

A **WAKE-UP** CALL

Lessons from Ebola for the world's health systems

NO CHILD BORN TO DIE

Save the Children

Front cover: A son and his father in Guinea. They both have the symptoms of Ebola and are being transferred to a specialist treatment centre.
(Photo: Samuel Aranda/Panos Pictures)

Save the Children works in more than 120 countries. We save children's lives. We fight for their rights. We help them fulfil their potential.

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THE STORY IN NUMBERS

EBOLA'S TERRIBLE TOLL

23,218	Ebola cases reported by 18 February 2015.
9,365	deaths reported by 18 February 2015.
488	health workers have died.

THE FINANCIAL COST OF THE EBOLA EPIDEMIC

$4.3bn	The amount committed by external donors to fight Ebola in Sierra Leone, Guinea and Liberia so far. This is **15 times** the annual national health budgets of the three countries combined.
$1.58bn	The 2012 gap in budgets to ensure essential healthcare for all the populations for all three countries.
3x	The cost of dealing with this Ebola outbreak is nearly **three times** the annual cost of investing in building a universal health service in all three affected countries.

THE WIDER CRISIS IN HEALTH SYSTEMS

28	The number of countries that have health systems as fragile as, or weaker than, Liberia's.
1 billion	The number of people who will never see a health worker in their lives.

CHILD MORTALITY

17,000	The number of children who die every day, most from illnesses we know how to prevent or treat.
35 of 75	The number of priority countries on track to achieve the child survival goal by the end of 2015. Only **16** of these countries will achieve this for their most vulnerable children.

THE COST OF ESSENTIAL HEALTH SERVICES

$86	The minimum recommended government spending per person to provide essential health services.
$7,704	The amount per person spent by the Norwegian government on health in 2012.
$9	The amount per person spent on health by the government of Guinea in 2012.

PAYING FOR HEALTHCARE FOR ALL

$101bn	The annual funding gap that needs to be filled to provide universal health coverage in 75 priority countries with the highest level of maternal and child mortality.
75%	The proportion of this gap that could be provided by national governments themselves by reaching international targets to: • raise tax revenue to **20% of GDP** and • allocate **15%** of national budgets to health.

FOREWORD



by Professor Peter Piot, co-discoverer of the Ebola virus,
Director of London School of Hygiene and Tropical Medicine

Almost 40 years ago, our lab received a blood sample from a Flemish nun in the Democratic Republic of Congo (then Zaire) who had died from a mysterious illness. This turned out to contain what we later called the Ebola virus. For decades afterwards, we saw occasional outbreaks of this deadly disease, but these outbreaks remained brief and limited to very confined rural communities. We assumed that this was how Ebola would continue to operate.

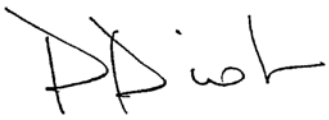
Last year, that assumption was shattered when an outbreak that spread across urban areas of West Africa led to more infections and deaths than we had ever thought possible. There are many lessons to learn from this current outbreak, even as we hope that it is now subsiding. We need to understand why the world was so slow to see and act on what was happening in West Africa. We need to understand how to improve emergency response systems. We need to understand why potential Ebola vaccines and treatments were left on the shelf for years and not pursued.

I was impressed by Save the Children's Ebola response services and dedicated staff when I visited Sierra Leone in December 2014. This report looks at another critical aspect of the Ebola crisis. It looks at how and why the weak, underfunded, understaffed and fragmented health services of Guinea, Liberia and Sierra Leone were unfit to cope with a large infectious disease outbreak and may have actually contributed to its spread.

But this report is not looking at what needs to be done just for these specific countries. Rather, its conclusions are global and ones which the institution that I lead, the London School of Hygiene and Tropical Medicine, strongly supports. There are many more than three countries in the world with dangerously weak health systems. For the sake of future infectious disease outbreaks, as well as for all of the unnecessary deaths and illnesses that are allowed to take place every day, often unnoticed, we have a responsibility to enable and support functioning and resilient health systems across the globe.

Health systems that can deliver universal health coverage will also be needed to achieve the Sustainable Development Goals that are likely to be agreed later this year. And universal health coverage is far from unaffordable – this report sets out a range of ways in which countries can raise and spend more on health from their own resources. Of course, many countries will still need support and money from donors, who could find this approach more cost-effective than responding to more crises like Ebola.

Ebola is a terrible tragedy for the families, communities and countries that have been affected. It is a wake-up call that the world can no longer allow any country to continue with dangerously inadequate health services.



Peter Piot

EXECUTIVE SUMMARY

A DREADFUL TOLL

Ebola has taken a dreadful toll in the three West African countries hit by the current outbreak – Guinea, Sierra Leone and Liberia. It has led to the deaths of thousands of adults and children, in pain, distress and, because of the infectious nature of the disease, far from the comfort of their families. Every child in these countries has been affected: as well as the many children who have died, many more have been devastated by the death of family members; and all children have been without vital services, such as schooling and basic healthcare.

Beyond the immediate human tragedy, the Ebola outbreak already is having – and will continue to have – dreadful consequences. Health facilities have shut down. Education programmes have been paused. Ebola has hit entire economies. Meanwhile, the response is costing billions.

Save the Children is working on the ground, along with many other individuals and organisations, to prevent infection, treat the sick and care for affected children.

As efforts continue to bring the disease under control, we must learn lessons from this crisis urgently – not just for the three countries concerned but for all countries that lack adequate health services.

CAUSES AND LESSONS

The circumstances and reasons for the Ebola virus spreading in these countries are complex – including the lack of early warning and surveillance, delays in recognising the importance of providing safe and dignified burials, and lack of fast action. The international community was far too slow to identify the scale of this outbreak and to act. But while there are many lessons to learn from the Ebola outbreak and the international response, this report focuses on one specific factor that contributed to Ebola getting out of control: inadequate health services.

In this report, Save the Children documents the existing weaknesses of the health services in the three main countries affected by Ebola. There is broad agreement that the Ebola crisis was not quickly contained, reversed or mitigated because **national health systems** in these countries were dangerously under-resourced, under-staffed and poorly equipped. The virus was able to spread, in part, due to the poor state of these health services, which were quickly overwhelmed and lacked the ability to cope with a major disease outbreak. This inability to cope with a major health emergency reflects a similar inability to cope with the daily health needs of their populations over the longer term.

The poor state of health systems in Liberia, Sierra Leone and Guinea is no secret. But it has never received enough national or global attention. In 2012, the Liberian government spent $20 per person per year on health, Sierra Leone $16 and Guinea $9, far below the recommended minimum of $86 to provide the minimum package of essential health services. By comparison, Norway spent $7,704 on health for each citizen.

This lack of spending on health is not a minor detail; it determined the number of doctors, nurses, clinics, hospitals, equipment and medicines available for emergency response when Ebola struck. Liberia had only 51 doctors in the whole country. Sierra Leone had 1,017 nurses and midwives. Whereas the UK has one health worker for every 88 people, Liberia had one health worker for every 3,472 inhabitants and Sierra Leone one for every 5,319. Furthermore, health services were not universally accessible. The poorest and most marginalised people had far less chance of receiving healthcare, despite their greater need for it.

PREVENTION IS BETTER THAN CURE

The Ebola crisis must be a **wake-up call** to all of us to take serious action to transform the health services of developing countries. Not doing so is causing unnecessary deaths and suffering every day, and also risking future infectious disease outbreaks that, in our interconnected world, have the potential to lead to pandemics – including conditions even more infectious than Ebola. Researchers at the University of Washington have calculated that a new influenza outbreak on the scale of the 1918 Spanish Flu crisis could kill up to 81 million people worldwide.

New analysis carried out by Save the Children shows that the annual cost of investing in building comprehensive health services for these countries is far less than the cost of responding to Ebola. The cost of the Ebola response is estimated to be at least $4.3 billion – so far. This is nearly **three times** the funding gap of $1.58 billion needed to provide the minimum package of essential health services for all in Sierra Leone, Guinea and Liberia. Prevention is clearly better than cure.

MANY MORE COUNTRIES ARE JUST AS VULNERABLE TO EPIDEMICS

This report looks beyond the Ebola-affected countries. Our new **Health Access Index** shows that Sierra Leone, Liberia and Guinea are far from alone in having weak health systems. As Dr Ariel Pablos-Mendez, USAID's Assistant Administrator for Global Health, has observed: "The state of the health workforce and health systems [in Guinea, Liberia and Sierra Leone] has hampered the ability of these countries to respond to the Ebola epidemic – but these countries are hardly alone in having inadequate training, support and numbers of health workers."[1]

The Health Access Index ranks the 'Countdown to 2015 countries' – the 75 countries with the highest levels of child mortality in the world – according to spending on health, number of health workers, coverage of maternal and child health services, and mortality rates. Using internationally collected data, it shows that, before Ebola struck, Sierra Leone and Liberia were not even in the bottom 20 countries. In fact, **28 countries come below Liberia in the Index**. These countries are extremely vulnerable to future infectious disease outbreaks – even those, like Nigeria, that were able to stop early Ebola cases spreading.

CHILD MORTALITY: A DAILY EMERGENCY

Ebola and other infectious diseases are high-profile threats that alarm the world, not least because of the fear that they will spread internationally. But there is a **daily burden of death and disease** caused by the lack of universal health services that receives far less attention: the high rates of maternal, newborn and child mortality. Every day, 17,000 children under five die; most of those deaths could be prevented through better access to basic healthcare.

While child deaths have been falling across the world, further progress is not assured. As we show in this report, just 35 of the Countdown to 2015 countries are on track to achieve Millennium Development Goal 4 on child mortality by the end of this crucial year. Further progress in reducing child mortality will require stronger health systems. Two features of current child mortality statistics demonstrate this clearly. First, rates of newborn mortality – child deaths within the first 28 days of life – are not falling fast enough. Preventing these deaths requires every birth to be supported by good-quality healthcare.

Second, the fall in child mortality has been far from equal. Children from the poorest households and regions are being left behind. Only 16 of the 75 Countdown countries have seen sufficient progress among their poorest and most marginalised populations.

THE CASE FOR UNIVERSAL HEALTH COVERAGE

One of the most important lessons from the Ebola crisis is the need to build comprehensive health services with sufficient funding, staff and equipment, to deal with everyday problems as well as infectious disease outbreaks. Save the Children believes that the world must now make a commitment to universal health coverage – the principle that every person in the world should have access to good-quality essential healthcare, not just those who can afford it. The movement to build universal health coverage has been gathering pace, even before Ebola struck. Key governments, civil society organisations and international institutions such as the World Health Organization (WHO) and the World Bank have made it their top health priority.

Answering their call for "Health for all" would not only help countries deal with outbreaks of diseases – it would put the world on track to **end all preventable child deaths** in a generation.

AFFORDABLE AND REALISTIC

Some argue that universal health coverage is unaffordable for poor countries. However, our evidence paints a different picture. Save the Children believes universal health coverage is within our reach. Even low-income country governments can and must spend more on health, first by raising greater domestic resources by improving their tax systems, and then by allocating more of their available funds to health. The international community, including the International Monetary Fund, needs to encourage these governments to increase spending on health to a minimum of $86 per capita per year.

This report shows how the countries in the Health Access Index can close an estimated $101 billion gap in the cost of a providing health services to all their populations. All countries could make progress towards spending $86 of public funds per person on health by achieving international targets of 20% of gross domestic product collected as tax revenue, and allocating 15% of government budgets to health. Curbing illicit financial flows and tackling tax avoidance, as well as putting in place innovative taxes, can also help close the gap.

For many of the poorest countries, there will continue to be a need for external aid to support essential health services well into the future. Ebola must also be a wake-up call for international donors to ensure that they are supporting all countries to build comprehensive health services, ones which can tackle all health threats, not just their chosen priorities. This includes multilateral aid mechanisms – such as Gavi, the Vaccine Alliance; the Global Fund to Fight AIDS, Tuberculosis and Malaria; and the new proposed Global Finance Facility for reproductive, maternal and child health – which must always be able to demonstrate how they are building comprehensive and universal health services, even if they focus on specific services or diseases.

2015: A HISTORIC OPPORTUNITY

Spurred by the wake-up call of Ebola, 2015 presents the opportunity to act now and make a historic shift – not just for the three countries hit by the Ebola outbreak, but for all poor countries. In September, the United Nations will agree the global development agenda for the next 15 years. Universal health coverage – the principle that everyone must have access to an essential package of healthcare, free at the point of use – must be at its centre. Save the Children is calling on all actors to:

- **Maintain the international response** to help Guinea, Liberia and Sierra Leone achieve zero new Ebola infections.
- **Invest in rebuilding the health systems of Sierra Leone, Liberia and Guinea**, ensuring essential health services are available to all now and into the future, still free at the point of use.
- **Strengthen and invest in national preparedness plans** in those countries and internationally – including public health surveillance, alert and referral systems, and supply chain systems that can rapidly act in an emergency and respond to outbreaks of diseases.
- **Commit to building systems of universal health coverage in all low- and middle-income countries**, increasing investment in comprehensive health services which prioritise essential services that are free to all – including services to tackle infectious disease outbreaks, and maternal and child health. This will require governments to raise and spend more public money by raising fair taxation, moving away from out-of-pocket payments, and clamping down on tax avoidance and evasion. It will require bilateral donors and multilateral initiatives to be aligned in support of comprehensive and universal health services.
- **Ensure that the Sustainable Development Goals** commit to end preventable child deaths, reduce inequalities and support universal health coverage.



PHOTO: KRISTA ARMSTRONG/SAVE THE CHILDREN

FATOU, EBOLA SURVIVOR

Fatou, age four, used to live with her large extended family in her grandmother's house. Then one by one her family fell sick with Ebola. The disease killed her grandparents, her brother, her uncle, and other relatives.

Shortly afterwards, Fatou herself started to show symptoms consistent with Ebola. Her uncle rushed her to hospital, where she tested positive, and was taken to the Save the Children-run Ebola Treatment Centre in Kerry Town.

Fatou spent two weeks at the Centre, looked after by carers and the clinical teams on the ward. At first, the trauma of this experience hung over Fatou, who avoided eye contact, sitting quietly, not talking to anyone. When her uncle Mohamed arrived, she rushed into his arms and did not leave his side.

"We did not expect her to survive," Mohamed told us. "She contracted the virus in the same way as our other relatives, and they all died. We were so worried and confused, but today we see she is better and she is cured. I am so happy that she survived."

1 EBOLA: LEARNING THE LESSONS

HOW WEAK HEALTH SERVICES FAILED TO STOP THE SPREAD OF EBOLA

In December 2013, the first case of a new Ebola outbreak occurred in Guinea. Over one year later, the size and scale of this outbreak is unprecedented and ongoing. By 18 February 2015, 23,218 cases had been reported, with 9,365 deaths.[2] Ebola is devastating communities; children have been particularly affected. As well as the deaths from Ebola, it is calculated that the breakdown of daily healthcare, as services struggle to contain Ebola, has led to dramatic reductions in essential prevention and care services. There has also been long-term damage to education, other service sectors and the broader economy.

This crisis has rightly gained global attention, not least because of the fear of it passing across borders and causing a pandemic. Transmission of the virus in hospitals in Spain and the USA helped to focus the world's attention on the challenge of bringing Ebola under control. The governments of the three affected countries, donor countries, UN agencies, international health organisations, non-governmental organisations and health professionals have all acted to try to contain this outbreak, at great human and financial cost. Save the Children has been one of the agencies playing its part.

Guinea, Liberia and Sierra Leone have required a huge amount of external support to help them deal with the outbreak. But the crisis has also highlighted the state of their health services before the crisis hit. For a long time, health services in all three countries have been weak, underfunded, understaffed, fragmented and unable to provide for the daily health needs of their populations. As Jim Yong Kim, President of the World Bank Group, said: "Ebola spread so quickly in part because of weak health systems in Guinea, Liberia, and Sierra Leone."[3]

This point has been acknowledged by many leading commentators,[4, 5] including Amartya Sen, who said, "Had there been effective [health services] in the countries of origin of the disease, this problem could have been mitigated or even eliminated."[6]

Similarly, the WHO Bulletin stated: "The current Ebola virus disease outbreak in western Africa highlights how an epidemic can proliferate rapidly and pose huge problems in the absence of a strong health system capable of a rapid and integrated response."[7]

The circumstances and reasons for the Ebola virus spreading are complex, as are the reasons some countries were able contain its spread and some were not (see below). Inadequate health services did not make the spread of Ebola inevitable; they were not the only determining factor. However, the response to the Ebola outbreak would have been faster and stronger if there had been strong public health functions that could have identified the disease earlier and acted more quickly to contain and prevent it.

A strong response required a health system with sufficient infrastructure, health workers, supplies and equipment, as well as adequate financing and robust information management, in order to treat all people, isolate suspected cases, prevent transmission in health facilities and engage with the public about how to prevent transmission. And stronger health services with sufficient staff and resources would have been better able to maintain other health functions at the same time as dealing with the Ebola crisis. Instead, these functions were dramatically reduced, not least because the public did not trust health facilities to be safe places free of infection.

The state of health services in Guinea, Liberia and Sierra Leone was no secret. Although the governments of these three countries and their donor supporters had made efforts to improve healthcare, these had not achieved properly functioning and adequate services. The levels of investment and action had been insufficient.[8] As we show in chapter 2, this situation is far from unique to these three countries.

EBOLA VIRUS DISEASE[9]

Ebola Virus Disease (referred to throughout this paper as 'Ebola') was first identified in 1976 in outbreaks in Sudan and in the Democratic Republic of Congo (then Zaire) – near the Ebola river. The virus occurs in humans and other primates and its circulation among humans is uncommon. It is widely thought to originate from fruit bats, although this is not confirmed, and it may be introduced into humans through tissue or bodily fluids of an infected animal.

