered through its roles in leadership, technical expertise, standard-setting, coordination, facilitation, and influencing agendas on the global stage.

Looking back over the last decade, it is clear that the world’s health needs are so diverse and urgent, that WHO cannot simply concentrate on a small number of priorities as some would advocate. This is demonstrated by the breadth of areas in which progress in global health has been made over the last decade, by organisations and individuals working at global, national, and local level in partnership with WHO and often in response to its leadership.

This Report documents many of the achievements of the last decade, for example: improved outcomes for mothers and children, breakthroughs in vaccine provision, two diseases brought to the brink of extinction, reductions in deaths from the major killers, measures to halt the rise of noncommunicable diseases, new frameworks and structures for public health emergencies (building on the learning from pandemic influenza and the Ebola virus crisis). Serious problems and challenges remain, many centered on the sources of inequity and on the burden of disease, premature death and disability suffered by the poorest populations in the world.

Looking across all these fields in which gains in global health have been made, a number of important themes stand out.

Inspiring a healthier and fairer future

On occasion throughout its history, WHO has launched big ideas that have transformed policy-making, inspired major initiatives, and continued to shape action at global and country level over years and sometimes decades. A good example of this is Dr. Halfden Mahler's vision of *Health for All* that he set out in 1981. Dr. Mahler was Director-General of WHO between 1973 and 1983. He died, aged 93 years, in December 2016, when WHO staff mourned his passing and celebrated his life and achievements. When he spoke about his idea in 1981,

Dr. Mahler said:

"Health For All means that health is to be brought within reach of everyone in a given country. And by 'health' is meant a personal state of well-being, not just the availability of health services – a state of health that enables a person to lead a socially and economically productive life. Health For All implies the removal of the obstacles to health – that is to say, the elimination of malnutrition, ignorance, contaminated drinking water and unhygienic housing – quite as much as it does the solution of purely

medical problems such as a lack of doctors, hospital beds, drugs and vaccines."

The role of WHO in thought leadership is not often talked about. When ideas like *Health for All* emerge, they are not mere slogans. They are powerful forces for change. They can become an organising principle for global health. Often, too, they are underpinned by a strong moral rationale: in this case, health as a human right.



**2016 Shanghai Declaration
on Promoting Health in the
2030 Sustainable
Development Agenda**

In her leadership of WHO, Dr. Margaret Chan has continued this focus on the fundamentals.

At a number of points in the last decade, WHO has called on the world to see health through a different lens, not just with a focus on disease. One was the *Commission on the Social Determinants of Health* that WHO established and subsequently championed. Almost immediately after publication, the Commission's report began to influence thinking and shape the health agenda. It has cascaded through regions and countries, challenging those who review existing policies and plans to think differently.

A second was the idea of *Universal Health Coverage*. This is fundamental in nature, and driven by strong emphasis on social justice, equity, and compassion.

A third was equally transformative but in a different way. The *World Report on Ageing and Health*, and its companion implementation plan, *The Global Strategy and Action Plan on Ageing and Health*, set out a vision of the future not just for health and healthcare, but one with the potential to strengthen the very fabric of societies, to buoy economies, to transform

the nature of cities, and to promote the cohesion of generations. Shifting the world of tomorrow from unhealthy to healthy ageing is as profound a goal as any international agency has ever set. Moreover, the do-nothing option will be disastrous.

A fourth watershed moment for global health was the first *Global Report on Disability*. Professor Stephen Hawking said in the foreword:

“In fact, we have a moral duty to remove the barriers to participation, and to invest sufficient funding and expertise to unlock the vast potential of people with disabilities. Governments throughout the world can no longer overlook the hundreds of millions of people with disabilities who are denied access to health, rehabilitation, support, education and employment, and never get the chance to shine.”

