Rethinking the Global Health System

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Contents

Summary

- Current deliberations on global health in the post-Millennium Development Goals era have largely focused on *what* will be needed to achieve the new health targets set out in the Sustainable Development Goals (SDGs), but more is needed now on *how* to respond to the challenges post-2015.

- Strong, resilient and equitable systems that enable all people to live healthy lives are required at country level – the global health architecture should be rethought in a way that best supports the building of these systems.

- A fundamental shift affecting global health is the rising burden of non-communicable diseases (NCDs). The ageing of the population – a key driver in the rise of NCDs – represents a significant challenge to global health. Low-income and lower-middle-income countries that are still battling infectious diseases are faced with a 'double burden' of disease that in many cases overstretches already weak health systems.

- The recent Ebola crisis in West Africa has shown that weak health systems make countries more vulnerable, and underscores the importance of strengthening these systems to protect global health security. There is a need for enhanced global disease surveillance and detection capacities, as well as improved international coordination in responding to emerging health threats.

- Many low- and middle-income countries are projected to experience substantial economic growth into the next decade, which should enable them to spend more on health themselves. The capacity of the global architecture should be strengthened to support countries in expanding their fiscal space for, and commitment to, financing for health and health systems, and to increase public funding for poor and vulnerable populations – particularly women and children.

- Global health funders must continue to explore how their strategies can address the rising challenges of poor populations and pockets of high disease burden in middle-income countries. Supporting fragile states more effectively will also be critical in the SDG era, as their populations are disproportionally affected by major health problems.

- Insufficient financing and weak incentives currently exist for investment in research and development (R&D) to tackle neglected and poverty-related diseases. Expanding R&D financing and the range of incentives for investing in R&D is a priority area for action.

- There is a need for stronger leadership in global health. One proposal involves the creation of a new organization, termed UN-HEALTH. This would bring together, based on a common results framework, all UN agencies with health-related mandates. Alternatively, a UN Health Commission could be set up to improve coordination without the radical changes to the architecture required for a UN-HEALTH.

Preface

In September 2014 Chatham House launched the Rethinking the Global Health Architecture Project, to assess the global health architecture's fitness for purpose in fulfilling its key functions in a rapidly changing world. The goal of this project was to catalyse informed dialogue among principal stakeholders and decision-makers on the future of the global system for health. This paper, as the final report of the project, assesses the global health architecture in the context of emerging trends and challenges, examines reform proposals, and presents options for improving the architecture. To enable a systematic analysis, a framework identifying four essential functions of the global health system was adopted: management of externalities; provision of global public goods (GPGs); direct country support; and leadership and stewardship. A participatory approach was used to prepare this paper: its findings build on three policy roundtables, one focus group and key informant interviews with senior stakeholders. The project's findings are timely in light of emerging health trends and ongoing discussions on the evolution of processes to enable the attainment of the forthcoming Sustainable Development Goals (SDGs).

Is the current global health system fit for purpose?

There has been major progress in health across the world over the last two decades. Life expectancy has risen, and many more people live healthy lives thanks largely to increased access to medicines, vaccines and health services. The massive surge in global health funding and the creation of new initiatives have contributed to these advances, while lower levels of poverty, better education and improved access to clean water have further driven gains in health. The Millennium Development Goals (MDGs) have played a key role in these improvements by galvanizing support for specific health areas. However, major needs remain: a woman's lifetime risk of dying in pregnancy or childbirth is 25 times higher in low-income countries (LICs) and lower-middle-income countries (lower-MICs) than it is in high-income countries (HICs). The rapid transmission of Ebola across national borders in the 2014 outbreak demonstrated that states are increasingly vulnerable to disease threats emerging beyond their borders. The global burden of disease is shifting away from infectious diseases to non-communicable disease challenges, many of which are influenced by drivers beyond the health sector. The global health architecture needs to be appropriate to meet complex needs in the context of demographic shifts, anticipated and potentially unknown economic and political developments, and unforeseen disease outbreaks.

These emerging challenges do not align well with the traditional understanding of health as a largely biomedical concept. While historically the focus has rested on reducing illness and death through healthcare interventions, other influences – such as access to safe drinking water, proper sewage treatment, quality education, jobs, clean energy and strong institutions of justice – are increasingly recognized as significantly affecting health outcomes. Focusing on the determinants of health outside the health sector also requires embedding human rights, equity and women's empowerment in the framework of the global health architecture. For example, women with greater access to education and economic opportunities are more likely to have fewer children, more likely to access health services, and less likely to suffer domestic violence. Addressing determinants of health outside the health sector requires *cross-sectoral collaboration* and linkages to other policy domains.

Rapid growth in LICs and middle-income countries (MICs) suggests that the economic context will soon be very different from today's, with more countries able to finance their domestic health needs and fewer dependent on external support. However, the transitioning of countries away from financial assistance is not necessarily accompanied by concurrent health improvements. The growth transition has caused the locus of the global burden of disease to shift. Some 70 per cent of the burden of disease, including 63 per cent of the burden of HIV and 73 per cent of the burden of TB, is now located in MICs. Much of this falls on vulnerable and marginalized subpopulations, including certain ethnic groups, refugees, people who inject drugs and sex workers.[1] For the future, the system needs to address questions of how to support countries in transition, provide more domestic resources for health, and ensure that health outcomes for the very poor and marginalized are improved.

In addition, LICs will require continued international support for health service delivery in the coming decades. Estimates suggest there will be still be 22 LICs in 2035, compared with 36 in 2012. Many of these countries are fragile and affected by conflict. Of the seven countries that have not met any of the MDGs, six are fragile states.[2, 3] This trend will continue unless there is a greater focus on such states.

In this context of change, today's global health system appears not to be best prepared to face a new world of challenges. As this paper shows, there is a need, *inter alia*, for stronger leadership in global health, more efficient and effectively directed country support, and a better global system to detect and respond to infectious diseases outbreaks. Major reform proposals have been suggested to address shortfalls in the functioning of global health, and current and forthcoming opportunities provide ideal timing for making the global health system more fit for purpose.

Making the case for change: a lifetime opportunity for global health

The SDGs provide an important window of opportunity for integrating health with the broader development agenda, addressing the 'unfinished' health-related MDGs, and tackling emerging challenges. Centred on people, the SDGs will include one explicit set of health targets (grouped in SDG 3): *to 'ensure healthy lives and promote wellbeing for all at all ages'*.[4] The broad mandate of the health SDG forms the basis for an integrated, systemic approach to global health aimed at achieving specific disease targets. By acknowledging the need for inter-sectoral cooperation and recognizing the broad determinants of health, the SDGs emphasize the linkages between health, gender and other sectors, including education and the environment. They offer an important opportunity to establish a post-2015 development agenda grounded in inter-sectoral cooperation, human rights and country ownership.

However, this paper suggests that the SDGs will not be achieved unless the existing architecture is changed, and in some areas completely transformed. Furthermore, while the current post-2015 deliberations have focused on *what* should be achieved collectively in the next 15 years, more debate is now needed on *how* the future global health targets will best be attained.

The recent Ebola crisis has provided an impetus to transform the current system and improve surveillance, detection and response to outbreaks in the future. The delayed response to the Ebola outbreak and failure to scale up expertise and resources promptly show that better outbreak detection and control – including strengthened global surveillance and rapid response mechanisms – are needed. It has also helped to build the necessary sense of urgency for action, with a number of initiatives now under way to improve the global system for detecting and responding to outbreaks within the overall framework of the planned SDGs. This paper intends to help inform these processes.

Finally, the next two years also present a watershed period for global health leadership. In 2016 a new UN Secretary-General will be elected to succeed Ban Ki-moon, whose term of office expires at the end of that year, and 2017 will see the election of the next Director-General of the World Health Organization (WHO), in succession to Margaret Chan. The first five-year mandate of the World Bank President, Jim Yong Kim, will also end in 2017. All three institutions have been faced with the need to tackle a set of new crises that transcend national borders. Strong stewardship will be critical in the rapidly changing 'ecosystem' affecting global health, and the leadership changes offer an opportunity to shape and drive necessary change.

The opportunities available to develop an ambitious agenda for reform at this crossroads for global health could save and improve the lives of millions, and are too valuable to be ignored by world leaders.

Making the global health system 'fit for purpose' for the SDG period: priorities for action

One major purpose of the global health system in the post-2015 era must be to support the attainment of SDG 3 and related targets effectively. This will require strong, resilient and equitable systems that enable all people to live healthy lives. Building *'healthy, resilient systems for healthy people'* – as the collective challenge was summarized by participants at the final high-level Chatham House roundtable for this project – will involve a much stronger focus on tackling the broad determinants of health, and will require working across sectors, empowering individuals and communities to make healthy choices, and protecting human rights. Establishing these new ways of working will help to engender public trust at country level, and advance the accountability and ownership needed to implement the global health goals. Priority areas for change and associated reform options to make the system fit for purpose include: enhancing the global system for detecting and responding to infectious outbreaks; scaling up the provision of GPGs for health; optimizing direct country support to address changing country needs; and strengthening leadership and cross-sectoral coordination.

Enhancing the global system for detecting and responding to infectious disease outbreaks

The delayed response to the 2014 Ebola outbreak shows that more robust outbreak detection and control systems – including strengthened global surveillance and rapid response systems, with substantial surge capacity – are needed. Actions considered in consultations include:

1. **Improve and formalize international coordination and capacity for responding to public health crises.** The WHO's technical capacity and norm- and standard-setting legitimacy indicates that, adequately resourced, it has a key role to play in coordinating the actors involved and scenario planning before crises. While it was agreed at the 2015 World Health Assembly (WHA) that the WHO's emergency response capacity should be strengthened, more efforts are needed to improve coordination between all relevant actors, including civil society organizations (CSOs). An Independent Expert Group convened in advance of the 2015 G7 summit recommended creating a new autonomous entity within the WHO that would be responsible for all emergency preparedness and response. The coordination of health crisis response could also be led by a Public Health Emergency

Troika, as suggested at one of the roundtable consultations. A formal collaboration could be established between the WHO, to provide technical public health leadership and knowledge; the Office for the Coordination of Humanitarian Affairs (OCHA), to take charge of the coordination and management of responders; and the World Food Programme (WFP), to mobilize logistical support.