The virus is passed between people through direct contact through broken skin or mucous membranes with the blood, or other bodily fluids or secretions (stool, urine, saliva, semen, breast milk) of infected people. Healthcare workers are especially vulnerable if caring for a sick patient. Burial ceremonies, and in particular the preparation of the body for burial, have also played a key role in transmission.

The World Health Organization has set out the package of interventions needed to prevent and control Ebola.[10] Key to this are social mobilisation, disease surveillance, identification, isolation, contact tracing, case management, and safe and dignified burials. Gloves and appropriate personal protective equipment should be worn when taking care of ill patients. Outbreak containment measures include prompt, safe and dignified burial of the dead, identifying people who may have been in contact with someone infected with Ebola, monitoring the health of contacts for 21 days, separating the healthy from the sick to prevent further spread, the importance of good hygiene and maintaining a clean environment.

THE HIDDEN CRISIS: THE WIDER IMPACT OF THE EBOLA EPIDEMIC

> *"This is one of the biggest lessons the world learned last year. Well-functioning health systems are not a luxury. Well-functioning health systems are the cushion that keeps sudden shocks from reverberating throughout the fabric that holds societies together, ripping them apart."*
>
> Margaret Chan, World Health Organization Director-General, 2015[11]

While the Ebola outbreak has had a devastating immediate effect, its indirect impact on children in Liberia, Sierra Leone, and Guinea is no less threatening. Routine healthcare services collapsed. With 830 health workers infected and 488 reported deaths of health workers from Ebola,[12] many health facilities were forced to shut down; others became associated with Ebola transmission, deterring people from seeking care. The pre-existing weakness of the underfunded and understaffed health services meant that there was not the capacity to deal with Ebola cases and to maintain routine everyday health services.

Restricted access to health services is particularly affecting children and pregnant women. In the Monrovia suburb of Clara Town, 97% of children had routine vaccinations before the outbreak, but at the height of the epidemic only 27% were getting protected against common threats.[13] In Sierra Leone, coverage of the measles vaccine has fallen by 20% across the country in a year. There has been a surge in measles cases in affected countries – three to four times more than in the previous year.[14] In Sierra Leone there was a 40% fall in the number of children under five treated for malaria between May and September 2014.[15] Antenatal checks for pregnant women were down by a third in Sierra Leone between May and September.[16] In Liberia, the proportion of pregnant women receiving prenatal care halved from the previous year (from 49% to 25%).[17]

The Ebola outbreak has also led to food shortages caused by travel restrictions and smaller harvests. These food shortages, combined with drastically reduced access to health services, have resulted in a serious risk of acute malnutrition in children under the age of five and their families.[18] The nutrition-related improvements seen in Liberia in the decade following the end of the conflict and prior to the current Ebola outbreak are being reversed by the current crisis. The number of individuals made food insecure by Ebola is estimated in hundreds of thousands in each country and is expected to rise in 2015.[19]

In September 2014, UNICEF warned that 1.5 million children in Liberia alone were affected by the closure of schools.[20]

The outbreak is also having a devastating economic impact. The World Bank estimates that the financial cost of the Ebola outbreak to the region over a two-year period ranges from $3.8 billion if the epidemic is relatively low-level to a "high Ebola" estimate of $32.6 billion.[21]

HEALTH SERVICES IN GUINEA, LIBERIA AND SIERRA LEONE BEFORE THE EBOLA CRISIS

To appreciate some of the reasons behind the failure to contain this outbreak, we must understand the inadequacies of the health services of Guinea, Liberia and Sierra Leone before Ebola struck. The World Health Organization (WHO) defines a health system as all the people, resources, policies and activities whose primary purpose is to promote and maintain health.[22] It identifies six interrelated components of a health system:

- the health workforce
- financing
- equipment, medicines and supplies
- the delivery of services
- data and information systems
- the way in which it is governed.[23]

Systems must also have close links to communities, to ensure that they can reach people through health promotion, awareness-raising and health education.

All three countries had made commendable progress in reducing child mortality in the years following protracted periods of conflict in the region. In Liberia, child mortality rates had more than halved, from 151/1000 in 2002 to 71/1000 in 2013 and the country is on track for meeting MDG4. However, judged against these six components, it is clear that the health services of Sierra Leone, Guinea and Liberia were, in their different ways, inadequate.[24]

CRITICAL SHORTAGES OF HEALTH WORKERS

A health system relies on having enough health workers with the availability, knowledge, skills and motivation to deliver necessary services for the population. WHO calls for countries to have a minimum of one health worker (a doctor, nurse or midwife) per 439 people.[25] This level is regarded as the *bare minimum* to allow a country to provide adequate coverage of essential services. The UK has one health worker for every 88 people.[26] Against this, it is estimated that a billion people never see a health worker throughout their lives.[27]

According to the most recent data – compiled before the Ebola outbreak – Guinea had only one health worker per 1,597 people, Liberia one for every 3,472 people and Sierra Leone one per 5,319 people.[28] Liberia had only 51 doctors for the whole country and Sierra Leone 1,017 nurses and midwives.[29] It is likely that these health workers were unevenly distributed across their countries, and already overwhelmed by their workload, and had limited training in infection control and inadequate supplies.[30] Health workers have been particularly at risk of becoming infected, due to shortages of protective equipment, insufficient numbers of staff and long working hours.[31] At the time of writing this report, 488 health workers across these three countries had died in the fight against Ebola, depriving the countries, as WHO put it, "not only of experienced and dedicated medical care but also of inspiring national heroes".[32]

Liberia established an Emergency Human Resources Plan in 2007 to rebuild its workforce after many years of armed conflict. Between 2006 and 2010, the number of nurses more than doubled, but was still very low and unevenly distributed across the country.[33] Addressing the shortage of health workers also requires significant investments in the education sector. Just 15 of the 13,000 high school graduates who sat the University of Liberia entrance exams in August 2014 passed.[34] In Sierra Leone, despite a recent salary increase, health worker salaries remain low, particularly for nurses and midwives. Plans were in the process of being implemented to increase the supply of health workers, especially for hard-to-reach areas, although little progress had been made prior to the Ebola outbreak. There was a particular shortage of staff for maternal and child health.[35]

At different layers of the health system, from the centre to the periphery, leadership and expertise in epidemic control were missing, exposing overstretched frontline staff to the consequences of managing highly infectious patients with inadequate training, supervision and supplies. These systemic weaknesses led to health worker strikes and

walkouts, which further reduced access to isolation and treatment. From an emergency preparedness perspective, the Ebola epidemic highlighted the dearth of trained, in-country capacity to respond to epidemic diseases. Guinea has a public health institute but this has limited capacity for epidemiological surveillance. The country would benefit from a reinforced institute as well as a public health school or dedicated programme at the medical university to train health workers in this area.

INADEQUATE FINANCING OF HEALTH

It is estimated that $86 per capita per year is the minimum required to provide essential services for a population.[36] In addition, the way that healthcare funding is raised determines whether a system provides healthcare for the whole population or favours those who can afford to pay. Looking at public funding for health, in 2012 (the most recent year with available data, pre-dating the Ebola outbreak), the governments of Guinea, Liberia and Sierra Leone spent far less than $86 per person on health:[37] $9, $20, and $16 per person each year respectively (see page 24 for further discussion).[38] Nevertheless, those figures are an increase in all three countries from 2006 figures of $3, $3, $12 respectively). Liberia was one of the few sub-Saharan African countries achieving the 15% of national budget to health target, although this was of a very low national budget. Most high-income countries spent many hundreds of times those amounts, with public funding for health in Germany at $3,592, in the UK at $3,009, in the USA at $4,126, and in Norway at $7,704.[39]

WHO recommends that if out-of-pocket expenditure is above 10–20% of a country's total health funding, it is likely to push poor people into poverty. Sierra Leone and Guinea have particularly high shares of out-of-pocket expenditure in relation to total health spending at around 76% and 66% in 2012 respectively.[40] In Liberia, where all health services have been free at the point of use, this is much lower at 21%.

All three countries received aid for health from donor countries and support with preferential loans from the World Bank, although notably Guinea received far less than the other two. Sierra Leone received $93m in external support for health in 2010, Liberia $89m and Guinea $46m.[41] This aid was not enough to fill the gap in funding and, crucially, only a proportion of it was given to the government to support its health services (such as the UK's $16 million over five years to support the Free Health Care Initiative in Sierra Leone[42]). Instead, much donor money was provided for specific disease projects, with their own reporting requirements and not included in the government's budget. For example, WHO's analysis notes that 65% of aid for health to Liberia was allocated for specific projects on HIV, tuberculosis or malaria in 2010.[43]

LACK OF ACCESS TO MEDICAL PRODUCTS, VACCINES AND HEALTH TECHNOLOGIES

In the three affected countries, many years of underfunding have left the health systems critically short of the equipment, staff, drugs, and health facilities needed to implement effective daily healthcare and infection-control measures.[44] Too few beds and treatment centres were available to isolate and treat people infected with Ebola and supplies of effective personal protective equipment, disinfectants and basic medical supplies were also inadequate.[45, 46] Health workers in Liberia went on strike because, among other things, they lacked the personal protective equipment to protect themselves while treating patients.[47] The lack of qualified national reference laboratory capacity precluded timely identification and surveillance of Ebola.

Access to medicines continues to be a major problem for Guinea, Sierra Leone and Liberia. Life-saving essential medicines and equipment are often unavailable, expensive, physically inaccessible or of poor quality.[48] In Guinea, for example, drastic shortages of basic medicines after the coup, combined with the high price of privately provided drugs,[49] led to the re-emergence of a black market for medicines.[50] In Sierra Leone, drugs intended for the Free Health Care Initiative were found to be diverted, being sold to patients, retail pharmacies and private sellers at public healthcare facilities.[51]

SERVICE DELIVERY

Good service delivery within a health system[52] requires primary care services that are physically accessible within reasonable travel time, especially in an emergency. Facilities need to be open to all and free at the point of use, and the population must be able to assume that they will find the staff, medicines and equipment they need. Services must be comprehensive – including health promotion and preventative services, as well as curative

activities. They must also be well coordinated across levels of provider, with adequate referral and supply systems able to distribute medicines, drugs and supplies across the country.

For Liberia, Sierra Leone and Guinea, evidence has highlighted the poor state of these health services prior to the outbreak. All three countries had improved the delivery of health services in recent years. For example, Sierra Leone increased its immunization coverage increase from 53% in 2002 to 93% in 2012.[53] However, all three countries still have some of the highest rates of maternal and child deaths worldwide.[54]

Laboratories were few in number and concentrated in cities. The lack of qualified national reference laboratory capacity precluded timely identification and surveillance of Ebola. Many large referral hospitals had no electricity and running water or were unsafe because of the risk of electrical fires and floods. Inadequate logistics systems slowed the response by failing to distribute those medical supplies that were available where and when they were needed. For instance, in September, 60,000 pairs of gloves were stored in a central warehouse in Liberia, but none were available in the health centres the warehouse supplied.[55]

Sierra Leone had recognised its severe shortages of infrastructure, supplies and equipment.[56] The Free Healthcare Initiative (FHCI) was introduced in April 2010[57] to address the high rates of maternal and child mortality by removing user fees from public maternal and child health services. The FHCI was met with a big rise in demand for services – but as the supply of services was not improved at the same rate (including the supply of health workers), this meant many people's need for services were unmet, and the demand for services has been gradually dropping since then.[58, 59] Research has shown that many people preferred to take their children to traditional healers even after FHCI was introduced.[60] Widespread distrust of health services and a corresponding lack of care-seeking at the few facilities that were available were important aspects of the spread of Ebola,[61] with some infected people staying in their communities because they were unable to access treatment or mistrusted the health services. This put others at risk of onward transmission.[62]

Despite great investments following the end of the conflict, Liberians continued to have limited access to life-saving health care, especially in rural areas, according to research.[63] There are disparities in Liberia in the services available to the population with more frequently available services (such as HIV-testing and malaria treatment) representing diseases favoured by bilateral and multilateral health sector donors.[64] In particular, there was enormous unmet need for maternal health services, and a need for improved systems that allow patients to be referred from community to facilities.[65]

Guinea faced similar challenges, with the rate of caesarean sections, for example, far beneath the need among the poorest 80% of the population – showing the near-total lack of emergency services for the majority of the country's women and newborns.[66]

INFORMATION SYSTEMS

All three Ebola-affected countries lacked well-functioning health information systems, able to collect and provide reliable and timely information that planners, health workers and decision-makers require to tailor services to need. This includes health statistics and information on the distribution and use of services. An information system plays a key role in providing an early warning capability, such as the system Nigeria had for polio eradication and which was adapted to use for Ebola (see page 7).

Guinea's weak health management information system was fragmented into sub-national sub-systems. Liberia's health information system did not cover the largest hospital or most of the smaller facilities in rural areas. Sierra Leone had developed a district-level health information system, but it was still weak.[67] In terms of disease surveillance, none of the affected countries attained the minimum International Health Regulations (2005) core capacities requirements by 2012. The Integrated Disease Surveillance and Response guidelines were implemented in Guinea, but only adapted for Liberia, and did not start implementation in Sierra Leone.[68]

GOVERNANCE OF HEALTH SYSTEMS

The different elements of health systems cannot be delivered without strong governance, able to provide effective oversight for health. Many factors are at play when talking about governance – from whether a system is decentralised to whether there are existing protocols and guidelines in place for responding to different diseases. The ability of the government to drive an effective reform agenda is crucial. So

is participatory governance to enable citizens to influence decisions.

Recovering from civil war, Liberia's health services were extremely fragmented. The majority of services were provided by donors, NGOs and faith-based organisations. Reforms to the health service, including the decision to remove fees, had brought improvements but, before Ebola, there was concern that donor interest was waning and health might suffer from government spending cuts.[69] In Sierra Leone, despite health becoming a presidential priority with the Free Health Care Initiative, governance was still weak, with an absence of accountability mechanisms, policy and institutional incoherencies, and district teams unable to act without decisions at national level. This was seen as undermining people's trust in services and hampering healthcare utilisation.[70] The Ebola crisis showed that poor governance of health systems in Guinea, Sierra Leone and Liberia weakened the responsive capacity of their health systems, and has highlighted the need to build stronger institutions and to establish accountability mechanisms.[71]

The weak health systems that allowed this Ebola outbreak to spread so far and fast in Guinea, Liberia, and Sierra Leone are not unique to these three countries. In this report, Save the Children argues that the Ebola crisis must be a wake-up call to address the scandal of the inequality of health care access across the world.

THE INTERNATIONAL RESPONSE

It is not only the national health systems of Guinea, Liberia and Sierra Leone that could not cope well. The international system did not respond rapidly enough nor function as required in the early part of the outbreak. WHO did not declare an international public health emergency until August 2014 – long after Médecins sans Frontières (MSF) had begun warning that this Ebola outbreak was very different from the previous rural outbreaks. Most international donors did not come forward with sufficient funding for the response and certainly not quickly enough.

By 16 January 2015, only 77% of the estimated $1.5 billion international fund needed for the six-month period October 2014–March 2105 had been contributed.[72]

The crisis has led to a renewed interest in the capacity of the international health architecture to respond to global health threats. The International Health Regulations have, since 2007, put obligations on all countries to help the international community identify and respond to acute public health risks that have the potential to cross borders and threaten people worldwide. Disease surveillance systems[73] are needed with strong regional networks for better forecasting and control.[74] There will be much international debate about why existing disease surveillance systems did not work successfully and what needs to change in future, including why 40 countries introduced more restrictive entry rules than required, risking hampering the international response.

WHO's actions and governance system have come under renewed scrutiny, with criticism of the autonomy of its regions and the political nature of elections of officials.[75] In addition, WHO has suffered reductions in the proportion of its budget that can be used flexibly. This partly explains why its budget for responding to crises and outbreaks fell by 50% from $469 million in 2012/13 to $228 million in 2014/15, just at the time that it was needed to respond to Ebola.[76] This budget cut reduced the emergency response capacity within the UN system and, by extension, the type and quality of technical advisory support available at national level to ministries of health. International NGOs were also slow to respond to the crisis – with MSF a notable exception.

The lack of research and development into drugs that affect poor countries has been highlighted in the past by Save the Children and others. For Ebola, specifically, there are still no approved vaccines or medicines, largely because there was little financial incentive for their development. Potential vaccines were known but were not pursued and sufficient public funding was not made available.[77]

WHY DID EBOLA SPREAD IN SOME COUNTRIES AND NOT IN OTHERS?

A wide range of factors affected whether countries identified Ebola and acted fast enough to contain any spread. Ebola was spread much faster than previous outbreaks in Central Africa and, for the first time, it spread in urban areas. West Africa had never experienced Ebola, so was unprepared. Practices associated with death and burial in this region contributed to its transmission.

However, Senegal, Mali and Nigeria were all able to act fast with cases that arrived in their countries and were able to prevent widespread transmission, despite having health systems that could have been easily overwhelmed by an outbreak on the same scale as Guinea, Sierra Leone and Liberia (see Table 1). The WHO papers on the first anniversary of Ebola note that, "At-risk countries had a distinct advantage by the summer of 2014. They had witnessed the tenacity of the virus, and the social and economic devastation it caused, and were on high alert to respond to an imported case as a national emergency."

Senegal, Mali and Nigeria knew which countries might be the source of infected arrivals. Having seen the epidemic growing in neighbouring countries, they had time to prepare themselves. All three countries had their own high-quality laboratories, facilitating the rapid detection of cases. Contact tracing in Senegal, Mali and Nigeria was rigorous, with most identified contacts monitored in isolation.