The Report gave clear global guidance on how to take action on the United Nations *Convention on the Rights of Persons with Disabilities*. About 15% of the world’s population lives with some form of disability. WHO has a distinguished tradition in the classification and measurement of disability, but much of this past work was based on a medical perspective. The *Global Report on Disability*, released in 2011 (jointly with the World Bank), shifted the paradigm of disability within the global health arena. It set out a vision of a social model of disability. Here, disability is seen as arising as an interaction between people and their environments. The emphasis is on breaking down barriers that prevent inclusion.



First Global Report on Disability marking a paradigm shift in approach

With these four foundational areas of work, WHO is helping not only to inspire action to achieve better health but to shape the way that health should be viewed in the future. It is also seeking to reinforce

the fundamental values that underpin it. These key policies will also provide a powerful stimulus to think differently about the way that health systems are designed and delivered. They will also create a vital backdrop to public policy-making more generally within countries.

Health at the world’s top table

In the past, WHO, as one of the main United Nations specialist agencies, has worked on its own agendas. Health was infrequently part of main United Nations business at the highest level. In the past decade, there has been an unprecedented scale of engagement of the United Nations in global health. In September 2011, a High-Level meeting of the General Assembly of the United Nations made a Political Declaration on the Prevention and Control of Non-Communicable Diseases. In June 2011, a similar declaration from a High-Level meeting called on Member States to intensify efforts to eliminate HIV and AIDS. In December 2012, the United Nations General Assembly passed a Resolution on Universal Health Coverage. In December 2016, the United Nations Member States signed a declaration to combat Antimicrobial Resistance. In 2014, the United Nations General Assembly and the Security Council discussed the Ebola crisis and authorized a wide range of actions.



NCDs, AMR and UHC on agenda of UN General Assembly

The importance of gaining United Nations commitment to global health priorities is of immense significance. It moves them from being solely programmes within the health sector to formal commitments that presidents and prime ministers take ownership of and accountability for. It has also been significant that global health has increasingly been part of the discussions of the G7 and G20 groups of nations.

The overarching nature of the United Nations Sustainable Development Goals is another vital part of this agenda. There are 17 universal goals, 169 targets, and 230 indicators. It is still early days for implementation of the Sustainable Development Goals. The examination of the health-related goals, targets, and indicators is just beginning. They have the potential to be transformative in global health. It will be essential to decide to what degree future priorities should be only in the currency of the Sustainable Development Goals, and how much they have to be driven forward in a different way.

New ways of working

Over the last decade, WHO has initiated its own process of reform, discussing it with its Member States, partners, and a wide range of individuals and organisations. Some of the debate has focused on first principles: what should a global health body, made up of all countries of the world, actually do? The complexity of the global health landscape is one the main drivers of the need for WHO to re-examine its own role and positioning. The number of organisations and interests has increased and, as a result, mapping out inter-relationships is a constant work-in-progress. Also there has been a worsening of the funding climate for WHO's work, particularly in the aftermath of the global financial crisis.

In an era of open and healthy discourse in global health, it is right that WHO's role comes under regular scrutiny. An intermittent stream of criticism comes from academia, and other sources, asserting that WHO is not doing what it has the potential to do to improve global health.

Generally, WHO is seen by commentators as having a choice to work in a number of ways: as a normative, standard-setting body orientated towards development; as a global activist and advocate for better health and action on the economic and social determinants of poor health; as an advisory body and

provider of technical support and facilitation to its member states. In reality, there is no choice between these approaches. In advancing global health, WHO's work must involve all of them.

In fulfilling its mandate for global health in a 21st Century context, WHO has an immensely difficult task. At its heart is the immutable premise that the improvement of population health requires not only evidence-based technical interventions but also a swathe of other essential activities including political commitment and alignment, leadership, successful partnership working, multi-sector collaboration, and engagement with communities and citizenship. This complexity is evident in so many areas where action or change is necessary. It is evident when reflecting that the Ebola crisis had implications for many of the other United Nations specialist agencies, not just WHO. It is evident in the need to dismantle obesogenic environments around the world that might have 20 or more nodal points of influence on a community's patterns of calorie intake and physical activity. It is evident in the recognition that the task of eradicating poliovirus from the planet involves reaching children in conflict-affected areas where vaccinators may be targeted and murdered.