2. **Strengthen global disease surveillance and detection capacities.** Improving public health crisis monitoring and response will require further integration of surveillance into global action plans and better coordination between existing local, national, regional and international networks of laboratories and public health institutions. In the wake of the Ebola crisis, calls have been made to scale up financial commitments from HICs to support countries in establishing the surveillance and detection systems needed to respond to emerging disease outbreaks.[56, 78] Building on the Global Outbreak Alert and Response Network (GOARN), an enhanced network of public institutions and non-state actors could be established to facilitate rapid cross-border collaboration and information sharing.

Providing GPGs

Despite gains made in the areas of knowledge, standards and technology, there is a need to scale up health research and development (R&D) and improve access to new technologies and pharmaceutical products. Millions of people in LICs and MICs continue to die from diseases that could be addressed by large-scale investments in R&D, but which remain economically unattractive to the pharmaceutical industry. Only $3.2 billion of R&D funding was spent on neglected diseases in 2013, a figure that represents just 1–2 per cent of total health R&D.[9] Boosting R&D for diseases of the poor is also challenging because investors often make investments independently of one another, resulting in a fragmented financing landscape that makes the introduction and scale-up of new health technologies and products difficult. Roundtable participants suggested focusing on two critical areas to correct existing market failures:

1. **Increase R&D financing through a global responsibility framework.** With inadequate funding being one of the main causes of insufficient R&D for diseases of poverty, the WHO's Consultative Expert Working Group (CEWG) on Research and Development: Financing and Coordination recommended an agreement that would oblige all countries to contribute to R&D financing. Irrespective of the specific nature of such an agreement, there is a need for a framework for R&D financing, and possibly for other GPGs for health.

2. **Develop a partnership for investors to coordinate blended financing for global health innovations.** To reduce fragmentation in the financing landscape for global health innovations, participants of one roundtable proposed a partnership that would serve as a forum, curator, syndicator and bridge across the public and private actors involved in taking promising technology from proof of concept to delivery at scale. Investors would be provided with a broad platform of services, including access to shared, credible, consistent, comparable assessments of innovations and a finance team to help negotiate coordinated financing deals. The partnership would help curate technologies through the product development process, and in so doing absorb the transaction costs of mixed funding for innovations, and connect scientific and medical expertise with investors, and innovation with procurement.

Optimizing direct country support to address changing country needs

While the rise in development assistance for health (DAH) and the creation of new funding mechanisms have contributed to progress towards meeting the MDGs, it is clear that the direct country support function of the global health architecture is oriented more towards addressing priority challenges encountered during the last two decades than towards those likely to arise in the coming years. One of the key – and most controversial – questions in need of resolution is how to support countries in transition. Areas for action that were identified include:

1. **Separate financial and technical support.** A critical step towards rationalizing the network of global health actors is to move towards separating financiers from providers of technical support. There is an inherent conflict of interest in providing technical support while also funding programmes. When both funding and technical support are provided by an external source, the opportunity for countries to drive the development of strategies and policies can be constrained. Global health actors should therefore redistribute responsibilities: progressively, UN and bilateral agencies should focus on the provision of technical assistance while a limited number of multilateral funders provide financial support. Stronger in-country partnerships between technical and funding agencies are needed to make this division of responsibilities effective.

2. **Reinforce the consolidation and integration of financing channels.** The consolidation of financing channels into a Global Fund for Health continues to be put forward as a way to help reduce inefficiencies, increase accountability, manage transitions and ease the burden of application and reporting processes for countries. Less radical proposals focus on strengthening coordination between key funders, among them the Global Fund to Fight AIDS, Tuberculosis and Malaria (the Global Fund); Gavi, the Vaccine Alliance; and the World Bank. Integral parts of these arrangements are the co-financing of country plans, joint fiduciary frameworks and joint progress reporting. For the area of reproductive, maternal and child health, the Global Financing Facility for Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) is one concrete effort to scale up and align financing of multilateral and bilateral donors at country level.

3. **Tailor support to countries in transition and fragile states.** The role of technical support and political advocacy will become increasingly important for those countries transitioning away from financial support, if they are successfully to expand their fiscal space and revenues for health. Greater global capacity to provide such support will be critical to increase domestic health spending in countries. Matching the existing range of financial instruments more efficiently with country transition paths will also be key to ensuring that states adequately manage transitions. The Global Fund, for instance, has considered developing a transition instrument, such as a loan agreement, to continue to provide support in countries that have moved away from grant eligibility for key health system issues.[10] At the final roundtable, participants also identified the need for more strategic use of loans to sustain and build on health gains in MICs. In addition, better strategies and greater international support are needed to improve health in fragile states. More effective linkages and coordination between health, development and humanitarian actors, as well as a heightened global focus, is needed to improve direct country support for fragile states.

Strengthening global health leadership and cross-sectoral coordination

Strengthened leadership capability is critical to ensuring that the functions of the global health system operate as they should and that the priority areas for change outlined above are tackled. Leadership and stewardship together form the 'glue' necessary to hold together an effective global system and to lead a strong global response to health emergencies and other negative cross-border externalities such as the spread of antimicrobial resistance. Strong leadership is also necessary to facilitate R&D for neglected diseases, to address issues such as the transition to middle-income status, and to overcome the political and bureaucratic resistance to more integrated country support approaches. Without effective leadership, the global health system will find it difficult to deliver effectively on its other critical functions. Areas for action considered in the stakeholder consultations include:

1. **Consolidate to create UN-HEALTH.** One proposal recommended bringing together, based on a common results framework, all UN agencies with health-related mandates. Just as UNAIDS created a more coherent response for HIV, a consolidated UN-HEALTH could achieve a similar but more wide-reaching effect by streamlining all UN agencies working on global health issues. Rather than taking the traditional medical and healthcare perspective, UN-HEALTH would be based on a different paradigm, working across sectors to consider health as a core dimension of development. Based on technical excellence, UN-HEALTH would provide global guidance in terms of norms, standards and policies, and provide information on health trends and outcomes. While UN-HEALTH would convene multiple actors in a multi-stakeholder governing body, it would also require a governance structure capable of managing the negotiation of new global intergovernmental agreements.

2. **Establish a global forum for multi-stakeholder engagement.** A less radical proposed change was to maintain existing institutions but strengthen their involvement with non-state actors, with the goal of improving strategic coordination and better reflecting the widely distributed leadership already evident. One suggestion involved creating a UN Health Commission that would report to the UN Secretary-General and would enhance coordination between major global health agencies within the UN and other key actors, including CSOs and the private sector. The commission would represent a platform for multi-sectoral convening, and would aim to improve the way the health sector engages with other sectors. It would also play a key role in ensuring accountability, measuring agencies' contributions against jointly agreed health and broader multi-sectoral objectives.

Looking ahead

The findings of this paper are intended to contribute to an emerging dialogue on how the global health system must develop to deliver the SDGs by equipping leaders with the evidence to support much-needed changes. It is just a starting point, however, and the potential options for reform of the global health architecture analysed here need to be developed beyond this project. This will require not only additional technical work, but also high-level political engagement by those who can help drive change. The period immediately following the adoption of the SDGs offers a unique opportunity to build momentum for such a change dialogue, together with an opportunity to exercise collective leadership to deliver the agreed goals.

Introduction

Significant changes in the landscape of global health over the last two decades have markedly shaped its agenda, targets and institutional structures. While much more work remains in order to improve health outcomes, these developments have nevertheless brought considerable achievements. As the international community finalizes the next set of global health and development goals, discussions about what will shape the new priorities in global health have created a prime opportunity to recalibrate and consider how the global health system can sustain and build on the advances made so far.

In the context of new and emerging health challenges and opportunities, it has not been clear whether the existing global health system is prepared to handle the changes that will face it in the coming decades. To consider such issues in the context of a changing health landscape, Chatham House launched the Rethinking the Global Health Architecture project in September 2014.[i] The prime project objective has been to catalyse a high-quality dialogue among key stakeholders and decision-makers on the future of the global health system, based on sound research and analysis. The project has been guided and overseen by a steering committee, and has been based on work conducted by SEEK Development, the Global Strategy Lab at the University of Ottawa, and the Norwegian Institute of Public Health.[ii] This paper, as the final report of the project, intends to answer a number of key questions that were addressed as part of the work:

- What emerging trends, opportunities, and challenges will shape the Sustainable Development Goal (SDG) era?

- What are the implications of these trends and changes for the global health system?

- To what extent will the global health system be fit for purpose in light of these changes?

- What is proposed to improve the global health system in the SDG era?

- What are priority areas for change?

In exploring avenues for strengthening the global health system, this paper sets the groundwork for a possible follow-on process – more political and at a higher level – to focus on concrete options for improving the efficiency and effectiveness of the architecture.

Making the case for change: a lifetime opportunity for global health

The forthcoming adoption of the SDGs in 2015[iii] presents a prime window of opportunity to develop an ambitious agenda for global health system reform grounded in inter-sectoral cooperation, resilience, human rights and country ownership. The SDGs place people at the centre, and one set of targets (contained in SDG 3) relate explicitly to health: to ensure healthy lives and promote wellbeing for all at all ages (see Box 1).

In contrast to the Millennium Development Goals (MDGs), which were criticized for being an assembly of sector-specific and narrowly focused targets, the SDGs should address the multi-sectoral determinants of health.[11] In emphasizing the need for inter-sectoral cooperation and recognizing the broad determinants of health, linkages are made to health outcomes related to other SDGs, such as environment and health, education and health, and gender and health. The SDGs also represent a positive step towards recognizing that rights and equity are fundamental to the success of healthy and sustainable societies in the post-2015 development framework. The SDGs therefore provide an important opportunity to integrate health within the broader development agenda, to address unfinished health-related MDGs, and to tackle the emerging challenges that will affect global health in the future.

While the post-2015 deliberations have so far focused on *what* the world aims to achieve in the next 15 years, the adoption of the SDGs will trigger debate on *how* these targets can best be attained and how they can help to create the political space for health and other sectors to work together more effectively to promote individual and collective wellbeing.