In Nigeria, a man travelling from Liberia fell sick on arrival at Lagos Airport and went to a private hospital. He was not initially diagnosed as having Ebola. Nine health workers became infected. There was global alarm at the prospect of Ebola spreading to crowded slums of Lagos, where health access is far from universal or equitable. However, contact tracing was rigorous and Nigeria adapted a surveillance system established in 2012 to help eradicate polio, using doctors with international training in epidemiology. Within two weeks Nigeria opened a first isolation ward; sufficient personal protective equipment and medical supplies were quickly provided. The virus did not spread into the densely populated areas of Lagos. Nigeria's response has been hailed as a "spectacular success story".[78]

TABLE 1 SELECTED HEALTH SYSTEM INDICATORS IN COUNTRIES THAT HAVE REPORTED CASES OF EBOLA[79]

Country	Number of people per physician (latest available 2005–12)	Number of people per nurse or midwife (latest available 2005–12)	Government expenditure on health 2012 (per capita, US$)	External funding for health in 2010 (current US$m)	Under-five mortality rate (per 1,000 live births, 2013)	Adult mortality rate (per 1,000 people aged 15–60, 2012)	Age standardised DALYs (per 100,000 people, 2012)
Guinea	10,000	n/a	9.0	78	101	291	72,518
Liberia	71,429	3,650	19.5	70	71	263	62,373
Mali	12,048	2,326	16.4	140	123	278	75,910
Nigeria	2,451	623	29.4	967	117	358	84,764
Senegal	16,949	2,381	28.6	142	55	218	53,970
Sierra Leone	45,455	6,024	15.9	107	161	435	117,683
Spain	271	197	2,065.3	n/a	4	63	16,984
UK	366	116	3,009.4	n/a	5	73	20,376
United States	408	102	4,126.1	n/a	7	103	22,775



PHOTO: DAN STEWART/SAVE THE CHILDREN

UMAHAWA, A HEALTH WORKER

Umahawa is the health worker in charge of a community health centre in Sierra Leone. The rapid spread of Ebola has had a huge impact on the community and the health centre is now facing a host of new challenges.

Umahawa told us how people who were helping in the centre have fled in fear of the disease, while NGOs working in the region are at full capacity.

Umahawa said, "A lot of things have come to a standstill because of Ebola."

She said, "I am afraid that Ebola is jeopardising the sustenance that free healthcare gives. Most mothers have stopped coming with their children to be immunised. And they are not coming for their rations – even when their children are malnourished.

"People are staying in their homes, for fear of catching Ebola, and it's stopping us from trying to combat malnutrition in our communities.

"People shouldn't just sit at home being afraid of Ebola, because there are other dreadful conditions that can kill as well. Conditions like malaria, hepatitis, and pneumonia or acute respiratory tract infections, which can kill children within a short time.

"If people don't come to the centre, we are afraid that a lot of diseases will emerge again."

PREVENTION IS BETTER THAN CURE

Attention is rightly focused on responding to Ebola now, and building the recovery in the three most affected countries. There has now been a good response from national governments, international organisations and the private sector to funding the response to the outbreak and starting to fund the recovery. As of 17 December 2014, a total of $4.3 billion has been pledged for the Ebola response.[80] This includes bilateral support in tackling the epidemic (in kind and in cash) and support for economic stability. By 22 December 2014, $1.85 billion of these funds had already been disbursed.[81] On 3 March 2015, the international community will meet to discuss how to reach the goal of zero cases and the Presidents of Guinea, Liberia and Sierra Leone will outline initial priorities for recovery.

In addition to the direct costs of responding to Ebola, the World Bank has estimated that the economic consequences of the crisis for the three countries in 2015 imply lost income of well over $2 billion (over $250 million for Liberia, about $1.3 billion for Sierra Leone, about $800 million for Guinea). Across the region, costs could range from a "low Ebola" estimate of $3.8 billion to a "high Ebola" estimate of $32.6 billion.[82] The massive losses of trade and income for the economies of the affected countries will have implications on their ability to pay for key public services such as health and education as they recover from the crisis.

By contrast, in 2012, before the Ebola outbreak, the governments of Liberia, Sierra Leone and Guinea collectively spent an estimated $280m on their health services.[83] A similar amount was provided to these countries as aid for health in 2010;[84] some of this would have been included in government figures if it was provided through the national budget.

Funds pledged for the Ebola response so far are therefore **15 times** the combined annual government health budgets of the three countries.

When we compare what these three countries were spending on health in 2012 and the annual cost of providing universal health coverage with a minimum essential package of services – recommended at $86 per person[85] – to their combined population of 22 million, we estimate a gap of US$1.58 billion per year.[86] This is just under a third of what Ebola has cost so far. While universal health coverage would not have stopped the initial spread of Ebola in these countries, and could not have provided all of the activities needed to stop the epidemic, a stronger health service could have acted faster and more comprehensively, contained the spread faster, and ensured that people had the care and the dignity they are entitled to.



PHOTO: IVY LAHON/SAVE THE CHILDREN

ANTHO AND KABA

Antho watches over her son Kaba, two, who is being treated for cerebral malaria at the Tshilundu Referral Hospital in Kasai Oriental Province, DRC. Kaba is now in a coma.

Antho is nine months pregnant. This is her eighth pregnancy; she had two miscarriages and a daughter who died of malaria aged just eleven months because the clinic they took her to was closed when they arrived. This is not unusual: many local clinics in DRC are under equipped and under staffed.

Kabu is receiving medicines for malaria, but Antho doesn't know how she is going to pay for these – or for the delivery of her new baby.

Antho's worries are not unusual. User fees at facilities either prevent people from accessing the care they need or lead to impoverishment.

Save the Children is helping – we provide essential free medicines and equipment to under-equipped health centres like the one where Kabu is being treated. But the scale of the health crisis is enormous and has required significant increases in investments from the government as well as international donors. According to WHO, public spending on health was just $7.80 per person in 2012, against a recommended $86 needed to deliver essential services.

2 THE 2015 HEALTH ACCESS INDEX

BEYOND EBOLA: THE STATE OF HEALTH SERVICES IN THE WORLD'S POOREST COUNTRIES

The circumstances and reasons for the Ebola virus spreading are complex, covering prevention, early warning and response, and the particular country contexts. The previous chapter highlighted one of the most important lessons from the Ebola outbreak – the need to invest in health services.

Sierra Leone, Guinea and Liberia were not unique in having weak and inadequate health services before the Ebola outbreak. The health systems of many low-income countries are understaffed and underfunded. Most people do not have access to anything approaching the essential services that they have a right to expect. Many other countries are equally at risk of an epidemic of Ebola or another infectious disease.

Save the Children has compiled data to look at the state of health services in the 75 'Countdown to 2015' countries, which have the highest burden of maternal and child mortality.[87] This Health Access Index ranks countries in terms of access to and use of health services, including by the poorest communities.

There are many indicators that can show the strength of health services or the likelihood of people getting health services when they need them.

The indicators chosen here combine:

- inputs: the number of health workers for the population and the level of government spending on health suggest whether a country can provide sufficient services
- outputs: the degree to which health services are being delivered – for example, providing access to basic immunisation services and good-quality care around birth whenever it happens
- outcomes: the newborn mortality rate is a key marker to show the strength of a health system in reaching mothers and babies with effective, good-quality care at the time of birth.

In compiling the Index, we also looked at equity – the level of fairness in the provision of services across the whole population.

Table 3 shows the full ranking of the 75 Countdown to 2015 countries. The Health Access Index reveals that, while Guinea ranks at 65 (eight places from the bottom out of the 72 countries for which data is available), the other two countries affected by this Ebola outbreak are not among the lowest group of countries in the Index: Liberia is at 44 and Sierra Leone at 46. Both these countries had made important progress in the years before Ebola hit, including improving fairness of access to services such as skilled birth attendance, by removing cash payments from their public health services. According to our ranking, 28 countries have worse access to health than Liberia.

TABLE 2 INDICATORS USED IN THE 2015 HEALTH ACCESS INDEX

Indicators used in the 2015 Health Access Index	**Date, source of data**
Health outcomes: Newborn mortality rate (per 1,000 live births)	2013, UNICEF reported in December 2014
Provision of services: Density of health workers per 10,000 people	Latest available, Countdown 2014 report[89]
Financing of services: Public health expenditure per capita, international $	2012, WHO, Global Health Expenditure Database[90]
Utilisation of services: Skilled birth attendance	UNICEF, latest available at December 2014
Utilisation of services: Immunisation (DPT3 coverage)	UNICEF, latest available at December 2014
Equity in service coverage: Ratio between the richest and the poorest quintiles of skilled birth attendance	UNICEF, latest available at December 2014

For further details on the data sources and methodology used in compiling the Health Access Index, see the Appendix (page 30).

TABLE 3 FULL RESULTS OF THE HEALTH ACCESS INDEX

Rank	Country	Density of doctors, nurses and midwives (per 10,000 population)	Per capita government expenditure on health, 2012 (US$)	Skilled attendant at birth – percentage, 2013	Immunisation (DPT3) – percentage, 2013	Neonatal Mortality Rate (per 1,000 live births, 2013)	Ratio between the richest and poorest in SBA, 2013
1	Brazil	94.9	490.4	98.1	95.0	8.4	1.3
2	Kyrgyzstan	80.9	50.6	99.1	97.0	13.3	1.0
3	Uzbekistan	143.6	56.0	99.9	99.0	14.1	1.0
4	Azerbaijan	101.2	90.6	99.4	93.0	15.9	1.3
5	Egypt	63.5	59.2	78.9	97.0	11.8	1.8
6	South Africa	56.8	308.7	91.2	90.0	14.8	1.4
7	Tajikistan	63.8	16.3	87.4	96.0	21.9	1.3
8	Turkmenistan	132.2	81.5	97.2	98.0	23.2	1.2
9	Gabon	53.1	203.1	89.3	79.0	22.8	1.3
10	Peru	26.5	198.7	86.7	88.0	8	1.7
11	Solomon Islands	22.8	142.0	85.5	83.0	13.2	1.3
12	China	29.7	180.0	99.8	99.0	7.7	3.3
13	Sao Tome and Principe	23.6	34.6	81.7	97.0	19.4	1.3
14	Vietnam	23	43.6	92.9	59.0	12.8	1.4
15	Botswana	31.8	216.5	94.6	79.0	24.9	1.2
16	Congo	9.2	73.7	92.5	85.0	19.4	1.3
17	Indonesia	15.9	42.7	83.1	86.0	14.4	1.7
18	Mexico	46.2	320.3	96.0	83.0	6.5	3.7
19	Morocco	15.1	63.7	73.6	99.0	17.9	2.5
20	Philippines	71.5	34.8	72.2	94.0	13.7	3.7
21	Rwanda	7.5	37.9	69.0	99.0	20.1	1.4
22	Iraq	6.1	121.2	90.9	78.0	18.7	1.2
23	Swaziland	17.7	192.3	82.0	98.0	29.8	1.4
24	Bolivia	14.8	106.7	84.0	80.0	17.9	2.6
25	Cambodia	10.1	13.7	71.7	92.0	17.6	2.0
26	Uganda	14.2	10.4	57.4	97.0	22.1	2.0
27	Benin	8.3	17.0	80.9	93.0	26.9	1.6
28	Gambia	9.7	16.9	56.6	98.0	28.1	1.7
29	Malawi	3.6	18.8	71.4	89.0	23.2	1.4
30	Comoros	8.9	21.1	82.2	83.0	30.8	1.4
31	Equatorial Guinea	8.4	617.8	68.3	24.0	33.2	1.8
32	Guatemala	18.3	80.4	52.3	85.0	14.8	4.7
33	Senegal	4.8	28.6	65.1	92.0	23	3.2
34	Burkina Faso	6.1	20.5	65.9	88.0	26.9	2.0
35	Burundi	2.2	11.9	60.3	96.0	29.8	1.6
36	Djibouti	10.3	77.1	87.4	82.0	31.2	4.5
37	Myanmar	16.2	4.7	70.6	75.0	25.5	1.9

TABLE 3 *continued*

Rank	Country	Density of doctors, nurses and midwives (per 10,000 population)	Per capita government expenditure on health, 2012 (US$)	Skilled attendant at birth – percentage, 2013	Immunisation (DPT3) – percentage, 2013	Neonatal Mortality Rate (per 1,000 live births, 2013)	Ratio between the richest and poorest in SBA, 2013
38	United Republic of Tanzania	2.5	16.3	48.9	91.0	20.7	2.9
39	Ghana	10.2	47.4	68.4	90.0	29.3	2.5
40	Madagascar	4.8	11.1	44.3	90.0	21.4	2.7
41	Angola	18.3	118.4	47.3	93.0	46.6	3.7
42	Côte d'Ivoire	6.3	24.2	59.4	99.0	37.5	2.6
43	Democratic Republic of Congo	6.4	7.8	80.4	87.0	38.2	1.4
44	Liberia	2.9	19.5	46.3	89.0	25.6	3.2
45	Mauritania	8	33.1	65.1	80.0	34.8	3.6
46	Sierra Leone	1.9	15.9	59.7	92.0	44.3	1.6
47	Kenya	9.7	17.0	43.8	84.0	26.3	4.0
48	Lesotho	6.7	108.3	61.5	66.0	43.9	2.6
49	Nepal	6.7	14.2	36.0	92.0	23	7.6
50	Papua New Guinea	5.1	94.4	53.0	68.0	24	3.3
51	Yemen	8.7	19.4	35.7	88.0	24.3	4.3
52	Zambia	8.5	61.6	46.5	79.0	29.3	3.4
53	Bangladesh	5.7	9.0	34.4	92.0	24.2	3.9
54	Eritrea	6.3	7.8	34.1	94.0	17.7	10.5
55	India	24.1	20.3	52.3	76.0	29.2	3.6
56	Cameroon	5.2	19.8	63.6	89.0	28.2	5.1
57	Pakistan	14	12.4	52.1	66.0	42	2.9
58	Sudan	11.2	26.8	23.1	93.0	29.9	10.5
59	Togo	3.3	21.0	59.4	84.0	30.4	3.4
60	Lao, PDR	10.6	20.6	41.5	87.0	29.1	8.4
61	Mozambique	4.5	16.5	54.3	78.0	30.4	2.8
62	Guinea-Bissau	6.6	6.8	43.0	96.0	44	3.6
63	Mali	5.1	16.4	56.1	76.0	40.2	2.9
64	Niger	1.6	10.1	29.3	92.0	27.5	6.0
65	Guinea	6.1	9.0	45.3	90.0	32.8	4.9
66	Central African Republic	3.1	8.8	53.8	28.0	43	2.6
67	Ethiopia	2.8	8.5	10.0	82.0	27.5	26.8
68	Haiti	3.6	12.0	37.3	85.0	24.9	8.1
69	Afghanistan	7.3	10.7	38.6	90.0	36.3	4.9
70	Nigeria	4.1	29.4	38.1	65.0	37.4	15.0
71	Chad	2.3	14.1	22.7	80.0	39.8	7.6
72	Somalia	1.5	1.7	33.0	34.0	46.2	7.2

Data not available for South Sudan, DPR Korea, Zimbabwe

CREATING THE INDEX

Table 2 shows the indicators used in the 2015 Health Access Index. At the very bottom of the Index, we find many of the countries that we know have significant development challenges – Somalia, Haiti, Chad, Niger, Central African Republic, Guinea Bissau, Togo and Afghanistan. These countries are also near the bottom of the rankings on child and maternal mortality. The Health Access Index helps to explain why: access to healthcare is extremely limited. Many of these countries are exceptionally poor, and are or have been affected by conflicts. As a result of its prolonged crisis, and failing health system, Somalia has long been one of the worst countries in which to be a child.

What is perhaps more surprising is the appearance of Nigeria – now a middle-income country and the largest economy in Africa – third from the bottom. While Nigeria has seen some reductions in child mortality and improvements in the health system, rates of under-five and newborn mortality remain among the highest in the world, at 117/1,000 and 37/1,000 respectively in 2013. Two indicators push it lower down than where it comes on a ranking based on mortality alone. Skilled birth attendance – which we know is vital to tackle newborn and maternal mortality – is extremely low at just 38%, similar to Afghanistan and Somalia. Nigeria also has an incredibly high level of inequality in access to health services – skilled birth attendance is now 15 times lower among the poorest than the richest, with inequalities growing over the past decade. It is hoped that the recent passing of the Nigeria Health Bill will lead to improvements in the right to health.[88]

In order to compare, the information is from the most recent official data collected and published by UN sources such as WHO and UNICEF. These combine information from a variety of sources, including – but not limited to – health data collected by each country's government. Demographic and health surveys and multiple indicator cluster surveys are important sources of data that allow comparison across countries. However, there is often a time lag between these international data and the national data collected and published more frequently by governments. For these reasons, the data used in the Health Access Index is often different from that used by governments themselves. For example, in some cases, the UN data fails to show recent progress.

To give a more detailed picture, additional information for the bottom 28 countries has been collected, showing the geographic distance each health worker covers (assuming an even distribution) and the average financial burden for healthcare borne by each individual (see Appendix, p 33). While 82% of the population in Nigeria lives under $2 a day,[91] out-of-pocket spending per year represents on average $106 for each person in 2012 (about 30c a day). In Chad, one health worker has to cover on

TABLE 4 COMPARABLE INDICATORS IN HIGH INCOME COUNTRIES

	Human resources for health			Financing		Outcomes	
	Number of people per physician	Number of people per nurse or midwife	Number of km^2 covered by one health worker	Government expenditure on health (per capita, US$)	Out-of-pocket payments (as % of total health expenditure)	Newborn mortality rate (per 1,000 births)	Under-five mortality rate (per 1,000 births)
Australia	306	94	24.4	4,108	19	2	4
Canada	484	108	25.72	4,022	15	3	5
Germany	263	87	0.28	3,572	12	2	4
Italy	244	184	0.54	2,371	20	2	4
Japan	435	92	0.22	3,920	14	1	3
Norway	267	75	4.56	7,704	13	2	3
Spain	271	197	1.23	2,065	20	3	4
Sweden	306	91	3.46	4,346	16	2	3
UK	358	113	0.33	3,009	10	3	5
USA	408	102	2.7	4,126	11	4	7

Sources of data: Latest available from WHO (2012/13). Health workers calculations based on WHO health worker density data, last available from 2003 to 2012.

average an area of 568km^2 – which compares with one health worker per 0.3km^2 in the UK. In Niger the health worker gap is huge, with one health worker per 6,410 people.