Frustrations with the slow pace of global health change has led to some major donors providing funding linked to the achievement of measurable improvements in health and disease outcomes. Also, specialist agencies and partnerships have emerged (for example, UNAIDS; the Global Fund to Fight AIDS, Tuberculosis and Malaria; Gavi, the Vaccine Alliance) and some have received major allocations of funds in a similarly focused way.

This approach has achieved some success but it also raises fundamental questions about how best to achieve beneficial change in global health. So-called vertical programmes usually achieve their results at the expense of broad-based horizontal

actions to strengthen in-country health systems to be self-determining, self-sustaining and to deliver improved outcomes in that way. Ministries of health in low-income countries are encouraged to chase the money and risk narrowing their thinking to circumscribed, packaged, programmes. WHO's funding model has changed over the last decade from one that was based largely on core-funding with discretion to determine, with Member States, how to deploy it. Now, 80% of its entire budget is non-core and much earmarked for donor-determined priorities. The popularity of vertical programmes is understandable. They can and do achieve positive outcomes. In turn, the traditional development agenda of strengthening health systems has led, in the past, to the allocation of big sums of money by the larger donor nations without always yielding demonstrable benefits.

Taking an overview of how change has been achieved, and where there has been little progress, over the last decade, there are many other factors that need to be addressed that are not a specific element of the WHO's role. They include:

- The limited extent of the essential multi-sectoral approach getting off the ground at country level
- The poor quality of health data to monitor progress and evaluate change, especially in many low- and middle-income countries
- The diffuse and unclear nature of many mechanisms of accountability for performance
- The inability to consistently scale-up and spread best practice and innovation
- The difficulty in moving to command and control processes in emergencies.

Not enough time in global health is spent in critical discussion of the right ways to achieve strategic change. The striking improvement in the performance of the global polio eradication programme as a result of independently derived pointers to the need for systemic action is a small but important example of this.

With the valuable sources of constructive criticism and support of WHO's role, the organisation's own reform process has addressed three areas: priorities and programmes; governance; and, management. It has made major changes in the way that it operates in each of these areas, including establishing:

- Clearly defined priorities, with country offices allocating most of their budgets to priority areas
- Effective managerial accountability, transparency and risk management
- Strengthened engagement with stakeholders (particularly non-state actors)
- Improved strategic decision-making
- Increased capacity to respond to outbreaks and emergencies with health consequences
- Better management of human resources
- Information managed as a strategic asset.

The *Framework for Engagement with Non-State Actors* (FENSA) is an important development. It was negotiated and adopted by Member States. It acknowledges that WHO needs to work with a broad span of partners (NGOs, private sector entities, philanthropic foundations, and academic institutions) to be effective, and guides it clearly in doing so. In particular, working with the private sector, under carefully defined conditions, has moved forward. This is an area that WHO has shied away from in the past, with consequent lost opportunities.

The development of FENSA, which covers a wide spectrum of WHO's work, builds on efforts over the last decade to unite diverse stakeholders. Most notably, the Pandemic Influenza Preparedness Framework – adopted by the World Health Assembly in 2011 – brings together public and private sectors for the crucial common goals of sharing viruses with human pandemic potential and improving poorer countries' access to vaccines and other pandemic-related supplies.

These reforms put WHO in a strong position to combine its traditional strengths of power of convening, and the expertise in formulating norms and standards, with its acknowledged position of overall leadership in global health.

A great deal has been achieved in the last decade, as this Report documents. And important seeds have been planted that can and must bear fruit over the decades to come.

Unless otherwise specified, data are derived from
official publicly available UN sources