Box 1: The Sustainable Development Goals

The SDGs will be the result of the largest ever consultation process undertaken by the UN. Comprising (in their draft stage) 17 interlinked goals and 169 targets, they reflect the key point that development at the national level requires multi-sectoral interventions.

The draft SDG on health (SDG 3) demonstrates an evolving understanding that moves away from addressing mortality alone, also to encompass reducing morbidity and promoting wellbeing and health throughout the life course.[iv] Compared with the health MDGs, which relate to specific issue areas, the proposed health SDG to '*encourage healthy lives and promote wellbeing for all at all ages*' articulates a more integrated, systemic approach to global health as the broader framework for achieving specific disease targets. While maintaining a focus on communicable disease prevention and treatment, the targets also cover non-communicable diseases (NCDs), injuries and environment-related diseases.

The SDGs also recognize that further progress in improving health and wellbeing will require the reduction of inequities, and political and social mobilization to overcome human rights violations, gender inequalities and discrimination of all forms. The SDGs focus on the individual, and prioritize the individual's rights, needs and ownership, in an effort to enhance people's livelihoods and strengthen the resilience of the communities around them. A people-centred paradigm is recognized as integral to ensuring that progress in countries is sustainable, equitable and focused on helping the poorest and those most in need.

The planned SDGs thus provide an opportunity to shape a new vision of the global health system – a vision that places multi-sectoral engagement and respect for human rights and equity at its core.

The 2014 Ebola outbreak has also brought attention to the role of the global health architecture in managing negative externalities. The outbreak has been used as a starting point for assessing the current state of the architecture and for crafting new proposals. For many, the Ebola crisis has been a turning point not just regarding reform of the WHO, but also for assessing leadership and coordination failures in the entire global health system.[12] The epidemic demonstrated that in fragile states with weak healthcare systems, preventable health hazards can escalate, given densely populated cities, frequent human and animal interchange, and rapid air travel. The international resources and attention generated by the outbreak provide an opportunity for global health

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iv The SDGs are currently under review and still subject to change. It is envisaged that they will be adopted by UN member states at a UN Summit to Adopt the Post-2015 Development Agenda to be held in September 2015.

leaders to help strengthen national public health capacities and to address shortcomings in the implementation of global frameworks.[13] The Ebola crisis also underscores the importance of achieving equitable progress among countries – a weak system in one country can threaten health and the stability of health systems in countries around it. Already, various new initiatives have emerged to address the management of externalities, including the UN Secretary-General's High-Level Panel on the Global Response to Health Crises[14] and the recently approved $100 million health emergency fund at the WHO, as well as plans for a scaled-up global health emergency workforce.[15] These initiatives offer the political space to make targeted reforms in the global health system, and it is intended that this paper will help inform these processes as they develop and are put into action.

> The adoption of the SDGs, the lessons learned from the Ebola outbreak, and the forthcoming leadership changes in global institutions offer a rare alignment of political opportunities that presents a great chance to address many deficiencies of the global health system.

Forthcoming leadership changes in three key global governance institutions will have a major impact on the shape and direction of the global health system. The election of a new UN Secretary-General in 2016 will be important, as will be the selection of a new Director-General of the WHO and of the World Bank President in 2017. The growing prominence of cross-border issues – such as climate change and infectious diseases such as Ebola – will require an even greater leadership role to foster coordination and policy coherence between disparate sectors and to develop a concerted global effort to promote healthy lives and wellbeing for all people at all ages.

The opportunities available at this crossroads in global health could save the lives of millions, and are too valuable to be ignored by world leaders. The adoption of the SDGs, the lessons learned from the Ebola outbreak, and the forthcoming leadership changes in global institutions offer a rare alignment of political opportunities that presents a great chance to address many deficiencies of the global health system. Failure to reform the system would put the achievement of the SDGs at serious risk. The political space is available, and now is the time to change the global health system for the better.

Building healthy systems for healthy people

The attainment of SDG 3 should be the ultimate purpose of the global health system in the post-2015 era. Achieving healthy lives for all involves tackling the underlying determinants of ill health, and building resilient and equitable systems that enable all people to make healthy choices and to live healthy lives. The high-level participants at the final roundtable at Chatham House described this collective challenge as building *'healthy, resilient systems for healthy people'*.

This understanding takes into account that good health is determined not only by preventing and treating the diseases themselves, but also by addressing other factors such as nutrition, education, human rights, gender equality, water and sanitation, and environmental degradation. Taking malnutrition as an example, children with severe malnutrition have a higher mortality risk, and malnutrition accounts for 45 per cent of total annual child mortality.[16] While management of acute malnutrition within the health sector is important, food security realized by sustainable, resilient agriculture is equally relevant and is synergistic. Socio-economic factors are also of significance, as many, including poverty and inequality, have a direct impact on health outcomes.

Education is a particularly critical determinant of health, and is a means of enhancing the health and wellbeing of individuals. For example, it plays a crucial role in reducing HIV transmission;[17] in terms of early childhood development, it has a lifelong impact on the mental and physical health of individuals;[18] it reduces the need for healthcare and the associated costs of dependence, lost earnings and human suffering; and it promotes healthy lifestyles and supports human development and relationships, and personal, family and community wellbeing.[19] Moreover, fighting and eradicating neglected tropical diseases, for example, will require many of the primary risk factors that lead to their incidence to be addressed, including a focus on health education and stronger health systems, as well as water, sanitation, hygiene and vector control.

Building healthy, resilient and sustainable systems for healthy people also recognizes the importance of the individual as a leader, driver and principal stakeholder for improving health for all people at all ages. An approach that places people at the centre is advantageous because improving the health of individuals leads to healthier populations, stronger economies and more resilient societies. Healthy individuals are more productive and better able to contribute to economies, and are active contributors to their families and communities. On the other hand, ill health can have draining effects on economic growth. The projected cumulative global loss of economic output arising from NCDs over the period 2011–30 has been put at some $47 trillion, with $21.3 trillion of that loss incurred in low-income countries (LICs) and middle-income countries (MICs).[20]

Empowering people is essential, because the participation of individuals and communities is integral to achieving global health goals. The global health system needs to be more adaptive if it is to listen and respond more effectively to countries' needs and priorities.[21, 22] The participation of communities and civil society is important not only for developing health policies, but also for implementing those policies and ensuring the accountability of the stakeholders involved. Supporting countries to build healthy systems for healthy people thus emphasizes the importance of country ownership and the participation of both political leaders and the communities that they represent.

About this paper: approach and analytical framework

This paper brings together the findings from background papers and stakeholder input from roundtables and focus groups, together with key informant interviews. The discussion builds first on analytical work that was published in three background papers developed for the project:

- **Mapping of global health actors.** A mapping of global health actors against the identified critical system functions of the architecture, and an analysis of how the current functions are covered by existing actors.[23]

- **Review of emerging trends and reform proposals.** A review of the literature on global health system developments over the last two decades; changes anticipated in the future; and proposals for reforming the global health architecture from the past 10 years. An extensive review of the published and grey literature was undertaken in order to gain a comprehensive understanding of existing proposals to reform the global health system. This review was further informed by interviews with key global health policy-makers and experts.[24]

- **Analysis of global environmental governance.** An overview of how the environment (including climate change) is globally governed, and lessons learned from that regime about effective global governance.[25]

Second, a participatory approach was adopted that engaged stakeholders from a wide variety of backgrounds – including government (with an emphasis on LICs and MICs), academia, think-tanks, civil society, the private sector, foundations and global health agencies – and solicited their views through:

- **A focus-group discussion.** A focus-group discussion was held in Geneva in December 2014 to provide feedback on early versions of the background papers. It engaged the WHO, UNAIDS, the Global Fund to Fight AIDS, Tuberculosis and Malaria (the Global Fund), the World Bank and other key health organizations, and contributed to a holistic understanding of the key functions and gaps among the major global health actors.

- **Three policy roundtables.** Two roundtables were convened in London in January 2015 to foster dialogue with global health practitioners and experts. The 27 participants at the two roundtables discussed both the challenges facing the architecture going forward and options for improvement. A final roundtable – with participation by senior policy-makers, including high-level representation of global health organizations – took place in London in April 2015. Ministers of health, heads and deputy heads of global health organizations, and senior managers from the private sector and civil society organizations (CSOs) reflected on previously proposed reform proposals and offered their suggestions on options for improving the architecture for the future.

- **Key informant interviews.** In-depth, one-to-one interviews with senior stakeholders from leading global health agencies, civil society, the private sector and government solicited detailed views on the global health system from a range of perspectives.

The priority areas for improving the global health architecture presented here are heavily shaped by the deliberations with experts at the focus-group meeting, the policy roundtables and the key informant interviews. Experts convened for the events and interviews reflected on reform proposals put forward previously, and offered their suggestions on options for improving the architecture in the future.

To assess how well the global health system has performed its key roles and evaluate how reform proposals address the major functions of the architecture, a framework articulated by the recent Lancet Commission on Investing in Health (CIH) was adopted (see Table 1). The framework identified four essential functions of the global health system:

- **Managing cross-border externalities** is essential to responding to health threats that transcend national borders, including counterfeit drugs or infectious diseases such as Ebola and polio.

- **Provision of GPGs** is also a core function of the global health system. There is a range of global public goods, but the analysis in this context focuses on four major global public goods: norm- and standard-setting, research and development (R&D), market-shaping, and knowledge-generation and -sharing.

- **Providing direct country support** involves financial and technical assistance to countries.

- **Exercising leadership and stewardship** is crucial both for priority setting and for providing guidance for fulfilling the other functions of the global health system. It is also important in relation to facilitating negotiation and building consensus on health agendas and priorities.[26, 27]

This framework was selected based on its widespread use, which helps to situate the analysis within current debates on the global health architecture. Much of the analysis in this paper is structured

around these four functions. It evaluates how the system has delivered on them in the past, how they should evolve in the context of changing global health needs and priorities, and how the architecture can continue to deliver into the future.