The top countries in the Health Access Index (while still among the 75 countries with the highest rates of maternal and child mortality) have developed their health systems considerably and are recognised as providing forms of universal health coverage. Many of these are wealthier countries; many of them score highly for fairness in access to healthcare. Botswana is an interesting example – its natural resource wealth from diamonds has been used in a way that has benefited the whole nation. Reforms in Vietnam and China over the past decade have seen coverage of health increase to over 70% and 90% of the population respectively; at the same time, out-of-pocket payments have dropped.[92]



PHOTO: LALAGE SNOW/SAVE THE CHILDREN

AFGHANISTAN

Afghanistan is one of the worst countries in the world to be a mother – or a child. It is fourth from the bottom of the Health Access Index.

Women in Afghanistan face high risks of dying from complications during pregnancy or childbirth.

Only 38% of women give birth with a skilled health worker in attendance, compared with 99% in the UK. It is also inequitable, with the poorest women five times less likely to deliver with a skilled birth attendant than the richest, putting them and their newborn babies at risk. The country has just seven health workers for every 10,000 people, and public spending on health was $10.71 per person in 2012.

But important achievements are being made. In 2000, more than one in four children died before the age of five. While the rate is still the worst in Asia, there has been a significant decrease in the under-five mortality rate to 97.3/1000 – or just less than one in ten.

At the heart of these recent past and future achievements is the Basic Package of Health Services (BPHS). This is the core of primary healthcare, providing access to maternal, child and newborn health, nutrition, communicable diseases, mental health and disability referrals in the most underserved areas. So far, more than 29,000 voluntary community-based health workers have been recruited and trained in basic healthcare. Roughly 50% are women, making health services more accessible for women and girls.

Save the Children is delivering the BPHS in Kunduz province, and is supporting its implementation in Badakhshan, Kandahar and Uruzgan. We are also advocating to ensure that the BPHS remains fully funded across the country.

Note: Data is latest available UN and WHO estimates; may vary from latest national estimates.



PHOTO: COLIN CROWLEY/SAVE THE CHILDREN

KHADRA AND MOHAMUD

Eight-month-old Mohamud has severe malnutrition with medical complications. He is finally getting the treatment he needs, but because of cramped conditions at the hospital in Garowe, Somalia, he is at risk of catching other diseases too.

Mohamud was sick for two months before his mother, Khadra, was able to raise the funds to take him the 90km from the village where they live to the nearest health facility, in Garowe. The journey took them two days.

That was two months ago – and Mohamud is still in hospital. Khadra and Mohamud are sharing a small room with four other children and their mothers, including a child with pneumonia and another with meningitis. The cramped quarters put all the children at risk of cross infection.

The hospital is desperately overstretched. They treat between 100 and 120 outpatients a day, and usually have up to 20 inpatients. The staff do their best to give each patient the treatment he or she needs. But they face serious obstacles.

Dr Fatuma Ali Abdi, head of the hospital's paediatric and stabilisation centre, told us, "The problem is, we don't have enough medicine. And the other problem is space. One of our current patients has meningitis. Ideally we should put him in an isolated place, where he can't transmit this infection to the other children. And the baby himself could get better care."

THE RISE OF EPIDEMICS AND ZOONOTIC DISEASES

> *"The risk of new diseases quickly spreading worldwide has never been greater."*
>
> Judith Rodin, President of the Rockefeller Foundation[93]

The world has made significant strides in tackling infectious diseases over the last decades, including eradicating smallpox, making significant progress against polio and tackling infectious diseases through vaccination. However, new threats have emerged, including in the last two decades 30 new zoonotic diseases – which means there are one or two emerging each year – spread from animals to humans.[94] These new diseases may be the result of population pressures, economic growth pushing humans into closer contact with animals and climate change, and are more likely to be spread as a result of the growth in global travel.

Recent global concerns have been prompted by infectious diseases that demonstrate a propensity to spread fast across borders. In 2003, severe acute respiratory syndrome – or SARS – first emerged in travellers in Hong Kong in 2003 and spread rapidly to 29 countries, affecting more than 8,000 people.[95] In 2009, Influenza H1N1 was identified in almost every country in the world, with 18,449 identified deaths and the actual total of deaths (including of people not tested for the disease) estimated at 284,000.[96]

The threat of infectious epidemics is already real. Every year, many of the countries towards the bottom of the Health Access Index see large-scale cholera, measles, whooping cough and other epidemics that need to be prevented or controlled by more effective health systems.

A lesson from further back in history shows that infectious disease outbreak can certainly lead to enormous numbers of deaths, having crossed borders and overwhelmed health services. Nearly a hundred years ago, what become known as Spanish Flu caused 50 million deaths worldwide between 1918 and 1920.[97] Unlike other flu pandemics, Spanish Flu did not affect only young children and old people – fatality rates from the epidemic were highest among young adults.[98] The globe was hit by three successive waves of the pandemic over 18 months – with the USA, Europe, sub-Saharan Africa and Asia critically affected.[99, 100, 101]

In western Europe, Spanish Flu killed more than 1.5 million people. At that time, access to healthcare in Europe was more poorly organised and unequal than now, with the wealthy using high-quality care and the poor often not accessing any healthcare.[102] Medical technologies have also improved considerably since then. Nevertheless, at the outbreak of Spanish Flu, western Europe had a relatively higher number of health workers than many sub-Saharan countries do now, and spent similar amounts of government money on healthcare as countries affected by Ebola do today. Between 1906 and 1911, the period of the last available data before the Spanish Flu outbreak, the UK, France and Italy[103] had one doctor for 1,612 people.[104] In comparison, Liberia, Sierra Leone and Guinea today have far fewer doctors (one doctor for 71,000, 45,000 and 10,000 inhabitants respectively).[105] When Spanish Flu hit Europe, public spending on health in France, Germany and the UK was roughly equivalent to $12.8, $31.1 and $37.3 respectively.[106] In 2012 public spending on health in Guinea, Sierra Leone and Liberia was $9, $16 and $20 per person each year respectively.[107]

It is not possible to say at what scale or when a future influenza pandemic could emerge, but some experts believe that outbreaks on the scale of Spanish Flu are possible.[108] As one journal article notes: "Influenza experts recognise the inevitability of another pandemic. Will its effect rival that of 1918 or be more muted, as was the case in the pandemics of 1957 and 1968? Nobody knows."[109]

At the height of the SARS concern, researchers from the University of Washington ran calculations to identify how many deaths might be caused today by an influenza strain similar to that of 1918–20. They estimated 51–81 million deaths globally.[110] While the authors are careful to say that these estimates are only indicative, they calculated a number of deaths for each country. Applying these calculations to the 28 countries below Liberia on the Health Access Index, where the health services are weakest, shows that 31 million people might die if these countries were hit by an influenza epidemic that behaved as Spanish Flu did.

WHY HEALTHCARE FOR ALL IS KEY TO ENDING PREVENTABLE CHILD DEATHS

Ebola has exposed the weakness of health services in Guinea, Sierra Leone and Liberia. And as the Health Access Index clearly shows, these weaknesses are not solely confined to these three countries.

But as well as the threat posed by deadly epidemics, lack of access to healthcare lies behind the terrible daily toll of child and maternal mortality and ill-health in low- and middle-income countries. The numbers of children dying every day from preventable causes are far greater than from this Ebola outbreak. One key difference, of course, is that these health problems do not board planes to Europe or North America. As a result, they are not treated as the health emergencies that they really are.

17,000 children die every day. Most of these deaths are from causes that could be prevented if communities had access to essential healthcare, as well as action to improve access to nutrition, education, and water and sanitation.

While the world has made amazing progress in reducing under-five child mortality since 1990 – with a fall from 12.7 million deaths of children under five in 1990 to 6.3 million in 2013[111] – Millennium Development Goal 4, to reduce child mortality by two-thirds between 1990 and 2015, will be missed by most of the Countdown to 2015 countries.[112]

There are two clear challenges that we need to address in order to move towards our ambition of ending all preventable child deaths. For both, the fundamental issue is access to essential healthcare.

First, as under-five mortality levels have fallen, deaths of babies in their first month of life are falling much more slowly. Reductions in deaths of children have been achieved by impressive increases in immunisation, prevention of malaria, and treatment of childhood illnesses. These measures save thousands of children's lives every day. However, as Save the Children showed in the 2014 report *Ending Newborn Deaths*, preventing the deaths of newborn babies and their mothers can only be achieved through providing universal access to good-quality healthcare during birth. This means health services that have staff and resources to support delivery, 24 hours a day, and wherever they are needed.

Second, gains in child survival have not been shared equally. Deaths are increasingly concentrated among the poorest and most marginalised children, as demonstrated by Save the Children's recent report *The Lottery of Birth*. Save the Children has analysed which countries are on track to achieve MDG 4 when based on national averages and which countries have achieved MDG 4 both at national level and, specifically, for disadvantaged groups of children (those born in the poorest 40% of families and in rural areas).[113] While 35 'Countdown' countries out of 75 are on track to reach MDG 4 as a national average, even fewer – 16 – have the data showing that they are on track for the most disadvantaged groups in their countries.[114]

These findings reflect the social and economic factors that make the poor and excluded less healthy; they also reflect differential access to healthcare. Coverage rates of specific services vary enormously across different social groups, with skilled birth attendance one of the most unequal services. Where access to care is not universal, ending all preventable deaths cannot be achieved. Save the Children is arguing that the Sustainable Development Goals – which will follow the MDGs – should include the provision that no target should be considered met by a country unless met for all social groups.

TABLE 5 LEAVING NO CHILD BEHIND: ACHIEVING MDG 4 – TO REDUCE CHILD MORTALITY BY TWO-THIRDS BETWEEN 1990 AND 2015

Country	Will the country as a whole achieve MDG 4?	Will MDG 4 be achieved for the poorest and those living in rural areas?
Afghanistan	NO	
Angola	NO	
Azerbaijan	YES	
Bangladesh	YES	YES
Benin	NO	NO
Bolivia	YES	NO
Botswana	YES	
Brazil	YES	
Burkina Faso	YES	YES
Burundi	YES	
Cambodia	YES	YES
Cameroon	NO	NO
Central African Republic	NO	NO
Chad	NO	
China	YES	
Comoros	NO	
Congo	YES	YES
Côte d'Ivoire	NO	NO
Democratic Republic of Congo	NO	
Djibouti	NO	
Egypt	YES	YES
Equatorial Guinea	NO	
Eritrea	YES	
Ethiopia	YES	NO
Gabon	NO	NO
Gambia, The	NO	
Ghana	NO	NO
Guatemala	YES	
Guinea	NO	NO
Guinea-Bissau	NO	
Haiti	NO	NO
India	NO	
Indonesia	YES	NO
Iraq	NO	
Kenya	NO	NO
Korea DPR	YES	
Kyrgyzstan	YES	
Lao PDR	YES	

Country	Will the country as a whole achieve MDG 4?	Will MDG 4 be achieved for the poorest and those living in rural areas?
Lesotho	NO	NO
Liberia	YES	NO
Madagascar	YES	YES
Malawi	YES	YES
Mali	YES	NO
Mauritania	NO	
Mexico	NO	
Morocco	YES	
Mozambique	YES	YES
Myanmar	NO	
Nepal	YES	YES
Niger	YES	YES
Nigeria	NO	NO
Pakistan	NO	NO
Papua New Guinea	NO	
Peru	YES	YES
Philippines	NO	NO
Rwanda	YES	YES
Sao Tome and Principe	NO	
Senegal	YES	YES
Sierra Leone	NO	
Solomon Islands	NO	
Somalia	NO	
South Africa	NO	
South Sudan	YES	
Sudan	NO	
Swaziland	NO	
Tajikistan	YES	
Tanzania	YES	YES
Togo	NO	
Turkmenistan	NO	
Uganda	YES	YES
Uzbekistan	NO	
Vietnam	NO	NO
Yemen	YES	
Zambia	YES	YES
Zimbabwe	NO	NO



PHOTO: HANNAH MAULE-FFINCH/
SAVE THE CHILDREN

MODESTE AND ELIABU

Modeste has brought her youngest son, six-week-old Eliabu Iyonasenze, to the health centre as he has whooping cough. Thankfully, because of the national health system in Rwanda, she has been given medication for Eliabu.

Modeste and her husband are farmers in Burera district, Rwanda. They have a small plot of land and eight children to bring up, and money is tight. Sometimes there isn't enough food to eat and they struggle to pay school costs.

However, healthcare is one thing they no longer have to worry about. Rwanda is investing in its health system – and seeing infant and maternal mortality rates fall as a result. The introduction of a new national health insurance system is a key factor in this change for the better. This covers 98% of the population with comprehensive services. The compulsory scheme includes national subsidies for the poorest people and has dramatically reduced out-of-pocket spending compared with other countries in Africa.

In the past, Modeste often couldn't afford to seek medical help when she or her children were ill, but when Eliabu was sick she took him straight to the health centre. She said, "I was very worried. I thought I could even lose my baby. But when I came here they gave me the drugs and I followed the instructions.

"Previously a child could fall sick because there was no insurance system. I kept my child at home sometimes because I didn't have money to pay. Now, when you get a problem you can immediately come to the clinic.

"And for little children who get pneumonia or diarrhoea, we have community health workers who live in the village who can attend to that."

Modeste believes things could still be improved, with smaller health facilities becoming better equipped so that people don't have to be referred to a hospital far away.

3 UNIVERSAL HEALTH COVERAGE: WITHIN OUR MEANS

Universal health coverage means all people in a country can use the health services they need, without being forced into poverty as a result, and that services are of sufficient quality to be effective.[115] The countries at the bottom of the Health Access Index are those that are furthest away from universal health coverage.

Universal health coverage requires a health system that can provide the entire population with access to the range of services needed (preventive, promotive, curative, rehabilitative and palliative).[116] Such a system needs sufficient health workers, medicines and technologies and financing that can protect people from impoverishment from healthcare costs. Above all it requires strong governance and leadership. It is the responsibility of governments to ensure universal access to healthcare, so that it is not the preserve solely of those people who are better off.

AN EMERGING MOVEMENT

Universal health coverage is not a new idea. Save the Children and others have been advocating for action to improve health access for many decades. The UN Convention on the Rights of the Child recognises the right of all children to the enjoyment of the highest attainable standard of health. The WHO constitution affirmed the highest attainable standard of health for all and the Universal Declaration of Human Rights includes the right to medical care. This is embedded in many national constitutions, including South Africa's 'Section 27' and Mexico's 'right to health protection'.

Over the past few years, universal health coverage has been gaining momentum. Many countries across the world are pursuing universal health coverage reforms, including Thailand and Rwanda, which have seen significant impact from health service reforms.[117] WHO and the World Bank have made universal health coverage their top priority. Universal health coverage is likely to feature as a target in the post-2015 agreement on the sustainable development goals for 2016–2030.[118]

Universal health coverage can be described as a direction for countries, rather than a destination.[119] Low-income countries cannot instantly provide a full range of clinical health services, such as all cancer treatments and surgeries. Instead, the concept of 'progressive universalism' was proposed by the Lancet Commission on Investing in Health.[120] It calls for countries to ensure that their whole populations can access the most essential services first, with little or no cash payments at the point of use, and that the range of services covered should expand as resources allow. In a joint report with WHO, UNICEF and the Rockefeller Foundation, Save the Children similarly proposed "equitable pathways" to universal health coverage, arguing that reforms should be designed to increase coverage among populations with greatest needs first. This identified that maternal and child health services should be the priority.[121] Other high priorities for progressive universalism are infectious disease surveillance, monitoring of health information, infection control procedures and the public health function to act in a health emergency and to address social factors that are leading to ill health.

AN AFFORDABLE REALITY

In the debates about universal health coverage, one objection raised by some is that the low- and middle-income countries with the worst health access – those with high rates of mortality and morbidity and those most at risk of an infectious disease outbreak – cannot afford to provide essential minimum healthcare for all their populations.

Save the Children has compared the current level of public spending on health for the countries in our Health Access Index against the recommended minimum of $86 per person per year, the amount estimated sufficient to provide an essential package of services.[122] This chapter identifies the gap between this target and the reality in the 75 'Countdown' countries and discusses how it can be filled, primarily through increasing domestic resources for health, expanding public revenues and making healthcare more of a political priority.

THE NEED FOR PUBLIC FUNDING TO ACHIEVE UNIVERSAL HEALTH COVERAGE

The amount of money raised for health is clearly key to the level of provision of services. Other aspects of health financing – how the money is raised and how it is spent – are also critical to universal health coverage because they determine the fairness, efficiency and accountability of health services. Sierra Leone, with some of the worst health indicators in the world even before the current Ebola crisis, has total health spending (public as well as private, including out-of-pocket spending) at $96 per capita. Rwanda, with much better



PHOTO: TANYA BINDRA/SAVE THE CHILDREN

YACOUBA

Yacouba, aged four, doesn't know it but he is a lucky little boy. When Yacouba had a high temperature, his mother took him to see a community health worker who recognised the urgent warning sign and took him to the health centre, where he was diagnosed with malaria.

Yacouba was then referred to hospital where he was given life-saving treatment including a blood transfusion. The quick referrals and timely treatment saved Yacouba's life. Many children aren't so lucky.