Table 1: Four functions of the global health system

Function	Examples
Managing cross-border externalities	Responding to global threats (e.g. pandemic influenza, antimicrobial resistance, counterfeit drugs); surveillance and information sharing
Provision of GPGs	R&D for new health tools; knowledge-generation and -sharing; sharing of intellectual property; norm- and standard-setting
Direct country support	Technical cooperation at national level; development assistance (financial) for health
Leadership and stewardship	Convening for negotiation and consensus building on policy, global health/ cross-sectoral advocacy

The first section begins with an assessment of changes in the global health system since the introduction of the MDGs in 2000. In the second section, the key emerging epidemiologic, demographic, economic and political trends that will shape the post-2015 era are discussed. The third section considers the implications of these emerging trends for the global health system, and examines how the functions may need to change in light of these trends. A short synthesis of proposals to reform the global health architecture follows in the fourth section, examining to what extent they fit the emerging needs of global health. The fifth section considers which reforms to the global health system should be taken forward. Finally, recommendations and suggestions for possible follow-up efforts are offered.

Where Are We Today? Key Changes in the Global Health System Since the Turn of the Millennium

The political, economic and cultural landscape of global health has changed significantly over the last two decades. The world has seen the emergence of new actors and institutions, innovative modalities and powerful technologies. CSOs and the private sector have become recognized as significant players on both the domestic and international stages, and the dynamics between national governments and international partners have evolved in favour of domestic ownership. Although much remains to be done, and new challenges are emerging, there have been very significant achievements in global health.

One major milestone was the adoption of the MDGs in 2000, as a result of which health emerged as a major topic on the global political agenda. In all, 189 UN member states signed the Millennium Declaration, which established eight MDGs to be achieved with a deadline of 2015. The MDGs' focus on specific, measurable targets has benefited the global health community by providing clear objectives. Three of the eight goals (MDGs 4–6) relate directly to health (see Table 2).[v] Since their institution, these MDGs have served as the bedrock of the global health agenda, markedly shaping the priorities and approaches taken by stakeholders.

Table 2: Health MDGs

Goal	Target
MDG 4: Reduce child mortality	4A: Reduce the under-five mortality rate by 2015 by two-thirds compared with the 1990 level
MDG 5: Improve maternal health	5A: Reduce the maternal mortality ratio by 2015 by three-quarters compared with the 1990 level 5B: Achieve by 2015 universal access to reproductive health
MDG 6: Combat HIV/AIDS, malaria and other diseases	6A: Halt by 2015 and have begun to reverse the spread of HIV/AIDS 6B: Achieve by 2010 universal access to treatment for HIV/AIDS 6C: Halt by 2015 and have begun to reverse the incidence of malaria and other major diseases

Source: UN Millennium Development Goals, http://www.un.org/millenniumgoals.

The global health architecture has undergone very significant changes since the adoption of the MDGs. Previously centred on the WHO, a number of international organizations – notably UN agencies such as UNICEF and UNFPA, as well as the World Bank – and major donors, the global health landscape has since expanded to include a much more diverse set of actors (see Figure 1). More than 100 global health initiatives have emerged in the sector since the turn of the millennium, with many explicitly established to accelerate progress towards the MDGs.[28] Many of these new global health initiatives have adopted innovative public-private partnership models, and they work across all four of the functions set out above. Many also exert significant influence on global health, with the Bill & Melinda Gates Foundation being a prominent example. The Gates Foundation has

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[v] Others, including MDG 1 on nutrition and MDG 7 on environmental sustainability (including drinking water and sanitation) are closely related to health.

contributed to a renewed dynamism in the sector, and, as the fourth largest source of development funding for health in 2000–11, has created a massive financial boost for programming.[29]

Figure 1: Actors in the global health system
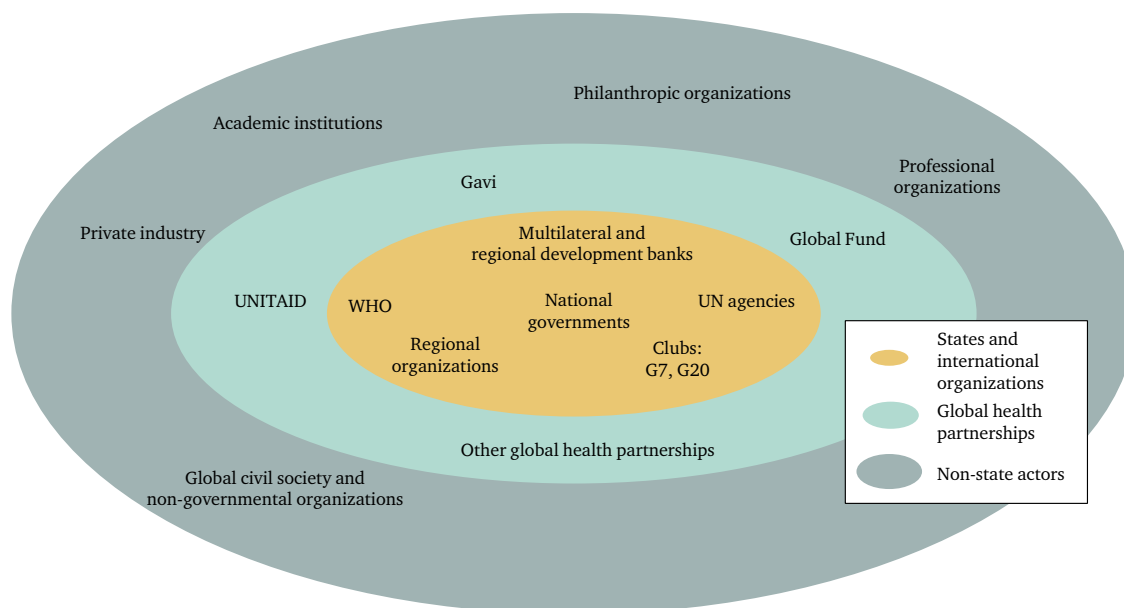
The period after 2000 also saw dramatic growth in global health financing.[vi] Development assistance for health (DAH) has nearly tripled since the turn of the millennium, from $10.9 billion in 2000 to $30.6 billion in 2011.[30] While preliminary estimates show that DAH subsequently reached an all-time high of $31.3 billion in 2013, its rate of growth has slowed in recent years. The largest growth in funding relates to MDG 6, and especially to HIV/AIDS, with increases for MDGs 4 and 5 being more modest.[vii]

A range of high-profile funding mechanisms, such as the Global Fund and the US President's Emergency Plan for AIDS Relief (PEPFAR), were explicitly founded to accelerate progress towards meeting the health MDGs. Others, such as Gavi, were launched just before the MDGs were adopted, but have referred to the MDGs as providing a key framework for their missions.[viii] UN initiatives such as the Health 4+ group (comprising the WHO, UNAIDS, UNFPA, UNICEF, UN Women and the World Bank) have attempted to coordinate support through streamlining funding. Innovative financing mechanisms, such as the UNITAID airline levy and the International Finance Facility for Immunisation (IFFIm), continue to raise substantial resources for health.[ix] A number of initiatives, among them the Roll Back Malaria Partnership (launched in 1998, i.e. before the adoption of the MDGs), have focused

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[vi] The national security concerns of donor countries has led to further increases in financing for health, with fears stoked by the quick spread of HIV/AIDS.

[vii] However, the launch of the UN Secretary-General's Global Strategy for Women's and Children's Health in 2010, and the commitments made in 2012 at the London Summit for Family Planning, reflect the increased high-level support that has been given to the RMNCH agenda in recent years.

[viii] Health partnerships account for a large share of funding channelled to global health. The share of DAH channelled through Gavi and the Global Fund increased from 0.03 per cent ($3.4 million) in 2000 to a projected 17.8 per cent ($5.6 billion) in 2013. Over the same period, the share of funding directed through traditional multilateral channels decreased.

[ix] Nevertheless, they remain a modest source of funding when compared with traditional donors, suggesting further potential for these mechanisms. See Atun R. Innovative financing for health: what is truly innovative? *The Lancet*. 2012; 380: 2044–49.

on the provision of technical support to countries. UNAIDS, founded in 1996, is a key provider of technical assistance and of global leadership and stewardship in tackling HIV/AIDS.

Progress towards the health MDGs

Since the adoption of the MDGs, there has been major progress in terms of health improvements around the world. Available evidence indicates that the global support for the MDGs and the focused attention on specific goals have yielded demonstrable results, and that the rise in DAH and the creation of new funding mechanisms have contributed to progress towards meeting the MDGs.[x] Scaled-up access to antiretroviral therapy has averted millions of deaths from AIDS, while maternal and child mortality fell, respectively, by 45 per cent and 49 per cent between 1990 and 2013 (see Figure 2 below). Both the global child mortality rate and the global maternal mortality ratio have declined faster since 2000 than in the previous decade.