Yacouba lives in Mali – where one child in eight dies before their fifth birthday. Mali is in the bottom ten of the Health Access Index. Although Mali has seen improvements in reducing child mortality over the past ten years (from 200/1000 from 122/1000), it still has unacceptably high rates of maternal and newborn mortality, and needs to see significant increases in investments in health to attain universal health coverage.

health outcomes and coverage, has a total health expenditure of $66 per capita. The structuring of this funding – where it sits, who controls it and how it is spent – is critical. Rwanda's public spending on health – that which is raised and controlled by the government – was $38 per capita in 2012 whereas Sierra Leone's was only $16 per capita.[123]

We have calculated the gap in funding that needs to be filled to meet the cost of universal health coverage (see next section below). Our calculation is based on more ambitious public funding for health rather than including private and out-of-pocket payments.[124, 125] Public financing is key to building fair and universal coverage; this is increasingly understood across actors involved in international development.[126] Public funding is the fairest way to finance a health system, as it pools resources from the whole population, allowing redistribution from the wealthier and healthier groups in the population to those who are poor and sick, to provide healthcare based solely on need.[127] Public revenues tend to be more sustainable, predictable and more efficient with lower administrative costs than private financing. Public funding means the public has a greater say in how resources are spent, making the state more accountable to its people for spending it well. Public financing is the dominant form of financing in countries that have made progress towards universal coverage.[128]

FILLING THE GAP

Only 16 Countdown countries reach the target of $86 per capita of public spending on healthcare. Most countries remain a long way from this target, with nearly half allocating less than $20 of public funds per person. We have estimated that, for the Countdown to 2015 countries to achieve this minimum spending target of $86 per capita per year, an additional **$172 billion** would be required annually (based on 2012 figures, which are latest data available).[129] Much of this funding gap is based on current economies – if estimates of growth prove accurate, the gap would fall to **$101bn** in 2030. But given what is at stake, waiting for economic growth is not an option; in fact, improved health of the population is key to economic growth.[130] Save the Children believes that low- and middle-income countries can and should do much more to fill this gap faster by doing two things:

- increase government revenue – raising more funds, allowing them to spend more on health and other social sectors
- give more political priority to the health sector – increasing health spending as a share of total government expenditure.

RAISING MORE REVENUE

There is a wide variation between countries in what they raise in government revenue, with many low-income countries far from the recommended 20% of GDP collected as tax revenues that the United Nations Development Programme calculated was needed to achieve the MDGs.[131] Data on tax is poor, but the latest available data (for 2010) show that tax revenue in low-income countries averages around 13% of GDP, compared with 35% in rich countries.[132] Only 16 Countdown countries meet the 20% target.[133]

Revenues are influenced by many factors, such as the state of the economy, employment levels, natural resource reserves (and their use), and tax policy choice (and the effectiveness of tax systems and the extent of tax compliance).[134, 135] Experience shows that low-income countries can, over time, raise their tax income.[136] In the last ten years, Kenya has increased its tax-to-GDP ratio from 15% to 20%. In Tanzania, tax take increased by more than 4% of GDP over the same period. Rwanda, Burundi and Lesotho have rapidly increased their tax revenue through reforming their tax systems.[137]

When reforming tax systems, it is important that the burden of any additional taxes should not fall disproportionately on the poorest people. Countries should prioritise raising direct over indirect taxation. Direct taxes, including on income, wealth and property, can be designed progressively, so that people and businesses contribute according to their ability to pay. Indirect taxes, such as sales taxes, can cause greater burdens on poor households.

Aside from traditional forms of tax, there is a wide range of alternative mechanisms (sometimes referred to as 'innovative sources of finance') proposed to raise additional funds for health and other social sectors. The 2010 World Health Report describes many of these, including 'sin' taxes on alcohol and tobacco, a financial transaction tax, mobile phone or remittance taxes, airline levies and national lotteries. These are explored in greater detail in the Background Paper to this report, *Within Our Means: Why countries can afford universal health coverage*. 'Sin' taxes have an important role to play in changing unhealthy behaviours, although any

revenues generated are likely to decline if behaviour changes. These are also regressive taxes, placing a greater burden on poor households.

Low-income countries can also raise their tax income by identifying untapped revenue. It is estimated that the untaxed assets of wealthy individuals held in offshore accounts amount to an estimated loss to global revenues of $190–289bn per year.[138] Corporate tax exemptions are estimated to cost developing countries between US$138.9bn and US$160bn each year. While these numbers are only indicative and cover different time periods and groups of countries, they suggest that a gap of $101 billion per annum in health spending could be significantly reduced. In Kenya, for example, only 100 high-net-worth individuals are currently registered with the tax authority, and an estimated 40,000 wealthy individuals are not paying tax. In South Africa, tax evasion by high-net-worth individuals has reduced tax revenues by an estimated $10.9bn[139] – almost the same as the annual national health budget of roughly $11bn in 2012.[140]

MORE MONEY FOR HEALTH

As well as raising more funds, countries have control over the share of the pot that they allocate to health. This ranges from on average 5% in lowest-income countries (with the lowest, 2% in Myanmar) to more than 20% in high-income countries (Argentina, Japan, Netherlands, USA[141]). There is also a range within low- and middle-income countries on the budget allocated to health – for India this was 9.4% and for Costa Rica 28% in 2012 – reflecting differing priorities across these countries. Rwanda is unique in Africa at 22%, likely to be due to both the high priority given to the health sector within the government and the large level of international aid for health that is provided through the budget.[142]

In the Abuja Declaration in April 2001, African Union member states pledged to increase spending on health to at least 15% of their total government expenditure. In 2012, more than a decade later, only seven African countries achieved this target: Togo, Liberia, Burundi, Namibia, Rwanda, Swaziland and Malawi – with the majority of countries spending less than 10%. The countries at the bottom of the Health Access Index, such as Eritrea and Chad, allocated less than 4% of their budgets to health in 2012. Kenya and Nigeria both stand out as middle-income countries allocating just 6.0% and 6.6% of their total budgets to health – despite continued high levels of disease and mortality. Many countries could make the policy decision to increase health spending from their existing budgets if they made working towards universal health coverage a higher political priority.

Our research shows that prevention is better than cure. Investing now will prevent future health costs. And we argue that universal health coverage is an affordable objective. It means that countries need to raise more revenue and place greater priority on health. We have estimated that if all Countdown countries that currently do not spend $86 per person on health raised tax revenue to 20% of GDP and spent at least 15% of their budgets on health, the financing gap could fall by almost three-quarters to just $28bn.[143]

THE IMF AND PUBLIC SPENDING

The role that the International Monetary Fund (IMF) has played in discouraging government spending on public health services has received intermittent attention over the years. The IMF is extremely influential in the way that it advises governments and donors on revenue generation and public spending. As a briefing paper by the Centre for Global Development summarised, the IMF "have often unduly narrowed the policy space by failing to investigate sufficiently more ambitious, but still potentially feasible, options for higher government spending and aid."[144] Recently, commentators in *The Lancet* have linked IMF policies to the circumstances that enabled the Ebola crisis to arise, saying that "conditions attached to loans that required recipient governments to prioritise short-term economic objectives over investment in health and education" are partly to blame.[145] While the IMF has challenged this,[146] for developing countries to increase their own domestic contributions for health – essential for universal health coverage – the issue of government spending levels will need to be tackled. In Background Paper 50 to the World Health Report 2010, the author called on health advocates to ensure that donor finance ministries should compel the "IMF Executive Board to revisit and change these unnecessarily restrictive IMF policies so that developing countries can better generate higher GDP output, employment and tax revenues for increased long-term public investment in rebuilding their health systems."[147]

There are some tentative signs of hope that have come out of the terrible Ebola crisis. Commenting on the needs of Ebola-affected countries, IMF Managing Director Christine Lagarde said, "It is good to increase the fiscal deficit when it's a matter of curing the people, of taking the precautions to actually try to contain the disease. The IMF doesn't say that very often."[148] The argument now needs to be made that prevention is better than cure and that this may require higher public spending.

One argument to appeal to economists is the high economic return on investing in health. The Lancet Commission on Investing in Health showed that reductions in mortality account for about 11% of recent economic growth in low- and middle-income countries, and that the benefits of investing in health would exceed costs by nine to one in low-income countries, rising to 20:1 in lower-middle-income countries.[149] Suppressing public spending may have actually damaged those economies.

MORE HEALTH FOR THE MONEY – ACHIEVING GREATER EQUITY AND EFFICIENCY IN SPENDING

Even if governments increase health spending to $86 per capita, universal coverage is far from guaranteed. Universal health coverage will depend on which groups of people and types of intervention receive resources and how efficiently they are spent. This is just as important as raising sufficient revenues. There are many lessons to learn from those outlier countries that achieve better health outcomes with limited health spending, although overall the correlation between higher health spending per capita and outcomes is strong.[150]

One way to make health spending more equitable is by making certain essential services – particularly primary healthcare – free at the point of use to everyone, then expanding this package of services as budgets rise.[151] This helps to ensure the most vulnerable and disadvantaged people are included from the outset. Equity can also be prioritised in allocation of resources across regions. Transfers from central to devolved governments or targeted support can mitigate against national inequalities. This is the experience in South Africa, India and Tanzania, for example.[152]

Improving efficiencies is fundamental to improving health outcomes and could also help Countdown countries reduce their health financing gap. An estimated 20–40% of health spending is wasted through inefficiencies, including purchasing over-expensive drugs and the insufficient use of generic medicines; an inappropriate mix of health workers; unnecessary hospital admissions instead of using lower-cost primary care facilities; and 'leakages, corruption and fraud'.[153] Cutting wastage even by a much smaller amount – just 10% of existing health budgets – could raise $15bn to channel back into the health sector.[154]

THE REMAINING NEED FOR AID

The $86 per capita target for government expenditure on health used in this paper is based on an average of national needs; in reality, of course, costs vary across countries. It is also an ambitious target – achieving it will take time, especially in countries with low current levels of economic development. WHO estimated that only eight of the 49 low-income countries would be able to finance health spending from their own domestic resources in 2015.[155]

Our own research shows this to be true even in 2030 for some of the countries towards the bottom of the Health Access Index. These countries are exceptionally poor and likely to remain so. 26 of them – including Sierra Leone, Liberia and Guinea – could not achieve the minimum package of $86 alone, even if meeting international targets on revenue and share to health. For this reason, they need an exceptional response. Donors and multilateral bodies need to play a more effective role in supporting the world's poorest countries to work towards universal health coverage.

RE-SHAPING GLOBAL PRIORITIES FOR HEALTH: FROM DISEASES TO SYSTEMS

The inadequacy of health services in the world's poorest countries is a global issue, as became apparent when international help was needed to deal with Ebola amid fears of it travelling around the world. In the same way, there needs to be global action to respond to the gaps in government budgets for health services.

The World Health Assembly and the United Nations General Assembly have adopted resolutions in support of universal health coverage.[156] Donor countries have made commitments to aid effectiveness, including the principle of alignment of their funding to support

national plans and systems. Despite this commitment, global health action is more often focused on specific diseases or services without the evidence that they are supporting comprehensive health services that can address infectious disease outbreaks. In 2011, for example, new funding for HIV, malaria, polio and tuberculosis accounted for 44.5% of all foreign aid allocated to health. It seems that the world finds action on specific diseases more compelling than support for comprehensive health services.

There is concern that the focus of the MDGs on specific diseases and population groups created silos that overlooked the broader needs of health systems, and bilateral donors and multilateral institutions have not made comprehensive health services their top priority. Given the reliance of many poor countries on aid, this has helped to make health systems fragmented.[157]

The United Kingdom's Department for International Development (DFID) was long-seen as a global champion of building comprehensive health systems, while also supporting specific initiatives. DFID was proactive in supporting Liberia and Sierra Leone to reform their health systems and to remove the cash payments or 'user fees' that were deterring people from accessing essential services. In 2014, the UK House of Commons International Development Select Committee heard concerns that DFID was perceived to be less interested in this approach and called on the government to "be a vocal champion of system strengthening and seek to influence its international partners to prioritise it in their work."[158]

Donor investment in health has prevented many unnecessary deaths and led to remarkable achievements – for example, on HIV, with 12.9 million people on HIV treatment worldwide,[159] and immunisation, with 112 million children now immunised each year[160] thanks to government investment and the support of disease-focused organisations, such as the Global Fund to Fight Aids, Tuberculosis and Malaria and Gavi, the Vaccine Alliance. However, investment in the fight against specific conditions should be supported by sufficient investments in the health system as a whole, including the health workforce, building clinics, and enhancing surveillance systems. Vertical initiatives and fragmentation of expenditure do not necessarily help countries to develop their capability to respond to unpredicted epidemics and emergencies – which, as argued above, is one of the many functions of an effective health system.

SUSTAINABLE DEVELOPMENT GOALS

As the world comes closer to negotiating the Sustainable Development Goals, health is one topic receiving plenty of debate. Targets for ending preventable maternal, newborn and child deaths are likely to feature, alongside many specific disease or population priorities. Many voices, especially those of WHO and the World Bank, are calling for the principles of universal health coverage to drive the agenda, so that building comprehensive health systems is not neglected in the pursuit of specific disease priorities.

One challenge is how to measure universal health coverage. Proposals for indicators include specific health services, both prevention and treatment, that are relevant to the MDGs, and chronic conditions and injuries. This attempts to balance coverage with outcomes to ensure that quality is not neglected.

In addition, there should be measurements for financial risk protection to ensure that the method of paying for health services is not pushing the poorest into poverty.

The WHO and World Bank proposal is that populations, independent of household income, expenditure or wealth, and of place of residence or gender, have at least 80% essential health services coverage, and that by 2030, everyone has 100% financial protection from out-of-pocket payments for health services.[161] Save the Children has called for universal rather than 80% coverage of essential health services by 2030.[162]

If the WHO and World Bank proposal is agreed in September 2015, this should mean all governments – those with poor health outcomes and the rest of the global community – commit to build universal coverage of comprehensive health services. Communities would be able to hold their governments to account for this target.



PHOTO: IVY LAHON/SAVE THE CHILDREN

A health centre in Kinshasa province, Democratic Republic of Congo

CONCLUSION

The Ebola outbreaks in Guinea, Liberia and Sierra Leone have devastated communities. Thousands of people have died in pain and isolation. Many children have lost parents to the disease. Millions of children have missed out on essential healthcare and on education.

The Ebola epidemic has also demonstrated that under-resourced, understaffed and fragmented health services are unable to contain outbreaks of serious infectious diseases or adequately respond to health emergencies. This failure of health systems to halt an emerging disease, combined with an inadequate international response, could have had – and may still have in future – far-reaching and catastrophic global consequences.

But, as our Health Access Index shows, the factors that allowed this Ebola outbreak to spread so far in Guinea, Liberia, and Sierra Leone are not unique to these three West African countries. Neighbouring countries – Niger, Chad, Central African Republic, Mali, Guinea Bissau – are near the bottom of the Index. The health systems of many other countries are also unable to provide people with the essential services they need: 28 countries have similar or worse health services than Liberia. Many countries must learn the lessons from the Ebola outbreak and strengthen their health systems.

Ebola is a high-profile disease. But there is another health crisis in many poor countries that goes on every day and, like the Ebola epidemic, is a symptom of weak health systems. In 2012, 6.3 million children died, most from illnesses we know how to prevent or treat; 2 million babies died within a month of being born. While the world has made impressive progress in tackling child mortality since 1990, the poorest and most disadvantaged children are being left behind.

What is needed, to bring something positive from the crisis of Ebola, is a renewed global health agenda that ensures fair services and protection from financial risk; that is responsive to local disease burdens and needs; and that ensures universal access to high-quality preventive, promotive, curative, and rehabilitative healthcare. Universal health coverage is the framework for this new approach to more integrated and sustainable health services. Achieving universal health coverage, however, requires a strong people-centred health system, better access to essential medicines and technologies, and a strengthened health workforce, as well as changes to health financing policies and the way that aid is provided to recipient countries.

The responsibility for strengthening health services that have been dangerously inadequate for such a long time is shared between governments and the global community. The Sustainable Development Goals must seek to support this health agenda to recognise that it is unjust, inhumane and dangerous to leave the health services of so many countries in such a weak state. Crucial to this is enabling countries to raise and spend more on health services to meet the gap.

The world is now helping Guinea, Liberia, and Sierra Leone to cope with the outbreak of Ebola and will support them to rebuild their health services after the crisis has abated. As stated during a recent WHO meeting: "The Ebola crisis in West Africa presents a time-limited opportunity that should not be wasted. Health systems strengthening and resilience building should start now."[163] Hopefully, this will leave these three countries better able to respond effectively to outbreaks of infectious diseases and with stronger health services for the future, if the principles of universal health coverage are applied.

But the lessons from Ebola go much wider. The crisis of Ebola must become the global opportunity to ensure essential healthcare for all. It is time, finally, to address the need for universal health coverage in all of the world's poorest countries.

RECOMMENDATIONS

To ensure that the world learns the lessons of this Ebola outbreak and takes the opportunity to address the long-standing scandal of inadequate and dangerous health services in low-income countries, **all must act to enable countries to achieve universal health coverage**.

For Guinea, Sierra Leone and Liberia we call on donors, international responders and governments to:

- maintain the international response to help affected countries to achieve zero new Ebola cases and support governments in the efforts to re-establish safe access to essential services, including health and education
- **invest in rebuilding the health systems of Sierra Leone, Liberia and Guinea**, ensuring essential health services are available to all now and into the future, free at the point of use
- **strengthen and invest in national preparedness plans** in those countries and internationally – including public health surveillance, alert and referral systems, and supply chain systems that can rapidly act in an emergency and respond to outbreaks of diseases.