Figure 2: Progress towards MDGs 4 and 5*
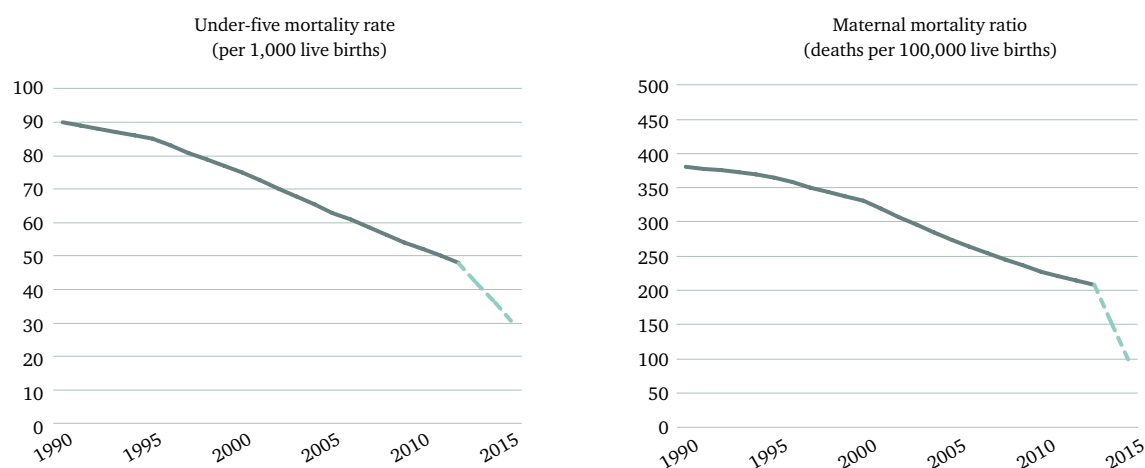
*Broken lines show the accelerated rate of decline that would be needed to meet MDGs 4 and 5A.[31, 32]

Despite this progress, the three health MDGs will not be met by the end of 2015. Achieving MDG 4 in 2015 would have required an annual decline in child mortality of 4.4 per cent, whereas the annual decline between 1990 and 2013 was 2.2 per cent.[xi] If present trends continue, 4.4 million children will die in 2030, at a rate of 32 per 1,000 live births.[33]

The maternal mortality ratio fell from 380 per 100,000 live births in 1990 to 210 per 100,000 live births in 2013,[34] a rate of decline that is too slow to enable MDG 5A to be reached. In 2013 an estimated 292,982 women died during and following pregnancy and childbirth. If the rate of decline remains in line with current levels, approximately 184,100 maternal deaths will occur worldwide in 2030, with 53 countries still having maternal mortality ratios of more than 100 per 100,000 live births.[35]

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[x] See Bendavid E, Homes CB, Bhattacharya J, Miller G. HIV Development Assistance and Adult Mortality in Africa. *JAMA*. 2012; 307(19): 2060–67.
[xi] Remarkably, the global annual rate of decline has increased from 1.2 per cent between 1990–95 to 4.0 per cent between 2005–13. See UN Inter-agency Group for Child Mortality Estimation. *Levels and trends in child mortality.* [Online] Geneva: United Nations Children's Fund; 2014. Available from: http://www.unicef.org/media/files/Levels_and_Trends_in_Child_Mortality_2014.pdf [Accessed 22 July 2015].

With regard to MDG 6, the number of newly infected HIV-positive people worldwide fell by 38 per cent over a decade, from 3.4 million in 2001 to 2.1 million in 2013.[36] Significant progress has also been made towards reaching universal access to HIV/AIDS treatment (MDG 6B). By 2012 some 10.6 million people had access to antiretroviral therapy for HIV/AIDS, compared with only about 300,000 in 2002. Nevertheless, almost 40 per cent of HIV-infected people in LICs and MICs remain unable to access this life-saving treatment.

> In 2013 49 per cent of the population at risk in Africa had access to an insecticide-treated mosquito net, compared with just 3 per cent in 2004. Nevertheless, more than 550,000 people worldwide continue to die from malaria annually.

Also related to MDG 6, malaria mortality decreased by 47 per cent between 2000 and 2013. In total, 4.3 million fewer deaths occurred between 2001 and 2013 than would have occurred if rates had remained unchanged (MDG 6B). There has also been substantial progress in scaling up malaria interventions. In 2013 49 per cent of the population at risk in Africa had access to an insecticide-treated mosquito net, compared with just 3 per cent in 2004. Nevertheless, more than 550,000 people worldwide continue to die from malaria annually.[37]

As a result of the progress achieved by LICs and MICs in tackling infectious as well as reproductive, maternal, newborn and child health (RMNCH) diseases, the global disease burden has increasingly shifted towards non-communicable diseases (NCDs). It is likely that the enormous progress in reducing infectious disease mortality will continue – especially given improved access to vaccines, drugs and financial resources – and that cancer, heart disease and other NCDs will become more dominant causes of death and disability worldwide. This 'epidemiologic transition', along with other changes affecting the global health architecture, is discussed in the next section.

Emerging Trends and Challenges for the Post-2015 Era

A number of global health changes were identified that will likely require focused action in the post-2015 era. These emerging challenges, and how they may affect the global health agenda, were also discussed during the interviews with key informants. They can be grouped into five broad categories, as outlined in Table 3.

Table 3: Key changes and emerging trends in global health

Key changes	Description
Health transition: Epidemiologic and demographic changes	• Rise of NCDs • Ageing populations • Injuries • Large youth population in developing countries
Outbreaks and global threats	• Concern over new pandemics and epidemics • Antimicrobial resistance
Environmental threats	• Effects of climate change on health • Environmental degradation
Economic developments	• Transition of LICs to MICs • Increased importance of domestic financing • Catastrophic health expenses
Political developments	• Rise of large MICs as regional and global powers

Health transition

One of the most fundamental shifts affecting global health is the rising burden of disease and mortality caused by NCDs. In part as a result of the recent achievements in combating communicable diseases, this epidemiologic transition has seen NCDs displace infectious diseases as the world's leading causes of both morbidity and mortality. Globally, four of the five leading causes of death in 2012, including the top three, were NCDs.[38] In every region excluding sub-Saharan Africa[xii] the three leading causes of death were NCDs. Worldwide, close to two-thirds of deaths are attributable to NCDs (an increase of 30 per cent between 1990 and 2010); 80 per cent of these deaths occur in LICs and MICs.[39] In LICs and lower-middle-income countries (lower-MICs) that are still battling infectious diseases, the rise in NCDs has created a 'double burden' of disease that in many cases overstretches already weak health systems. For many countries, the major health challenge will be to keep people healthy as they age, rather than merely ensuring their survival.

The WHO has identified four behavioural risk factors as key drivers behind the NCDs epidemic: tobacco use, lack of physical activity, harmful use of alcohol and unhealthy diet.[40] In addition, there are strong links between the rise of NCDs and increased urbanization. As worldwide urbanization trends continue, and tobacco use, high body mass, low physical activity and other risk factor trends rise, even higher rates of diabetes, cardiovascular disease, cancer and other major NCDs will likely be seen.[41, 42]

[xii] While NCDs are not yet the leading causes of death and disability in sub-Saharan Africa, its age-standardized rate of cardiovascular disease is nevertheless higher than that found in HICs (Jamison D, et al. 2013).

Rapid population ageing and growth have also driven the epidemiologic transition. From a population of 2.5 billion in 1950, subsequent declines in mortality saw the world population soar to 6.1 billion in 2000, and to an estimated 7.2 billion by 2013. The global population is projected to reach 8.1 billion by 2025 and 9.6 billion by 2050 (representing a 33 per cent increase over 2013).[43] Virtually all growth will be concentrated in low- and middle-income countries (LMICs). The ageing of the population represents a significant challenge for global health: the over-65 demographic is increasing at three times the rate of the overall population. Ageing is a key driver in the rise of NCDs: according to the Global Burden of Disease Study 2010, 39.2 per cent of the increase in NCDs seen between 1990 and 2010 can be attributed to populations ageing.[44,45] A rise in disability, as a result of population ageing and improved rates of survival from previously fatal events, has also contributed to the rise in NCDs.

The reduction in child mortality in LMICs has brought about a large increase in the youth population – notably adolescents – of many countries. Overall in LICs, some 28 per cent of the population are under 15 years of age, with almost half under 24.[46] Many live in countries with a double burden of disease (both infectious and non-communicable), suggesting that early preventive interventions are important to mitigating a future rise in NCDs. The rate of injuries has further increased, caused largely by road traffic accidents. Road traffic deaths are now the most frequent cause of death among young adults, with the highest death rate among poor populations in sub-Saharan Africa.[47, 48]

Outbreaks and global threats

Outbreaks in the 21st century of severe acute respiratory syndrome (SARS), H1N1 influenza, Middle East respiratory syndrome (MERS) and most recently Ebola have drawn attention to the ability of viruses to spread quickly across borders. Today's interconnected world makes it even less likely that outbreaks will remain entirely confined to particular geographic areas.

In addition to the threats posed by pandemics and epidemics,[xiii] the increase in the number of antimicrobial-resistant infections introduces major challenges to the sustainability of many essential health interventions. Discoveries of drug-resistant TB and malaria raise serious concern, particularly in LMICs, while drug-resistant infections acquired in hospitals strain health systems even in wealthy countries. With very few new products under development – only two new antibiotics were approved in the United States between 2009 and 2013 – many experts fear that in the absence of significant changes in the use of antibiotics, resistance to more of the existing drugs will develop, drastically reshaping the calculus of health interventions from treating previously minor bacterial infections to performing surgery.[49]

Climate change and environmental degradation

Since significant action on environmental regulation appears unlikely, it is envisaged that climate change will further increase in importance and severity through the 21st century. As temperatures continue to rise, so do the chances of severe weather events that can have strong and disruptive

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xiii While recent flu outbreaks have been moderate, experts fear that the global health architecture is unprepared to handle a major outbreak of a severe flu pandemic. Among other factors, insufficient resources – the 2013 WHO pandemic budget was less than $8 million – could hamper an effective response.

effects on the health and wellbeing of populations around the world.[xiv] A sustained rise in average temperatures will contribute to increased death and injury from extreme heat and worsening air pollution, particularly in urban areas.

Urban air pollution is already one of the main risk factors for respiratory and cardiovascular diseases. Compounded by accelerating rates of urbanization and population growth, rising temperatures will therefore further drive increases in NCDs. Estimates also suggest that by 2020, crop yields in some sub-Saharan African countries will be reduced by 50 per cent, which will exacerbate existing problems of food insecurity and undernutrition. Environmental factors contribute to one-quarter of the burden of disease globally. There is also increasing evidence that environmental degradation, such as deforestation, triggers disease outbreaks: scientists believe that as wildlife is forced out of its habitats through deforestation, the likelihood of human contact with viruses such as the Ebola virus increases.[50, 51]

None the less, the relationship between climate change and health can also work in the other direction. Many adaptation strategies have positive co-benefits for health: reducing reliance on cars in favour of walking and cycling, for example, would reduce greenhouse gases while positively affecting the health of individuals who choose to make such a lifestyle change.