Political leaders in countries with low rates of health coverage should:

- make public **commitments** to building universal health coverage, with little or no direct payments at the point of use, and promote the accountability of government and of health service providers
- increase **investment** in comprehensive health services, starting with primary care, and prioritise essential services, such as infectious disease outbreaks, and maternal and child health
- increase public finances by raising fair taxation, and clamping down on tax avoidance and evasion
- strengthen and invest in **national preparedness plans** for possible outbreaks of infectious diseases, comprising public health surveillance, alert and referral systems, and supply chain systems that can rapidly procure and/or distribute medical equipment and drugs in emergencies
- transform targets of the Sustainable Development Goals into nationally relevant targets and indicators with national accountability mechanisms.

International institutions and donors should:

- ensure that aid and global support is increased and better aligned to help build suitable and comprehensive health services, and increase public financing for health
- ensure the multilateral initiatives – such as the Gavi Vaccine Alliance, the Global Fund and the new proposed Global Financing Facility for reproductive, maternal and child health – are aligned to support comprehensive and universal health services and can demonstrate that they are doing this
- implement domestic and international reforms to curb illicit financial flows and tax avoidance
- strengthen and respect the International Health Regulations and support globally coordinated support for health emergencies.

Civil society organisations should:

- engage with tax processes, advocating for progressive tax reforms and increased transparency
- monitor domestic budgets to track resource flows, and advocate for increased and more equitable revenue and health expenditure
- play a role in supporting national governments to strengthen community-level systems – both for infectious diseases and action on child survival.

The Sustainable Development Goals should:

- commit the world to support universal health coverage, alongside priorities such as ending preventable maternal, newborn and child deaths
- aim, in the target indicators, for universal coverage of key health services and for financial risk protection, and ensure that targets apply to all social groups in a country – 'no target met unless met for all'.

APPENDIX: DATA SOURCES AND METHODOLOGY OF THE HEALTH ACCESS INDEX

This Appendix briefly summarises the main features and methods used in compiling the Save the Children 2015 Health Access Index.

COUNTRIES INCLUDED IN THE RANKING

The Index focuses on the 75 countries where more than 95% of all maternal and child deaths occur, including the 49 lowest-income countries, monitored by the Countdown to 2015 movement (made up of academics, governments, international agencies, healthcare professional associations, donors, and non-governmental organisations, with The Lancet as a key partner). More information is available here: http://www.countdown2015mnch.org/about-countdown

INDICATORS INCLUDED IN THE RANKING AND SOURCES OF DATA

Following a review of the literature, and of existing access to health indices produced by Save the Children and other agencies, we selected six indicators that best reflect access to health systems. The table below shows the measures included in the Index. There are six indicators, across four 'dimensions' that reflect access to health (health outcomes – one indicator; provision of services – two indicators; utilisation of services – two indicators; equity – one indicator). Each dimension is included in the Index with an equal weight.

Data is from UNICEF, which compiles demographic and health surveys (DHS) and multiple indicator cluster surveys (MICS) as well as data collected by

TABLE 6 INDICATORS USED IN THE 2015 HEALTH ACCESS INDEX

Indicators used in the 2015 Health Access Index	Date, source of data	Weighting
Health outcomes: Newborn mortality rate (per 1,000 live births)	2013, UNICEF reported in December 2014 http://data.unicef.org/child-mortality/neonatal	1
Provision of services: Density of health workers per 10,000 people	Latest year available, Countdown 2014 report[164] http://www.countdown2015mnch.org/reports-and-articles/2014-report	0.5
Provision/financing of services: Public health expenditure per capita, PPP int $	2012, WHO, Global Health Expenditure Database[165] http://apps.who.int/nha/database/	0.5
Utilisation of services: Skilled birth attendance	UNICEF, most recent data available at December 2014 http://data.unicef.org/maternal-health/delivery-care	0.5
Utilisation of services: Immunisation coverage	WHO/UNICEF nationally reported data, most recent data available at December 2014 http://www.who.int/entity/immunization/monitoring_surveillance/data/coverage_series.xls?ua=1	0.5
Equity in service coverage: Ratio of SBA between the richest and the poorest quintiles	UNICEF, varying periods prior to survey, missing data for six countries filled with regional averages, latest available at December 2014 http://data.unicef.org/maternal-health/delivery-care	1

each country's government (National Government Estimates and other surveys). There is often a time lag between the international data and the national data collected and published more frequently by governments. For these reasons, the data used in the Health Access Index is often different from what governments use themselves. For example, in some cases, the UN data fails to show recent progress. Or in other cases, the snapshot of a single year of data may reflect an unusual occurrence that year (for example, low immunisation rates). Only six Countdown countries had no data. We filled gaps using WHO figures. Where neither source is available, a regional average has been used for the country figure (Angola, China, Djibouti, Mexico, Papua New Guinea, Turkmenistan). There were then 72 countries for which all six of the indicators are fully populated. The three Countdown countries without a full set of data are North Korea, South Sudan, and Zimbabwe. It was not possible to create a score for these countries that is comparable to the other 72, so these countries have not been included in the ranking.

SELECTION OF THE INDICATORS[166]

Access to healthcare is a very difficult concept to measure. There are various dimensions that together can measure access – including physical availability of services, financial access/affordability, and appropriateness/acceptability of services. Together these describe the interaction between the health system and the individuals who may or may not want to use it, and who may or may not get the outcome they desire.[167] The ideal access index would look at these three dimensions. Unfortunately, however, many of these indicators are not collected across all countries. For example, "average distance to healthcare facility" is not collected in DHS surveys.[168] The Health Access Index attempts to rank countries according to the three ultimate goals of a health system, which are health outcomes, responsiveness, and financial risk protection.

To deal with the many challenges of data availability and comparability, this index combines one measure of outcomes – mortality (weighted at 1), two measures of output – coverage of services (weighted at 0.5 each) and two inputs – by which we mean the supply of services (0.5) indicators. We also include an indicator on equity.

An outcome (mortality) is one of the main ultimate goals of a health system. The choice of newborn mortality as the main outcome indicator, rather than under-five mortality, reflected the view that it relies to a greater extent (although not entirely) on facility based interventions that can be provided by a functioning health system[170] (while action on under-five mortality survival relies to a greater extent on factors outside of the health system).

However, as improvements in health outcomes may occur even without improvements in healthcare access – for example, based on levels of income, education, nutrition, water and sanitation – an index based only on outcomes would be interpreted as a barometer of the health of the population rather than an index measuring the extent and quality of healthcare availability. So we also included:

Inputs (healthcare provisioning and financing): as explained in the report, government financing is one of the fairest ways to finance health systems. In themselves, these indicators do not show how those inputs are distributed, or the quality of service provided.

Outputs: these are often seen as proxy indicators of access to healthcare, although they have limitations with regards to not capturing the level of unmet need – ie, those who do not use facilities.

Equity: Save the Children continues to argue for a greater focus on equity. While some countries may be making progress at the national level, many lag behind if data is disaggregated by income, by region and by gender. Progress can only be recognised if made across all sections of society. As a result, most of our studies look at data disaggregated where possible. In the Health Access Index we look at the difference in skilled birth attendance between the richest and the poorest people in each country.

DEVELOPING THE INDEX

There are many different methods used to create indexes/scores and rankings. To create this new health access index, four steps were followed.

1. Standardise – ie, convert – each observation for each variable into number of standard deviations away from mean of the underlying source data. This step ensures that rankings are not unduly influenced by one particular indicator simply because that indicator is measured against a more detailed scale, or because countries can be very different from one another according to that indicator.
2. Allocate points to each country: for continuous variables allocate 5 points for top quintile, 4 for second top quintile, 3 for next quintile, 2 for second bottom, 1 for bottom.
3. Allocate weights to each included variable. In the Health Access Index, each dimension – input, output and outcome – was allocated an equal weight, with each indicator within the dimension allocated a 0.5 weight.
4. Add the weighted scores across all of the included indicators.

The data and calculations went through a 'due diligence' process, including updating and checking.

TABLE 7 PHYSICAL AND FINANCIAL ACCESSIBILITY TO HEALTHCARE IN THE 28 COUNTRIES RANKED BELOW LIBERIA IN THE HEALTH ACCESS INDEX

	Health workers		Household expenditure and out-of-pocket payments (OOPs) for healthcare	
	Number of km² covered by one health worker	**Number of people for one health worker**	**Annual household final consumption expenditure per capita (constant 2005 US$)**	**Annual OOPs per capita (constant 2005 US$)**
Mauritania	375	1,247	530	13
Sierra Leone	62	5,319	413	50
Kenya	14	1,028	496	13
Lesotho	25	1,488	1,005	16
Nepal	8.6	1,495	339	11
Papua New Guinea	146	1,961	n/a	5
Yemen	25	1,144	534	33
Zambia	70	1,176	n/a	12
Bangladesh	1.7	1,742	416	13
Eritrea	43	1,580	114	3
India	1.1	407	693	26
Cameroon	53	1,942	759	31
Pakistan	3.2	714	584	12
Sudan	44	893	504	45
Togo	26	3,058	313	12
Lao, PDR	35	945	491	8
Mozambique	72	2,212	310	1
Guinea-Bissau	31	1,527	n/a	10
Mali	155	1,949	459	18
Niger	527	6,410	193	9
Guinea	46	1,597	226	13
Central African Republic	479	3,279	323	6
Ethiopia	47	3,597	116	4
Haiti	–	–	422	1
Afghanistan	28	1,481	298	22
Nigeria	3.3	498	699	42
Chad	568	4,444	432	9
Somalia	504	6,711	n/a	n/a
UK	0.3	88	25,203	356

Calculations based on data from the World Bank (2013) and WHO (2014)

ENDNOTES

EXECUTIVE SUMMARY

[1] Thomas C., At the heart of Ebola – health systems that need strengthening, Blog post, USAID website (6 October 2014) http://blog.usaid.gov/2014/10/at-the-heart-of-ebola-health-systems-that-need-strengthening/

1 EBOLA: LEARNING THE LESSONS

[2] World Health Organization, WHO Ebola Situation Update (18 February 2015) http://www.who.int/csr/disease/ebola/situation-reports/en/ [last accessed 23.02.2015]

[3] Kim J. Y. and Rodin J., Universal Health Coverage: A Smart Investment. 12.12.2014. Article published online http://www.huffingtonpost.com/jim-yong-kim/universal-health-coverage_3_b_6316214.html [last accessed 29.12.2014]

[4] Boozary A., Farmer P., Jha A., The Ebola Outbreak, Fragile Health Systems, and Quality as a Cure, JAMA. 2014;312(18):1859–1860, doi:10.1001/jama.2014.14387 [last accessed 06.01.2015] http://jama.jamanetwork.com/article.aspx?articleid=1915433#Conclusions

[5] Kieny M.P., Evans D.B., Schmets G. and Kadandale S., Health-system resilience: reflections on the Ebola crisis in western Africa, Editorial, *Bulletin of the World Health Organization* 2014; 92:850, Available at: http://dx.doi.org/10.2471/BLT.14.149278 [accessed 06.01.2015

[6] Sen A., Universal healthcare: the affordable dream, *The Guardian*, Tuesday 6 January 2015, Available at http://www.theguardian.com/society/2015/jan/06/-sp-universal-healthcare-the-affordable-dream-amartya-sen [last accessed 06.01.2015]

[7] See note 5

[8] Kieny M.P. and Dovlo D., Beyond Ebola: a new agenda for resilient health systems, *The Lancet* Volume 385, No. 9963, p91–92, 10 January 2015, Available at http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(14)62479-X/fulltext?rss=yes [last accessed 13.01.2015

[9] Sources for this box: Public Health England, Guidance. Ebola: origins, reservoirs, transmission, guidelines, 15 April 2014, Feldmann H., Geisbert TW., Ebola haemorrhagic fever, *The Lancet* 2011; 377:849–62, Baize S., Pannetier D., Oestereich L., et al, Emergence of the Zaire Ebola virus in Guinea – preliminary report. N. Eng. J. Med, WHO Ebola Response Team, Ebola Virus Disease in West Africa – the first 9 months of the epidemic and future projections. N. Engl. J. Med. 23 Sept. 2014. http://www.nejm.org/doi/full/10.1056/NEJMoa1411100)

[10] World Health Organization, Ebola and Marburg virus disease epidemics: preparedness, alert, control, and evaluation. Ebola strategy. August 2014, Available at http://apps.who.int/iris/bitstream/10665/130160/1/WHO_HSE_PED_CED_2014.05_eng.pdf?ua=1 [last accessed 13.01.2015]

[11] Speech to the WHO Executive Board Ebola Special Session, 25 January 2015, http://www.who.int/dg/speeches/2015/executive-board-ebola/en/

[12] World Health Organization, WHO Ebola Situation Update (11 February 2015) http://www.who.int/csr/disease/ebola/situation-reports/en/ [last accessed 16.02.2014]

[13] Hamilton J., Ebola is keeping kids from getting vaccinated in Liberia. NPR blog, Published online 23 October 2014. Available at http://www.npr.org/blogs/goatsandsoda/2014/10/23/358117900/ebola-is-keeping-kids-from-getting-vaccinated-in-liberia [last accessed 27.10.2014]

[14] UNICEF helps restart measles immunizations in Ebola-hit countries http://www.unicef.org/media/media_78416.html

[15] UNICEF. Sierra Leone Health Facilities Survey 2014. Revised Preliminary findings, 08 November 2014, Assessing the Impact of the EVD Outbreak on Health Systems in Sierra Leone, PPt Presentation

[16] UNICEF. Sierra Leone Health Facilities Survey 2014. Revised Preliminary findings, 08 November 2014, Assessing the Impact of the EVD Outbreak on Health Systems in Sierra Leone, PPt Presentation

[17] Taylor, A. Pregnant women at risk of becoming collateral casualties to Ebola epidemic, Published online 26.09.2014, Available at http://www.washingtonpost.com/blogs/worldviews/wp/2014/09/26/pregnant-women-at-risk-of-becoming-collateral-casualties-to-ebola-epidemic/ [last accessed 27.10.2014]

[18] United Nations Office for the Coordination of Humanitarian Affairs, *Ebola virus outbreak: Overview of needs and requirements* (2014). 2014. Published online at http://www.unocha.org/cap/appeals/ebola-virus-disease-outbreak-overview-needs-and-requirements-september-2014 [last accessed 29.12.2014]

[19] FAO, Special Report: FAO/WFP Crop and Food Security Assessment – Liberia, Sierra Leone and Guinea – 5 January 2015, Available at http://reliefweb.int/report/sierra-leone/special-report-faowfp-crop-and-food-security-assessment-liberia-sierra-leone-and [last accessed 22.01.2015]

[20] UNICEF, Ebola crisis in Liberia hits child health and well-being, News Note. Available at http://www.unicef.org/media/media_75860.html [last accessed 29.12.2014]

[21] World Bank, The economic impact of the 2014 Ebola epidemic: short and medium term estimates for West Africa. Washington: World Bank; 2014 Group; 2014. Available at http://documents.worldbank.org/curated/en/2014/10/20270083/economic-impact-2014-ebola-epidemic-short-medium-term-estimates-west-africa [last accessed 29.12.2014]. Updated estimates at 2 December remain valid.

[22] World Health Organization, Health Systems Strengthening Glossary, Available at http://www.who.int/healthsystems/hss_glossary/en/index5.html [last accessed 13.01.2015]

[23] WHO standard Health Systems Framework. Available at http://www.wpro.who.int/health_services/health_systems_framework/en/ [last accessed 18.01.2015]

[24] UNICEF Statistics (2013): Under-five and infant mortality rates and number of deaths: http://data.unicef.org/child-mortality/under-five [last accessed 18 02 2015]

[25] The WHO recommends a minimum threshold of 2.3 health workers per 1,000 people (World Health Organization, Working together for health. The World Health Report 2006, Available at http://www.who.int/whr/2006/whr06_en.pdf?ua=1 [last accessed 13.01.2015])

[26] WHO, Global Health Observatory Data Repository, http://apps.who.int/gho/data/?theme=main

[27] Increasing access to health workers in remote and rural areas through improved retention, Global policy recommendations, World Health Organization, 2010.

[28] All data from World Health Organization, Global Health Observatory Data Repository, http://apps.who.int/gho/data/?theme=main

[29] WHO, Global Health Observatory Data Repository, http://apps.who.int/gho/data/?theme=main

[30] Theobald S., Ebola requires a robust health systems response, ReBUILD consortium Project, Blog posted on September 29, 2014. Available at http://rebuildconsortiumconnect.wordpress.com/2014/09/29/ebola-requires-a-robust-health-systems-response/ [last accessed 06.01.2015]

[31] WHO Unprecedented number of medical staff infected with Ebola Situation assessment – 25 August 2014 http://www.who.int/mediacentre/news/ebola/25-august-2014/en/ [accessed 22.01.15]

[32] ibid

[33] Varpilah et al. Rebuilding human resources for health: a case study from Liberia Human Resources for Health 2011, 9:11 Available at http://www.human-resources-health.com/content/9/1/11 [last accessed 19.01.2015]

[34] All Africa.com Liberia: 15 of 13,000 Successfully Pass Univ. of Liberia Entrance Exams http://allafrica.com/stories/201410221209.html

[35] McPake et al.: Removing financial barriers to access reproductive, maternal and newborn health services: the challenges and policy implications for human resources for health. Human Resources for Health 2013 11:46, doi:10.1186/1478-4491-11-46, Available at: http://www.human-resources-health.com/content/11/1/46 [last accessed 19.01.2015]

[36] McIntyre D. and Meheus F., Fiscal Space for Domestic Funding of Health and Other Social Services, Chatham House, Working Group on Financing, Paper 5, 2014. Available at http://www.chathamhouse.org/sites/files/chathamhouse/home/chatham/public_html/sites/default/files/20140300DomesticFundingHealthMcIntyreMeheus.pdf [last accessed 05.01.2015]

[37] Chatham House, *Shared Responsibilities for Health: A coherent Global Framework for Health Financing. Final report of the Centre on Global Health Security Working Group on Health Financing* (2014), 2014, Available at http://www.chathamhouse.org/publication/shared-responsibilities-health-coherent-global-framework-health-financing [last accessed 29.12.2014].