Economic changes

One of the most transformative changes currently under way is the rapid and sustained economic growth that has vaulted many LICs to MIC status. Accompanying this economic growth has been a shift in the majority of the world's poor from LICs to MICs. The latter now account for more than three-quarters of the world's poor, whereas in 1990 some 90 per cent of the world's poor lived in LICs.[52] However, the transitioning out of financial assistance is not necessarily accompanied by concurrent health improvements. Rather, this has meant that the locus of the global burden of disease has shifted, with, for example, 70 per cent of the global burden of disease, including 63 per cent of the burden of HIV/AIDS and 73 per cent of the burden of TB, now located in MICs.

> Annually, an estimated 150 million people globally experience financial catastrophe as a result of the cost of care, while many others forgo necessary treatment because of their inability to pay.

Pockets of high burden among vulnerable or marginalized populations in MICs will continue to need attention regardless of the country's income status, but the transition from LIC to lower-MIC status can have significant implications for the resources available within affected countries. Bilateral donors have become increasingly reluctant to support MICs, and key multilateral agencies and global health partnerships traditionally use income status as a key criterion for determining what kind of assistance to offer, and under what conditions it is provided. Gavi has latterly revised related policies (on eligibility, co-financing and graduation), and the Global Fund revised its eligibility and counterpart policy in 2013.

Recent projections indicate significant continued economic growth in LICs and lower-MICs, suggesting that many countries should be able to mobilize significant domestic resources for health

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[xiv] WHO has identified five broad social determinants affected by climate change that will serve as pathways to impact health outcomes: air, water, food, shelter and freedom from disease.

in the coming years.[53] Ensuring that economic growth translates into increased domestic spending on health is critical, given that the rise in donor funding for health has slowed and that new issues, such as NCDs and universal health coverage (UHC), further heighten the need for domestic health funding. Domestic spending on health has never been more important.

Insufficient public financing for health has led private individuals to absorb much of the rise in healthcare costs through out-of-pocket payments. Annually, an estimated 150 million people globally experience financial catastrophe as a result of the cost of care, while many others forgo necessary treatment because of their inability to pay.[54, xv] The increase in NCDs, disability and other age-associated health challenges is likely to add to cost of care. Without adequate investments in insurance and other social protection mechanisms, much of this increase will likely fall on vulnerable individuals and households.[xvi]

Political developments

The rise of large, powerful MICs introduces the potential for important shifts in the donor landscape. Brazil, China and India, for example are among countries that were formerly aid recipients and have recently also become donors (while still receiving aid).[xvii] These countries also play key roles in respect of R&D and the production of vaccines and drugs.

How exactly Brazil, China, India and other 'regional powers' will come to engage with the international aid system remains to be seen. Already, some signs point to a desire to participate both within and outside existing structures. The recent conclusion of an agreement establishing the Asian Infrastructure Investment Bank, a new $50 billion international financial institution backed by both China and India, suggests that some countries may eschew existing institutions in favour of new pathways to exert influence.[55] In early 2015, in the wake of the Ebola crisis, African Union leaders, in collaboration with the US Centers for Disease Control and Prevention (CDC), agreed to develop the African Centres for Disease Control and Prevention (African CDC), with the aim of strengthening regional leadership on health.[56]

[xv] See also: Fan V, Glassman A. Going local. *Finance and Development*. 2014; 51(4): 12–15.

[xvi] Fan and Savedoff (2014) found that as domestic financing for health increased, out-of-pocket spending has fallen in the last 15 years among many LICs. However, they caution that commensurate reductions in out-of-pocket spending will only be observed when domestic government spending for health increases. Fan V, & Savedoff W. The health financing transition: A conceptual framework and empirical evidence. *Social Science & Medicine*. 2014; 105:112–21.

[xvii] For example, India has argued that its human and technological resources are better suited to providing support to developing countries because of its experience as an emerging economy.

How Fit for the Future is the Current Global Health Architecture, in Light of Emerging Trends and Challenges?

In this section, the performance of the functions of the global health system over the past decade is analysed, and the current global health architecture's fitness for the future is assessed in light of emerging trends. This section also explores which functional and institutional weaknesses and gaps are likely to become more pronounced, and what opportunities are likely to emerge.

Management of cross-border externalities

Major infectious disease outbreaks at the beginning of the 21st century, such as SARS in 2003, led to the strengthening of the International Health Regulations (IHR) in 2005, the development of the WHO's Pandemic Influenza Preparedness and Response guidance document in 2009, and to some extent a more robust response to global outbreaks of disease, as with the 2009 H1N1 influenza pandemic. A review of how the IHR operated during the pandemic suggests that the global health system was better prepared than before, although still by no means equipped to deal with a severe pandemic.[57] The global health system is still limited in its ability to ensure compliance with international laws and regulations. Organizational issues and capacity constraints among leading international agencies have hampered effective responses to major disease outbreaks. The WHO struggles to serve its dual role as a technical agency and political convener. Ambiguous lines of authority – between its headquarters and regional offices, as well as between its political and technical departments – weaken both its efficiency and authority.[58]

> In the years leading up to the 2014 Ebola outbreak in West Africa, the WHO's budget for outbreak and crisis response was reduced from $469 million for 2012–13 to $241 million for 2014–15.

Adding to these structural challenges, the WHO's regular budget has declined steadily in real terms since 1994. The majority of the WHO's budget is earmarked funding,[xviii] while funding for core work in emergency and epidemic and pandemic response has been significantly reduced.[xix] In the years leading up to the 2014 Ebola outbreak in West Africa, the WHO's budget for outbreak and crisis response was reduced from $469 million for 2012–13 to $241 million for 2014–15. The epidemic and pandemic response department was disbanded, with its former responsibilities split among other departments.[59] Such a drastic cut in financing has unequivocally weakened the WHO's ability to deliver on this function.

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xviii Earmarked funding refers to funding that is 'given under the condition that it can only be used for a specific purpose'. Reference: OECD. Type of Grants – OECD. Accessed from www.oecd.org/ctp/federalism/type%20of%20grants.docx.
xix Funding for the WHO's 2014–15 programme budget breaks down to 23 per cent from assessed contributions and 77 per cent from voluntary contributions, of which the latter is primarily earmarked funding. See World Health Organization. *Proposed Programme Budget 2014–2015*. Geneva: World Health Organization. Sixty-sixth World Health Assembly Document number: A66/7; 2013.

The 2014 Ebola outbreak exposed the weaknesses not just of the WHO,[60] but also of the broader global health system. The slow reaction demonstrated a lack of surge capacity for health crises, despite a clear need for improved responses to threats. The outbreak also highlighted the inability of weak health systems to cope with such a rapid increase in caseload. A shortage of trained health workers and equipment, and too few supplies, coupled with poor supply chains and insufficient capacity for public health surveillance and outbreak control, allowed a risk that has been manageable in stronger systems to spiral out of control. Weak health systems increase the likelihood that future disease outbreaks, such as a potential severe flu pandemic,[xx] will spread globally, which also points to the rising importance of health systems strengthening (HSS).

In an ever more globalized world, the persistent threat of new pandemics and major disease outbreaks, compounded by inadequate responses to challenges from antibiotic resistance, indicates that effective management of externalities will become an increasingly important task for the global health architecture to fulfil. Better coordination between major actors, and greater capacity for outbreak detection and response, will be required. The Ebola crisis has, however, created positive momentum for change. In response to the outbreak, the UN created its first emergency health mission, the UN Mission for Ebola Emergency Response (UNMEER). Furthermore, the recent approval of a $100 million emergency fund at the WHO shows that world leaders are starting to recognize the weaknesses of the existing system.[61] In addition, research funders such as the US National Institutes of Health, the Research Council of Norway and the EU's Innovative Medicines Initiative provided financing for special trials of potential Ebola treatments and vaccines that were already in the development pipeline. As a recent review of donor funding for health highlights, these increases in funding are critical for a global function that remains significantly underfunded: in 2013 just 4 per cent of donor funding for health was allocated to managing cross-border externalities.[62]

In summary, the system requires more capacity for outbreak detection, as well as a robust global mechanism for outbreak response. Managing externalities also depends on the effectiveness of the global health architecture to deliver on its other functions, such as scaled-up investments in R&D for neglected diseases and improved funding for HSS. In order for the global health architecture to be better prepared for outbreaks, and to improve detection and response, concerted action is required by a range of different actors who bring to bear their relative areas of expertise. A similar approach is needed for other global health threats, including those associated with counterfeit drugs and antimicrobial resistance.

Provision of GPGs

The following analysis focuses on four GPGs: norm- and standard-setting, R&D, market-shaping, and knowledge-generation and -sharing.

Norm- and standard-setting

The WHO plays a leading role in developing, monitoring and enforcing international norms and standards.[xxi] Its credibility in the area of setting norms and standards rests on its governance mechanism,

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on its near-universal representation, and on its ability to bring together experts in committees to help determine best practices.[63] A number of important initiatives have been adopted in recent years, such as the Framework Convention on Tobacco Control (FCTC) in 2005. However, there is criticism of the politically driven process of the WHA, of the challenges associated with implementing global agreements, and of what is perceived to be insufficient inclusion of non-state actors in the decision-making process.[64] Since its establishment in 1948, the WHO has adopted only two legally binding instruments – the IHR and the FCTC. Protracted, difficult processes to develop global norms and standards often have a significant cost in terms of political capital, yet lack effective mechanisms for enforcement.

Norm- and standard-setting will remain important; and while it is widely considered that the WHO will continue to play a critical role in consensus-building, and in the development and implementation of international agreements, some voices are now also demanding more effective processes through new or improved mechanisms, such as an expanded role for non-state actors.[xxii] The need for norm- and standard-setting will grow ever more important as the world becomes even more interconnected through globalization, and the health and wellbeing of people in one country come to be increasingly dependent on the actions and policies of people and governments elsewhere.