[38] WHO, Global Health Observatory Data Repository, http://apps.who.int/gho/data/?theme=main

[39] 2012, US$, WHO Global Health Expenditure database, Available at http://apps.who.int/nha/database [last accessed 13.01.2015]

[40] WHO, Global Health Observatory Data Repository, http://apps.who.int/gho/data/?theme=main

[41] WHO, Global Health Observatory (GHO). Official Development Assistance, Report: Disbursements to recipient countries, Available at http://gamapserver.who.int/gho/interactive_charts/oda/disbursements/atlas.html [last accessed 21.01.2015]

[42] Donnelly, John, How did Sierra Leone provide free health care? *The Lancet*, Volume 377, Issue 9775, 1393–1396

[43] World Health Organization, *From whom to whom? Official Development Assistance for Health*, Second Edition 2000–2010, 2012. Available at http://www.who.int/nationalpolicies/resources/whom_to_whom2ndedition.pdf [last accessed 27.10.2014]

[44] Pailey, R.N., 2014 Ebola Outbreak Exposes Large Gaps in Financing Adequate Healthcare in West African Countries, Development Viewpoint Number 82, October 2014, Centre for Development Policy and Research, SOAS Available at: http://www.soas.ac.uk/cdpr/publications/dv/file96579.pdf [last accessed 08.01.2015]

[45] Drake J.M. et al., Ebola cases and health system demand in Liberia, 30 Oct 2014, ArXiv.org (Cornell University Library) Available at http://arxiv.org/pdf/1410.8564v1.pdf [last accessed 07.01.2015]

[46] World Health Organization, *Barriers to rapid containment of the Ebola outbreak*. August 2014, Published online at http://www.who.int/csr/disease/ebola/overview-august-2014/en/ [last accessed 29.12.2014].

[47] Front Page Africa, Liberia health workers protest appalling working conditions, 14 April 2014. Available at http://frontpageafricaonline.com/index.php/health-sci/1319-liberia-health-workers-protest-appalling-working-conditions

[48] Health for All Coalition & Save the Children UK, Free Health Care in Sierra Leone. One Year On, National Public and Stakeholder's Perceptions of the Free Health Care Initiative

[49] IRIN, Guinea: Medicines running out, *IRIN News*, 15 May 2009, Available at http://www.irinnews.org/report/84408/guinea-medicines-running-out [last accessed 27.01.2015]

[50] IRIN, Guinea: Black market medicines re-emerge, *IRIN News*, 1 June 2009, Available at http://www.irinnews.org/report/84644/guinea-black-market-medicines-re-emerge [last accessed 27.01.2015]

[51] IRIN, Sierra Leone: Drug diversions hamper free healthcare, *IRIN News*, Available at http://www.irinnews.org/printreport.aspx?reportid=95896 [last accessed 28.01.2015]

[52] WHO (2010) Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies

[53] WHO and UNICEF estimates of national immunization coverage (WUENIC), 2013 revision (completed July 2014) http://data.unicef.org/child-health/immunization [last accessed 18 02 2015]

[54] UNICEF 2013

[55] Chatham House, *Ebola thrives in brittle West African health systems*. Published online 7 October 2014. Available at http://www.chathamhouse.org/expert/comment/15955?dm_i=1TYE,2VE2D,BM8VVU,AEI9D,1

[56] Oyerinde K., et al., The status of maternal and newborn care services in Sierra Leone 8 years after ceasefire, International Journal of Gynecology and Obstetrics 114 (2011) 168–173, doi:10.1016/j.ijgo.2011.05.006

[57] Government of Sierra Leone, Free healthcare services for pregnant and lactating women and young children in Sierra Leone, November 2009, Available at http://www.unicef.org/wcaro/wcaro_SL_freehealthcareservices_2010.pdf [last accessed 20.01.2015]

[58] McPake et al.: Removing financial barriers to access reproductive, maternal and newborn health services: the challenges and policy implications for human resources for health. Human Resources for Health 2013 11:46, doi:10.1186/1478-4491-11-46, Available at: http://www.human-resources-health.com/content/11/1/46 [last accessed 19.01.2015]

[59] Maxmen A. Sierra Leone's free health-care initiative: work in progress, World Report, *The Lancet*, Vol 381 January 19, 2013

[60] Diaz T. et al., Healthcare seeking for diarrhoea, malaria and pneumonia among children in four poor rural districts in Sierra Leone in the context of free health care: results of a cross-sectional survey, *BMC Public Health* 2013, 13:157, Available at http://www.biomedcentral.com/1471-2458/13/157 [last accessed 19.01.2015]

[61] Wurie H., Ebola's collision with the Sierra Leone post-conflict health system, Blog post, Health Systems Global, September 30, 2014, Available at: http://www.healthsystemsglobal.org/GetInvolved/Blog/TabId/155/PostId/27/ebolas-collision-with-the-sierra-leone-post-conflict-health-system.aspx [last accessed 21.01.2015]

[62] Kucharski AJ, Piot P. Containing Ebola virus infection in West Africa. Euro Surveill. 2014;19(36):pii=20899.

[63] Margaret E Kruk, Peter C Rockers, Elizabeth H Williams, S Tornorlah Varpilah, Rose Macauley, Geetor Saydeef and Sandro Galeag (2010) Availability of essential health services in post-conflict Liberia, *Bulletin of the World Health Organization* 2010;88:527–534

[64] Kruk, M., Rockers, P.C., Williams, E.H., Varpilah S.T., Macauley R., Saydeef G. & Galeag S., Availability of essential health services in post-conflict Liberia, *Bulletin of the World Health Organization* 2010;88:527–534 | doi:10.2471/BLT.09.071068

[65] Gartland M., Taryor VD., Norman AN., Vermund SH., Access to facility delivery and caesarean section in north-central Liberia: a crosssectional community-based study, BMJ Open 2012;2:e001602. doi:10.1136/bmjopen-2012-001602

[66] Cavallaro F.L., Cresswell J.A., França G.VA., Victora CG., Barros A.JD. & Ronsmansa C., Trends in caesarean delivery by country and wealth quintile: cross-sectional surveys in southern Asia and sub-Saharan Africa, *Bulletin of the World Health Organization* 2013;91:914–922D | doi: http://dx.doi.org/10.2471/BLT.13.117598 [last accessed 19.01.2015]

[67] WHO High level meeting on building resilient systems for health in Ebola-affected countries, 10–11 December 2014 Geneva, Switzerland

[68] ibid

[69] Downie R., The Road to Recovery. Rebuilding Liberia's health system, A Report of the CSIS Global Health Policy Center, 2012, Available at http://csis.org/files/publication/120822_Downie_RoadtoRecovery_web.pdf [last accessed 26.01.2015]

[70] ODI, Unblocking results. Case study. Addressing pay and attendance of health workers in Sierra Leone, May 2013, Available at http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8410.pdf [last accessed 26.01.2015]

[71] Santi E., What the Ebola outbreak tell us about poor governance and state fragility, 22 October 2014, African Development Bank Blog, http://www.afdb.org/en/blogs/measuring-the-pulse-of-economic-transformation-in-west-africa/post/what-the-ebola-outbreak-tell-us-about-poor-governance-and-state-fragility-13656/ [last accessed 26.01.2015]

[72] UNMEER report 16 January 2015 http://ebolaresponse.un.org/sites/default/files/150116_-_unmeer_external_situation_report.pdf

[73] Tambo E., Ugwu EC., Ngogang JY., Need of surveillance response systems to combat Ebola outbreaks and other emerging infectious diseases in African countries. Infect Dis Poverty. 2014 Aug 5;3:29. doi: 10.1186/2049-9957-3-29. eCollection 2014

[74] A World United Against Infectious Diseases: Connecting Organizations for Regional Disease Surveillance (CORDS) Emerging Health Threats Journal Supplement 1, 2013

[75] Chatham House Report (2014) What's the World Health Organization For? Final Report from the Centre on Global Health Security Working Group on Health Governance

[76] Ebola: a failure of international collective action, *The Lancet*, Volume 384, Issue 9944, 637

[77] Grady D., Ebola Vaccine, Ready for Test, Sat on the Shelf, *The New York Times*, Published Online 23 October 2014, http://www.nytimes.com/2014/10/24/health/without-lucrative-market-potential-ebola-vaccine-was-shelved-for-years.html?_r=0 [last accessed 16.02.2015]

[78] WHO, Ebola: one-year on report, January 2015. http://www.who.int/csr/disease/ebola/one-year-report/nigeria/en/

[79] WHO, Global Health Observatory Data Repository, http://apps.who.int/gho/data/?theme=main

[80] UN Special Envoy on Ebola *Resources for results : Overview of total available resources across governments, agencies, and organizations for Ebola response* 22 December 2014. This outlines: resources for Ebola response. Based on data collected from the different partners over the last few weeks, a total of USD 4.3 billion has been announced for the Ebola response including direct bilateral support (in kind and in cash) as well as resources for economic stability that go beyond the revised appeal of USD 1.5 billion. The disbursement rate is more than 43% (USD 1.85 billion) in less than 6 months. The allocation by country is as follows:

- USD 1.093 billion has been announced for Liberia
- USD 857 million has been announced for Sierra Leone
- USD 580 million has been announced for Guinea
- USD 610 million has been announced for regional projects (in affected or neighboring countries)
- USD 1.15 million has been announced for global projects, or has not been allocated yet

National governments have mobilized USD 2.75 billion, representing 64% of Ebola response funding. The breakdown is as follows:

- US: 704 million (26% of total governments contribution) including USD 233 million OCHA plan. Most of this funding takes the form of bilateral support for Liberia (552m).
- EC: USD 540 million (17% of total governments contribution)
- UK: USD 359 million (13% of total governments contribution) including USD 131 million OCHA plan. Most of this funding takes the form of bilateral support for Sierra Leone (359m).
- Germany: USD 202 million (8% of total governments contribution) including USD 124 million OCHA plan
- Additionally, USD 155 million were announced from Japan, USD 140 million from France, USD 120 million from China, USD 109 million from Canada and USD 423 million from the other governments

[81] ibid

[82] Report released by the World Bank Group, available http://documents.worldbank.org/curated/en/000112742_20150119170232 and updated at December 2014. Update on the Economic Impact of the 2014 Ebola Epidemic on Liberia, Sierra Leone, and Guinea Dec 02, 2014

[83] WHO, Global Health Expenditure Database. Available at http://apps.who.int/nha/database [last accessed 16.02.2015]

[84] WHO, Global Health Expenditure Database. Available at http://apps.who.int/nha/database [last accessed 16.02.2015]

[85] Chatham House, Shared Responsibilities for Health. A Coherent Global Framework for Health Financing, Chatham House Report, May 2014, Available at http://www.chathamhouse.org/sites/files/chathamhouse/home/chatham/public_html/sites/default/files/20140300DomesticFundingHealthMcIntyreMeheus.pdf [last accessed 16.02.2015]

[86] Obtained by calculating the cost of health spending for a 22 million population with a minimum spending of US$86 per capita and subtracting the amount already spent on health by these countries (US$280m).

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[87] Countdown to 2015 is a global movement of academics, governments, international agencies, health-care professional associations, donors, and nongovernmental organizations, with The Lancet as a key partner. For more information see: http://www.countdown2015mnch.org/about-countdown

[88] The Senate. Federal Republic Of Nigeria, National Health Bill, 2014 (sb.215). A Bill For An Act To Provide A Framework For The Regulation, Development And Management Of A National Health System And Set Standards For Rendering Health Services In The Federation, And Other Matters Connected Therewith, 2014.

[89] Countdown to 2015, (2014), Fulfilling the Health Agenda for Women and Children – The 2014 Report, 2014. available: http://www.countdown2015mnch.org/reports-and-articles/2014-report [last accessed 29.12.2014]

[90] All expenditure data from World Health Organization, Global health expenditure database. [Internet]. Geneva: World Health Organization; 2014. Available at: http://apps.who.int/nha/database

[91] 2010 Poverty headcount ratio at $2 a day (PPP) (% of population) World Bank development indicators available at: http://data.worldbank.org/indicator/SI.POV.2DAY

[92] Asia at a glance. OECD/WHO, Health at a Glance: Asia/Pacific 2014: Measuring Progress towards Universal Health Coverage, OECD Publishing, 2014. Available at http://dx.doi.org/10.1787/health_glance_ap-2014-1-en [last accessed 29.12.2014] Asia at a glance. Asia at a glance. Asia at a glance. Asia at a glance. http://www.keepeek.com/Digital-Asset-Management/oecd/social-issues-migration-health/health-at-a-glance-asia-pacific-2014_health_glance_ap-2014-en#page1

[93] Ibid

[94] Gresham L., Smolinski M.S., Suphanchaimat R., Kimball A.M. and Wibulpolprasert S., A World United Against Infectious Diseases: Connecting Organizations for Regional Disease Surveillance (CORDS), Emerg Health Threats J. 2013; 6: 10.3402/ehtj.v6i0.19912. Published online Jan 25, 2013. doi: 10.3402/ehtj.v6i0.19912 [last accessed 13.01.2015]

[95] Poon LL M., Guan Y., Nicholls JM, Yuen KY, and Peiris JSM, The aetiology, origins, and diagnosis of severe acute respiratory syndrome. Reviews, *The Lancet Infectious Diseases* 2004; 4: 663–71, Available at http://www.thelancet.com/pdfs/journals/laninf/PIIS1473-3099(04)01172-7.pdf [last accessed 17.12.2014]

[96] Viboud C., Simonsen L., Global mortality of 2009 pandemic influenza A H1N1, *The Lancet Infectious Diseases* Volume 12, No. 9, p651–653, September 2012, DOI: http://dx.doi.org/10.1016/S1473-3099(12)70152-4 [last accessed 17.12.2014]

[97] Taubenberger JK, Morens DM. 1918 influenza: the mother of all pandemics. *Emerg Infect Dis* [serial on the Internet]. 2006 http://dx.doi.org/10.3201/eid1209.050979

[98] ibid

[99] Kamradt-Scott A., 2012. Changing Perceptions of Pandemic Influenza and Public Health Responses, *American Journal of Public Health*, | January 2012, Vol 102, No. 1 doi:10.2105/AJPH.2011.300330 [last accessed 29.12.2014]

[100] Erkoreka A., Origins of the Spanish Influenza pandemic (1918–1920) and its relation to the First World War, in *J Mol Genet Med* (2009), 3(2), 190–194, Available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2805838/ [last accessed 08.12.2014]

[101] Johnson N. and Mueller J., Updating the accounts: Global mortality of the 1918–1920, Spanish influenza pandemics, *Bulletin of the History of Medicine*, Volume 76, Number 1, Spring 2002, pp. 105–115 (Article), John Hopkins University, DOI: 10.1353/bhm.2002.0022 [last accessed 05.12.2014]

[102] Light D. W., Universal Health Care: Lessons From the British Experience, *American Journal of Public Health*, 2003 January; 93(1): 25–30, Available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1447686/ [last accessed 09.12.2014]

[103] Western European countries where the death toll was the highest. No data was found for Spain.

[104] Calculated from Malatesta M. et al., Society and the Professions in Italy, 1860–1914, New York: Cambridge University Press, 1995.

[105] Between 2005 and 2011 (last data available data). WHO, Global Health Observatory Data Repository

[106] Calculations based on per capita GDP (LSE Aggregate And Per Capita GDP In Europe, 1870–2000: Continental, Regional And National Data With Changing Boundaries, Available at www.lse.ac.uk/economicHistory/pdf/Broadberry/EuroGDP2dataset.xls [last accessed 05.12.2014]), public spending on health in 1910 (Vito T., Schuknecht L. Public Spending in the 20th Century: A Global Perspective, Cambridge: Cambridge University Press, 2000), and conversion to 2014 prices (deflator index of 108.169 in 2014)

[107] At exchange rate. Data calculated based on WHO, Global Health Expenditure Database, http://apps.who.int/nha/database/ViewData/Indicators/en [last accessed 09.12.2014]

[108] Watanabe et al., Circulating Avian Influenza Viruses Closely Related to the 1918 Virus Have Pandemic Potential, *Cell Host and Microbe*, Volume 15, Issue 6, 11 June 2014, Pages 692–705, Available at http://www.sciencedirect.com/science/article/pii/S1931312814001632 [last accessed 17.12.2014]

[109] Osterholm M., Preparing for the Next Pandemic, *N Engl J Med* 2005; 352:1839-1842, DOI: 10.1056/NEJMp058068 [last accessed 17.12.2014]

[110] Murray CJ. et al., Estimation of potential global pandemic influenza mortality on the basis of vital registry data from the 1918–20 pandemic: a quantitative analysis. In: Lancet. 2006 Dec 23;368(9554):2211–8. The calculation was based on the excess mortality between 1918 and 1920 in a set of countries where data was available. To calculate the global mortality in 2004, this figure was applied to the world's, countries' and regions' 2004 figures by taking into account population size, age composition of the populations and changes in per-head income (as per-head income is responsible for half of the variance in mortality rates. The results show that 96% of the deaths would occur in developing countries.