R&D

Access to medicines – through the development of innovative arrangements for R&D and purchasing – has improved over the past decades. Various product development partnerships, such as the Drugs for Neglected Diseases initiative, emerged to develop drugs for poverty-related infectious diseases. Other innovative methods for R&D financing – such as Advanced Market Commitments for vaccines – and fresh approaches to improving access to new products – for example patent-pooling – were also established. However, there remains major concern over insufficient scientific innovation and R&D funding. When it comes to developing drugs, vaccines and diagnostic tests, the world still largely ignores the infectious diseases that mostly kill the world's poor. Although global R&D spending has more than quintupled since 1990, reaching $248 billion in 2009, only 1–2 per cent of total R&D funding is channelled into research for these diseases. The CEWG on R&D has called for a doubling of current R&D expenditures in this area, to $6 billion, from the $3 billion currently spent.[65] As an additional barrier, very few actors are involved in the sharing of intellectual property. Yet another challenge is the complexity of global deal-sourcing and technical vetting, as well as high transaction costs, leaving the field of investments on health innovations fragmented and unfavourable in terms of taking promising products from proof of concept to uptake and delivery.

Significant action will thus be needed to facilitate R&D for neglected and poverty-related diseases and to improve country access to new health technologies, as reflected in the draft SDGs (specifically, target 3B). The Lancet CIH recently identified stronger investments in R&D for new health tools as one of the most effective ways to help achieve future global health targets.[66] This emphasizes the need for a major boost in R&D financing, and for the development of innovative institutional arrangements to finance R&D and other GPGs. Financing for health R&D is also fragmented, with participants making investments independent of each other and without the information, funding or coordination needed to bring an innovation to scale.[67] This results in inefficient use of resources and suboptimal decisions.

[xxii] See for example independent Expert Review Group on Information and Accountability for Women's and Children's Health. *Every Woman, Every Child: A Post-2015 Vision*. iERG. Report number: 3; 2014.

As the capacity of countries to conduct R&D domestically and produce medical products for their local market increases, the importance of building local research capacity for context-sensitive research (including health systems research) and supporting international research networks will increase. Emerging economies in particular are likely to expand their health R&D budgets greatly, creating many opportunities for maximal health impact.

Market-shaping

Market-shaping (e.g. through pooled procurement or long-term purchase commitments to achieve reduced prices for health products, increase market competition and accelerate product development) is another key activity in the area of GPGs. While organizations such as Gavi have been widely recognized as pivotal in driving down the prices of new and existing vaccines in LICs and lower-MICs, it is acknowledged that more can be done to achieve better prices and access for quality medicines.[68]

In order to achieve universal access for existing and new health technologies, stronger market-shaping efforts will be needed. Innovations in health, such as new and improved vaccines and drugs, hold great promise for the prevention and management of disease. Advances in mobile and digital technology have drastically reduced the cost and time required to process data, opening up new frontiers for delivering better, cheaper and more personalized care. The highly effective use of mobile phones to provide quality health services where no such services previously existed can be already be seen. As this technology improves, and use of tools such as the internet expands, opportunities for shaping markets of health products are plentiful.

Knowledge-generation and -sharing

The generation and distribution of knowledge has received increasing levels of attention in recent years, with a range of initiatives focusing on this sub-function. Global initiatives such as the Partnership for Maternal Newborn and Child Health (PMNCH) and Countdown to 2015 have been devised to create and disseminate knowledge on maternal and child health. The establishment of the Institute for Health Metrics and Evaluation (IHME) has also created a new resource for health data and statistics beyond the WHO.[69] Despite these developments, more attention needs to be given to such public knowledge goods by building the evidence base on innovations that will contribute to accelerating progress in global health.

While knowledge will continue to be one of the most important drivers of improved health, its production, reproduction, translation and implementation must be supported to ensure that everyone can benefit.[70] The global health architecture can also help to facilitate stronger knowledge-exchange between LMICs. Many MICs, in particular, have a track record of adopting cost-effective approaches to domestic health issues. Recent 'South–South' collaboration between MICs and LICs has seen some of this accrued knowledge shared between countries (e.g. shared learning on tobacco and alcohol taxation policies).[71] As demand for sharing good practices continues to increase, the global architecture should adjust to ensure that it can better foster global learning on effective control strategies.

In summary, significant changes in financing and coordination in the provision of GPGs will be necessary if this function is to be fit for purpose. There is room for improvement the areas of in norm- and standard-setting, knowledge-generation and -sharing, and market-shaping. However, despite some improvements in recent years, more significant action will be needed to facilitate greater R&D funding for neglected and poverty-related diseases and to enhance country access to health technologies.

Direct country support

The rise in DAH and the development of new funding mechanisms, such as the Global Fund and Gavi, have contributed to significant progress towards the MDGs. The new initiatives have also introduced new funding approaches, including performance-based financing and processes that allow for a greater participation of countries and non-state actors. Innovative financing mechanisms, such as IFFIm, have mobilized substantial resources for health, but overall levels of international funding remain inadequate, and weak predictability in funding flows makes long-term planning difficult.[xxiii] The 'verticalization', or fragmentation, of DAH has been noted as a key challenge in the wake of this dynamism.[xxiv] Addressing this is crucial from a country perspective: the demands of managing multiple funding and reporting requirements diverts time, talent and resources away from focusing on health interventions per se, and can skew domestic health priorities in the direction of donor priorities. The area of reproductive, maternal and child health has been particularly fragmented and underfunded.[72] The World Bank-hosted Global Financing Facility for Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH), in support of the UN Secretary-General's renewed Global Strategy for Women's, Children's and Adolescents' Health, could offer a way both to scale up financing from international and domestic resources, and to help consolidate the fragmented funding and technical support in this area.

Direct country support as a function of the global health system will remain highly relevant, but substantial shifts will be required to meet the demands of the post-2015 world and to overcome fragmentation of direct country support among financiers and providers of technical support. Strengthening countries' health systems will be another key task in the coming years.[73] Health systems will have to adapt to emerging demographic, environmental and health challenges, and will also have to fulfil the higher expectations outlined in the SDGs (e.g. concerning UHC).

However, as countries become wealthier and disease patterns change, the costs for health systems will rise. As external financial support will only be able to cover a smaller portion of this cost over time, increased domestic health spending will be critical. The Lancet CIH, using IMF forecasts, projected substantial economic growth into the next decade.[xxv] On this basis, many countries should be able to transition out of donor funding for health and be increasingly able to finance priority health goals from domestic sources. One of the most important issues on the table in discussions about the future of health aid is how the system can best support countries transitioning out of financial assistance. The role of technical support and political advocacy will become increasingly important in the successful expansion of their fiscal space and revenues for health. Providing this support requires increased global capacity and the ability to work both with ministries of health and with treasuries within countries. It will also be crucial to match existing financial instruments more appropriately with country transition paths. A more strategic use of loans will be crucial if poor and marginalized populations in MICs are to be reached.

However, even as LICs and lower-MICs assume increasing responsibility for domestic health expenditures, the poorest countries will continue to rely on international support for health service delivery. It is estimated that there will still be 22 LICs in 2035, compared with 36 in 2012. Many

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xxiii Examples include the financing gap outlined in the Global Strategy for Women's and Children's Health, which was estimated at $88 billion from 2011 to 2015. On volatility of funding, see Hsu, J, et al. Countdown to 2015: changes in official development assistance to maternal, newborn and child health in 2009–10 and assessment of progress since 2003. *The Lancet*. 2012; 380: 1157–68; Lane, C, and Glassman, A. Bigger and better? Scaling up and innovation in health aid. *Health Affairs*. 2007; 26(4): 935–48.
xxiv The International Health Partnership (IHP+) aims to mobilize organizations and countries to support a single, country-led national health strategy.
xxv The CIH estimates that the price of HSS would be $30 billion per year for the next two decades. The cost represents less than 1 per cent of the additional GDP that will be available to LICs and LMICs due to increased economic growth over the next 20 years (Jamison et al. 2013).

of these states are fragile and affected by conflict. Of the seven countries that have not met any of the MDGs, six are fragile states.[xxvi, 74, 75] It is notable that fragile countries only receive about half as much DAH as stable countries with comparable income levels.[76] Financiers should therefore develop a stronger and more focused approach for such states, which will require greater attention in the coming decades.

In summary, it is clear that the direct country support function of the global health architecture is currently oriented more towards addressing the challenges of the last two decades. With a future global landscape likely to be very different, the system will require change in order to keep it relevant and fit for purpose in the coming decades. However, DAH will still be needed for the poorest and fragile states, as well as for poor populations in MICs.

Leadership and stewardship

Improved leadership and stewardship capability is critical to ensuring that the other functions of the global health system operate as they should. Together, leadership and stewardship form the 'glue' necessary to hold together an effective global system and to drive a strong global response to health emergencies and other negative cross-border externalities. Strong leadership is also necessary to facilitate R&D for neglected diseases, to address issues such as countries transitioning to middle-income status, and to overcome the political and bureaucratic resistance that will likely accompany a move away from vertical health financing towards a more integrated approach. Without effective leadership and stewardship, it will be difficult for the global health architecture to deliver effectively on its other critical functions.

> The WHO's current policies and institutional constraints therefore make effective engagement with CSOs and private actors difficult, while its strong medical and clinical focus have resulted in what many see as an unduly siloed, inadequately cross-sectoral approach to public health.

The WHO has a unique leadership role within global health – a role built into its constitution.[xxvii] However, political priorities are often seen to supersede independent, evidence-based decision-making.[77] In addition to assertions that it is overly politicized, the organization is frequently criticized as being excessively driven by the interests of its member states. The WHO's current policies and institutional constraints therefore make effective engagement with CSOs and private actors difficult, while its strong medical and clinical focus have resulted in what many see as an unduly siloed, inadequately cross-sectoral approach to public health.

In addition, leadership and stewardship within global health has become increasingly dispersed, with a growing heterogeneity in the types of actors participating in shaping the agenda and priorities. Given the at-times slow responses of the WHO, other UN agencies have stepped in to provide leadership on critical health matters. These include UNAIDS as a principal advocate for worldwide action against HIV/AIDS, UNICEF for child health and UNFPA for reproductive health. Civil society has also had a crucial role in advocacy and in drawing attention to important health issues. It has been critical in raising awareness around politically sensitive and neglected health

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xxvi These are the Democratic Republic of the Congo, Côte d'Ivoire, Haiti, Kosovo, Somalia and South Sudan.
xxvii Article 2A of the WHO Constitution states that the WHO shall 'act as the directing and co-ordinating authority on international health work'.

issues, as well as in drawing attention to marginalized and vulnerable communities. In many cases, civil society has filled a void both as a key advocate and as an implementer. This was seen most recently in the 2014 Ebola outbreak, with Médecins Sans Frontières in particular acting as a primary implementer and global advocate. Often, *distributed leadership* across different global health actors has been instrumental in getting important issues on to the global health agenda. At the same time, weak stewardship of the global health system has contributed to challenges in coordinating funding and delivery strategies, thus weakening the global response to important health challenges – as was seen during the Ebola crisis.