[111] Countdown to 2015 is a global movement of academics, governments, international agencies, health-care professional associations, donors, and nongovernmental organizations, with The Lancet as a key partner. For more information see: http://www.countdown2015mnch.org/about-countdown

[112] UNICEF, *Committing to Child Survival: A Promise Renewed – Progress report*, 2014

[113] The estimates of countries' progress towards MDG 4 were produced using data from GRID database, developed by Save the Children. GRID is based on direct data processing of 257 Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) from 87 countries. It also contains annual national estimates produced by the UN Inter-agency Group on Child Mortality Estimation (last updated on 16 September 2014). This data is more updated than the ones used in some of the national MDG reports, therefore for a few cases our projections may differ from the projections provided in the country's MDG report.

[114] To reduce under-five child mortality by two-thirds between 1990 and 2015, a country would need to have an annual rate of progress of 4.3% a year. Therefore, if according to available data the country/group reduced under-five child mortality at or above this rate in the given time period (1990–2013 or 2000–13), we report it to be on track to achieve MDG4. To calculate the average annual progress we used the following formula: AARR = ((*CML*/ *CME*)^(1/n))-1, Where: *CML* = child mortality rate from the latest year/survey; *CME* = child mortality rate from the earlier year/survey; n = the number of years between data points/surveys.

The national level estimates are produced based on most recent data available from the UN Inter-agency Group on Child Mortality Estimation (published on 16 September 2014). This data is more updated than the ones used in some of the national MDG reports, therefore for a few cases our projections of whether or not a country will meet the MDG4 target may differ from the projections provided in the country's MDG report.

3 UNIVERSAL HEALTH COVERAGE: WITHIN OUR MEANS

[115] WHO definition of universal health coverage: http://www.who.int/health_financing/universal_coverage_definition/en/

[116] WHO definition of universal health coverage: http://www.who.int/health_financing/universal_coverage_definition/en/

[117] Wagstaff A., Manachotphong W., The Health Effects of Universal Health Care. Evidence from Thailand, The World Bank, July 2012, Available at http://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-6119 [last accessed 13.01.2015]

[118] United Nations General Assembly, Report of the Open Working Group of the General Assembly on Sustainable Development Goals, Document A/68/970, 12 August 2014, Available at https://sustainabledevelopment.un.org/content/documents/1579SDGs%20Proposal.pdf [last accessed 16.02.2015]

[119] Kutzin, J. 2012. 'Anything goes on the path to universal health coverage? *Bulletin of the World Health Organization* 2012; 90:867-868. doi: 10.2471/BLT.12.113654.

[120] Jameson D., Summers L., Allenyne G., et al. (2013) 'Global health 2035: a world converging within a generation'. *The Lancet* 382: 1898–955.

[121] Brearley L, Marten R & O'Connell T, Universal Health Coverage: A Commitment to Close the Gap. Rockefeller Foundation, Save the Children, UNICEF, and WHO, 2013

[122] McIntyre D. and Meheus F., Fiscal Space for Domestic Funding of Health and Other Social Services, Chatham House, Working Group on Financing, Paper 5, 2014. Available at http://www.chathamhouse.org/sites/files/chathamhouse/home/chatham/public_html/sites/default/files/20140300DomesticFundingHealthMcIntyreMeheus.pdf [last accessed 05.01.2015]

[123] All health expenditure data in 2012 USD, taken from World Health Organization, Global health expenditure database. [Internet]. Geneva: World Health Organization; 2014. Available at: http://apps.who.int/nha/database

[124] The case against private out-of-pocket payment for health is now well-established, with the World Bank President, Jim Kim, saying: "Even tiny out-of-pocket charges can drastically reduce the use of needed services. This is both unjust and unnecessary." World Bank Group President Jim Yong Kim's Speech at World Health Assembly: Poverty, Health and the Human Future World Health Assembly Geneva, Switzerland May 21, 2013

[125] Research conducted for Save the Children Working paper (2014) *Within our means: Why countries can afford universal health coverage*. See Appendix for details of the methodology used in calculating the gap and how this could be closed. All figures look at public spending on health, using 2012 $ exchange rates.

[126] Jamison, D T et al 2013. Global health 2035: a world converging within a generation. *The Lancet*. 382:9908. 1989–1955; Yates, R. 2009. Universal health care and the removal of user fees. *The Lancet*: Vol 373, 13 June 2009; Savedoff, WD. 2012. Transitions in Health Financing and Policies for Universal Health Coverage. Results for Development Institute. Washington D.C.; Moreno-Serra, R, and Smith, P. 2012. Does progress towards universal health coverage improve population health? *The Lancet* 380(9845): 917–923.

[127] Carrin, G. (2004) 'Towards advanced risk-sharing in health care financing: with a focus on the potential of social health insurance in developing countries', *Verhandelingen – Koninklijke Academie voor Geneeskunde van België*, 66(3): 215–234.

[128] Kutzin, J. 2012. 'Anything goes on the path to universal health coverage? No.' *Bulletin of the World Health Organization* 2012; 90:867–868. doi: 10.2471/BLT.12.113654.

[129] Research conducted for Save the Children Working paper (2014) *Within our means: Why countries can afford universal health coverage*. See Appendix for details of the methodology used in calculating the gap and how this could be closed. All figures in real terms, removing the impact of inflation (2012 $)

[130] Lancet Commission on Investing in Health

[131] UNDP 2010. What Will it Take to Achieve the Millennium Development Goals? An international assessment, p26

[132] OECD (2013), *Tax Morale* http://www.oecd.org/ctp/tax-global/TaxMorale_march13.pdf Accessed 8 January 2013.

[133] Updated data compiled by Christian Aid. *On Africa: from the OECD African Economic Outlook*. http://www.africaneconomicoutlook.org/en/statistics/aeo-fiscal-data-1996-2012/

On Latin American countries, Revenue statistics – Latin American countries http://stats.oecd.org/index.aspx?DataSetCode=REV

For Asia, from Asian Development Bank: http://www.adb.org/sites/default/files/pub/2014/ki2014.pdf

[134] Tandon and Cashin Assessing (2010) *Public Expenditure on Health from a Fiscal Space Perspective*. World Bank, Health, Nutrition and Population (HNP) Discussion Paper.

[135] McIntyre, D. and Meheus, F. 2013 *Fiscal Space for Health Spending*. Chatham House Working Group on Financing: Paper 4.

[136] RESYST. 2013. 'Fiscal space for health: Topic overview'.

[137] By 2,000% over a six-year period in Lesotho, and 4,000% in Burundi. Kieron Holmes, Burundi tax authority, presentation to ODI Cape conference, November 2014.

[138] Tax Justice Network 2012, The Price of Offshore Revisited. Available at http://www.taxjustice.net/cms/upload/pdf/The_Price_of_Offshore_Revisited_Presser_120722.pdf

The original research is available here: Tax Justice Network, 2005. The Price of Offshore http://www.taxjustice.net/cms/upload/pdf/Price_of_Offshore.pdf

Cobham, A., (2005) 'Tax evasion, tax avoidance and development finance'. Queen Elizabeth House, Série documents de travail. Available at: http://www3.qeh.ox.ac.uk/pdf/qehwp/qehwps129.pdf Accessed 11 March 2013.

[139] Tax Justice Network and Christian Aid. 2014. Africa Rising? Inequalities and the essential role of fair taxation.

[140] South Africa National Treasury (2012) Budget Review 2012. Available at http://www.treasury.gov.za/documents/national%20budget/2012/review/FullReview.pdf

[141] Health expenditure data in 2012 USD, source: World Health Organization, Global health expenditure database. [Internet]. Geneva: World Health Organization; 2014. Available at: http://apps.who.int/nha/database

[142] ODA makes up 46% of total health expenditure, double the average in Countdown Countries. Health expenditure data in 2012 USD, taken from World Health Organization, Global health expenditure database. [Internet]. Geneva: World Health Organization; 2014. Available at: http://apps.who.int/nha/database

[143] Research conducted for Save the Children Working paper (2014) *Within our means: Why countries can afford universal health coverage*. See Appendix for details of the methodology used in calculating the gap and how this could be closed.

[144] Goldsborough D. Does the IMF constrain health spending in poor countries? Evidence and an agenda for action. Washington, DC: Center for Global Development, 2007.

[145] Alexander Kentikelenis, Lawrence King, Martin McKee, David Stuckler – The International Monetary Fund and the Ebola outbreak letter to the Lancet Published Online December 22, 2014 http://dx.doi.org/10.1016/ S2214-109X(14)70377-8

[146] IMF Response to The Lancet article on "The International Monetary Fund and the Ebola Outbreak" December 22, 2014 Sanjeev Gupta. Available at: https://www.imf.org/external/np/vc/2014/122214.htm

[147] Rick Rowden (2010) Restrictive IMF Policies Undermine Efforts at Health Systems Strengthening (HSS). World Health Report (2010) Background Paper, No 50. Available at http://www.who.int/healthsystems/topics/financing/healthreport/50RowdenFINAL.pdf

[148] IMF. Managing Director's remarks on the impact of Ebola. http://www.imf.org/external/mmedia/view.aspx?vid=3830643908001 [accessed Nov 24, 2014]

[149] Jameson D., Summers L., Allenyne G., et al. (2013) 'Global health 2035: a world converging within a generation'. *The Lancet* 382: 1898–955.

[150] McIntyre, D. and Meheus, F. 2013 *Fiscal Space for Health Spending.* Chatham House Working Group on Financing: Paper 4.

[151] WHO. 2014. *Making Fair Choices on the Path to Universal Health Coverage*. Final report of the WHO Consultative Group on Equity and Universal Health Coverage.

[152] Watkins K, Alemayehu W (2012) *Financing for a fairer, more prosperous Kenya: a review of the public spending challenges and options for selected arid and semi-arid counties* Brookings Working Paper 6

[153] WHO. 2010. World Health Report: Financing for Universal Health Coverage.

[154] Research conducted for Save the Children Working paper (2014) *Within our means: Why countries can afford universal health coverage*. See Appendix for details of the methodology used in calculating the gap and how this could be closed

[155] World Health Organization (2010) World Health Report: Health systems financing, the path to universal coverage, World Health Organization: Geneva.

[156] United Nations General Assembly (UNGA), Resolution (A/67/L.36). Global health and foreign policy, Available at http://www.un.org/ga/search/view_doc.asp?symbol=A/67/L.36&referer=http://www.un.org/en/ga/info/draft/index.shtml&Lang=E [last accessed 13.01.2015]

World Health Assembly, Resolution WHA58.33. Sustainable health financing, universal coverage and social health insurance, 2005, Available at http://apps.who.int/iris/bitstream/10665/20383/1/WHA58_33-en.pdf?ua=1 [last accessed 13.01.2015]

World Health Assembly, Resolution WHA64.9. Sustainable health financing structures and universal coverage, 2011, Available at http://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_R9-en.pdf [last accessed 13.01.2015]

[157] Waage J., Banerji R., Campbell O., et al. The Millennium Development Goals: a cross-sectoral analysis and principles for goal setting after 2015. *The Lancet* 2010; 376: 991–1023. Available at http://download.thelancet.com/flatcontentassets/pdfs/S0140673610611968.pdf [last accessed 16.02.2015]

[158] House of Commons International Development Committee, Strengthening Health Systems in Developing Countries, Fifth Report of Session 2014–15

[159] World Health Organization, HIV/AIDS. Fact sheet no. 360, Update November 2014. Available at http://www.who.int/mediacentre/factsheets/fs360/en/ [last accessed 13.01.2015]). In 2013, 12.9 million people living with HIV were receiving antiretroviral therapy (ART) globally, of which 11.7 million were receiving ART in low- and middle-income countries.

[160] World Health Organization, Immunization coverage, fact sheet no. 378, Reviewed November 2014. Available at http://www.who.int/mediacentre/factsheets/fs378/en/ [last accessed 13.01.2015])

[161] Monitoring progress towards universal health coverage at country and global levels: Framework, measures and targets, World Bank and WHO, May 2014

[162] Save the Children (2014) Framework for the Future Ending poverty in a generation. Available at: http://www.savethechildren.org.uk/resources/online-library/framework-future#sthash.I7pGRygO.dpuf

CONCLUSION

[163] WHO, High level meeting on building resilient systems for health in Ebola-affected countries, 10–11 December 2014, Geneva, Switzerland. Meeting report Available at: http://www.who.int/csr/resources/publications/ebola/hs-meeting.pdf?ua=1 [last accessed 07.01.2015]

APPENDIX: THE HEALTH ACCESS INDEX – DATA SOURCES AND METHODOLOGY

[164] Countdown to 2015 (2014), Fulfilling the Health Agenda for Women and Children – The 2014 Report, available: http://www.countdown2015mnch.org/reports-and-articles/2014-report [last accessed 29.12.2014]

[165] World Health Organization, Global health expenditure database, [Internet]; 2014.2014. Available from: http://apps.who.int/nha/database

[166] Evans D, Justine Hsu and Ties Boerma, Penchansky R. and Thomas JW. (1981) The concept of access: definition and relationship to consumer satisfaction. *Med Care* 1981; 19: 127–40, Available at http://www.ncbi.nlm.nih.gov/pubmed/7206846 [last accessed 29.12.2014]

[167] Ricketts, T. and Goldsmith, L. (2005) Access in health services research: the battle of the frameworks. *Nursing Outlook*. 53: 274–280, 2005, Available at http://www.ncbi.nlm.nih.gov/pubmed/16360698 [last accessed 29.12.2014]

[168] World Bank, (2013) Transport, GIS and DHS Surveys: Transport, GIS and DHS Surveys: Mapping the Evidence on Access, Mobility and MDG Impact, 2013. Available at: http://www.worldbank.org/transport/transportresults/program/dc-03-07/gis-in-lesotho.pdf [last accessed 29.12.2014]

[169] Bhutta, Zulfiqar A et al Can available interventions end preventable deaths in mothers, newborn babies, and stillbirths, and at what cost? *The Lancet*, Volume 384, Issue 9940, 347–370 http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(14)60792-3.pdf

SAVE THE CHILDREN'S RESPONSE TO EBOLA

[170] Obe G. O., Ebola crisis: doing whatever it takes, Save the Children's Blog posted on December 23, 2014. Available at http://www.savethechildren.org.uk/about-us/emergencies/ebola-crisis-latest-updates [last accessed 07.01.2015]

[171] Ibid.

[172] Obe G. O., Ebola crisis: doing whatever it takes, Save the Children's Blog posted on December 23, 2014. Available at http://www.savethechildren.org.uk/about-us/emergencies/ebola-crisis-latest-updates [last accessed 07.01.2015]

[173] Save the Children. Preliminary Response Plan, 22.09.14

SAVE THE CHILDREN'S RESPONSE TO EBOLA

Save the Children first began responding to this crisis in March 2014.[170] Our response so far has aimed to reduce transmission, to support affected children and to treat those infected.

In Liberia we have built two Ebola treatment units; both of which are run by International Medical Corps. In addition to the treatment units, we have constructed and now run two community care centres that allow for the rapid isolation and testing of those suspected of having Ebola, providing a basic level of care before patients are transferred to Ebola treatment units.[171]

In Sierra Leone, we are running an 80-bed Ebola Treatment Centre in Kerry Town. As part of this centre we have constructed an Observation Interim Care Centre for children who are considered high risk having been in direct contact with the virus.

We are providing specialist equipment for medical staff across the three countries and supporting people working on the outbreak by: training teachers, health workers, nurses and local organisations on prevention measures, and by distributing protective equipment (eg, soap, chlorine, boilers) and medical supplies (eg, intravenous fluids, drugs and antibiotics) to health facilities.

We are ensuring the quick isolation of possible Ebola patients at community level, informing people how to spot the early signs and symptoms of Ebola, and how to act[172] while supporting communities to reduce transmission through changing hand-washing and hygiene practices.

As the response begins to move into one of recovery, Save the Children is doing the following across all three countries:

- preparing schools to reopen by training teachers in infection prevention and control and psychosocial support to help children deal with their experiences, referring children for further assistance where necessary
- distributing protective kits in schools, including soap, cleaning brushes, gloves, water mugs, washbasins, waste bins, chlorine and small individual boilers
- providing psychosocial support to help survivors come to terms with their experiences
- providing protection and support to children who have lost their parents/caregivers to the virus
- conducting family tracing and reunification for children who have lost their parents/caregivers to the virus.

Save the Children has been working in Guinea, Liberia and Sierra Leone for over 15 years and will continue to work in the fields of health; child protection; education; water, sanitation and hygiene; and nutrition[173] long after the number of Ebola cases reaches zero. We are committed to long-term strategies to strengthen health systems and maintain access to healthcare for non-Ebola conditions. We are also working to ensure access to essential services and protection of the livelihoods of communities, given the threats to economic activities, such as agriculture.

Finally, Save the Children is contributing to prevention and preparedness strategies in neighbouring countries that have not been affected so far but that are at risk.In Côte d'Ivoire, we developed a contingency plan and are active in national coordination groups.

A **WAKE-UP** CALL

Lessons from Ebola for the world's health systems

COVER PHOTO: SAMUEL ARANDA/PANOS PICTURES

There is general agreement that the Ebola crisis was not quickly contained in Guinea, Liberia and Sierra Leone because their national health systems were dangerously under-resourced, understaffed and poorly equipped.

A Wake-up Call argues that we must learn the lessons of this crisis not just for the three countries but for the many other developing countries whose services are similarly weak. Failure to do so risks future infectious disease outbreaks that, in our interconnected world, have the potential to lead to global pandemics, including conditions even more infectious than Ebola.

The new Health Access Index ranks countries according to spending on health, number of health workers, coverage of maternal and child health services, and mortality rates. It shows that Sierra Leone, Liberia and Guinea are far from alone in having weak health systems.

The report goes on to look at how this crisis in health systems in poorer countries can be addressed. It analyses how the funding gap in providing good-quality healthcare for all – not just those who can afford it – can be closed.

A Wake-up Call closes with recommendations for global commitment to universal health coverage – from governments, donors, international institutions and civil society.

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