Looking to the future, there is a need for institutional arrangements that link health with its broader social determinants and facilitate strong collaboration with other sectors and actors – including the private sector and CSOs. Just as the World Bank's focus on health in its 1993 *World Development Report* brought health to the attention of many economists and finance ministries for the first time, strong leadership that can compellingly demonstrate the importance of multi-sectoral cooperation is critical to addressing the health challenges of the SDG era effectively. If this is to be achieved, however, there is first an urgent need for global health actors – particularly the WHO – collectively to shift the conceptualization of health away from its current medical and clinical focus. The increased dispersion of leadership may enable greater flexibility in responding to multi-sectoral challenges, by allowing different organizations with different mandates, networks and comparative advantages to assume leadership roles when they are best suited to do so.

In summary, the current system of leadership is arguably underprepared for the multi-sectoral nature of emerging health challenges, and sustained effort will be required to make it better fit for future needs. In a world of distributed leadership and interdependence between health and other sectors, there is a need for strengthened leadership capacity and for convening power to bring different actors in the global architecture together.

Priority Areas for Change, and Emerging Reform Proposals

This section presents priority areas for change and emerging key proposals for reforming the global health system – identified through the literature review, key informant interviews, high-level roundtable discussions at Chatham House, and the focus group discussion in Geneva.[xxviii] A comprehensive analysis of reform proposals over the period 2005–14 is included in the paper *Analysing Proposals for Reform of the Global Health Architecture*, prepared as part of this project.[78]

Reform proposals were identified and categorized based on the specific functions that they address. This process of mapping existing reform proposals helped to identify key focus areas of these, as well as functions of the global health architecture that were receiving comparatively less attention – despite the fact that an analysis of emerging trends points to their critical importance. It also brings an important analytical element to post-2015 agenda setting, in that it helps to identify whether proposals address emerging trends. A wide spectrum of proposed reforms was found: some target just one organization, but have broader implications for the entire constellation of global health actors; some affect multiple actors; and some address one specific function of the global health architecture (such as innovative reforms to increase R&D for neglected diseases).

Proposals were grouped based on whether they are cross-cutting in focus or relate most strongly to one specific function. If the latter, proposals were grouped according to the primary function they set out to improve.[xxix] Many proposals focus on improving direct country support with regard to 'established' global health challenges, such as the fragmented architecture and the need for additional global health funding. While the initial literature review, conducted in 2014, found only a few proposals with an explicit focus on addressing negative externalities (such as disease outbreaks, pandemic influenza and antimicrobial resistance), the Ebola outbreak in West Africa led to an array of reform proposals relating to the management of the system's cross-border externalities function. There are fewer reform proposals for improving global health leadership and on the provision of GPGs. The following subsection provides a brief synopsis of the reform proposals for the four key functions of the global health system outlined in Table 1; a more comprehensive analysis of other reform proposals is found in the paper cited above.

Cross-cutting proposals

Cross-cutting proposals directly affect all four essential functions of the global health system. Accordingly, related reforms are ambitious in scale and include important suggestions for changes to major existing institutions, as well as options intended to challenge current thinking on the global health system.

[xxviii] Inclusion criteria for 'transformative reforms' are defined as proposals that, if implemented, would significantly address identified weaknesses in the architecture and offer concrete steps towards operationalizing the proposed reform. In focusing on new, innovative approaches with a transformative character, proposals that made unspecific recommendations towards addressing the identified weaknesses were excluded. For example, proposals calling for greater funding or more harmonization were only included if they presented sufficiently specific, transformative approaches to addressing these challenges.

[xxix] Because the objective was to identify transformative reform proposals, thematically related reforms that shared similarities in what would be transformed were clustered. For example, the multiple proposals to expand the Global Fund were grouped together along with proposals to merge the Global Fund and Gavi.

One radical proposal envisages the consolidation of various existing global health agencies into just three agencies: a financing agency, a norm-setting agency, and an advocacy and accountability agency.[79] Sidibe and Buse argue that this would radically change and simplify the crowded global health landscape.

Nordström recently called for a strengthened WHO – termed UN-HEALTH – that would explicitly work cross-sectorally, like UNAIDS.[80] Rather than taking the traditional medical and healthcare perspective, UN-HEALTH would be based on a different paradigm and would consider health as a core dimension of development. The new organization, at the centre of the global health system, would provide leadership, including across sectors. It would also target other functions, including the provision of GPGs through norm- and standard-setting and knowledge-generation and -sharing. While the proposed UN-HEALTH would involve multiple actors through a multi-stakeholder governing body, the need would remain for intergovernmental agreements. This would require a very specific governance structure. Also addressing WHO reform, Hoffman and Røttingen propose splitting the WHO Executive Board into technical and political boards.[81] Doing so would strengthen the organization's political leadership capabilities, while also giving it the technical legitimacy to strengthen global responses through a de facto global public health institute (one outcome of the split), linked to regional and national counterparts.

Reform proposals for the management of externalities

An independent review of the WHO's pandemic preparedness in 2011 recommended the creation of a (minimum) $100 million contingency fund for emergency responses to global health threats, particularly for pandemics. With Ebola as a driving force, this proposal was approved at the 2015 WHA, alongside two other proposals – providing for an integrated outbreak and emergency response mechanism and for a global health emergency workforce.[82]

Echoing other recommendations for better outbreak preparedness, Bill Gates has recently called for the creation of a trained response reserve to be deployed during health crises, the bolstering of existing outbreak surveillance systems, and the development of a clearer process for expedited testing, approval and procurement of drugs and diagnostics during emergencies. Gates none the less reiterates that while these crisis mechanisms are necessary, fortifying basic health systems is most critical.[83]

Another proposal that was brought forward at the roundtables conducted under this project was the creation of a Public Health Emergency Troika, entailing a formal engagement between the WHO (for technical public health leadership and knowledge), the Office for the Coordination of Humanitarian Affairs (OCHA – for coordination and management) and the World Food Programme (WFP – for mobilizing logistical support).

Further proposals for strengthening the global system for disease outbreaks will likely emerge as part of the assessment of the global response to the 2014 Ebola outbreak. Perhaps more than any disease outbreak before it, Ebola is being widely used as a starting point for assessing the state of the global health architecture and crafting new proposals. At least three independent reviews have been created: one commissioned by WHO Director-General Margaret Chan; a second led by the US Institute of Medicine (now under the auspices of the National Academy of Medicine); and a third organized by the Harvard Global Health Institute and the London School of Hygiene & Tropical Medicine. The UN Secretary-General also launched a fourth review – the High-Level Panel on the Global Response to Health Crises – as requested by Chancellor Angela Merkel of Germany, Prime Minister Erna Solberg of Norway and President John Mahama of Ghana.[84]

Reform proposals for GPGs

Reform proposals concerning GPGs focus particularly on increasing funding for R&D, improving access to drugs, and increasing the R&D conducted in LMICs. Hollis and Pogge's Health Impact Fund (HIF) envisages a pay-for-performance model that would pay pharmaceutical companies based on their product's health impact.[85] Companies would receive a share of a reward pool – funded by governments – in exchange for selling new products at their lowest possible cost for the first decade. After the initial 10-year period, companies would further be expected to allow generic production of their registered products.[xxx]

One financing proposal by the CEWG recommended that developing countries with a potential research capacity should aim to commit 0.05−0.1 per cent of gross domestic product (GDP) to government-funded health research of all kinds; developed countries, meanwhile, should aim to commit 0.15−0.2 per cent of GDP to such research. The CEWG further proposed a legally binding convention on R&D. Such a convention would aim to establish state obligations for R&D, thereby increasing sustainable funding particularly for R&D in developing countries and for Type II and III diseases.[xxxi] The CEWG thus envisions a framework that will address areas that current R&D has overlooked, including Type II and III diseases, as well as issues related to Type I diseases in some developing countries.[xxxii] While traditionally there has not been significant appetite for enacting binding instruments in global health (the FCTC and the IHR being notable exceptions), the WHO has already responded to some CEWG recommendations, including taking steps to create a global R&D observatory and funding several projects that pilot new R&D models.

In an effort to address the problem of fragmentation in financing for global health innovation, a partnership has been proposed that would help investors coordinate financing and facilitate the process of taking health technologies from proof of concept to delivery.[86] The proposal would offer a platform of services to investors – including access to information and assessments of innovations, and a finance team to help negotiate coordinated and line-of-sight financing deals – intended ultimately to reduce the transaction costs of coordination and minimize the barriers to delivering innovations.

The creation of independent global observatories for surveillance and information-sharing has been proposed by a number of global health working groups and commissions, including the CEWG. Similarly, The Lancet – University of Oslo Commission on Global Governance for Health recommended the creation of a UN-mandated Independent Scientific Monitoring Panel on Global Social and Political Determinants of Health, to be modelled on the Intergovernmental Panel on Climate Change.[87]

Reform proposals for direct country support

Several proposals call for reforms of the established global health financing channels.[xxxiii] These proposals suggest consolidating existing funding mechanisms, or broadening their mandates, so that support to countries is provided in a much more integrated manner. Consolidation and mandate

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xxx While the proposed HIF assumes that financing would come from participating states, it does not specify the mechanism for facilitating this. Based on the assumption of a $6 billion fund, Hollis and Pogge estimate that countries would need to contribute 0.03 per cent of their gross national income, although the HIF does not call for a threshold contribution amount.

xxxi Type II diseases (prevalent in HICs and LICs, where the burden of disease rests on poor) and Type III diseases (prevalent almost exclusively in poor countries) are severely underfunded in pharmaceutical research, development, and production.

xxxii Type I diseases are defined as diseases incident in both rich and poor countries, with large numbers of vulnerable populations in each.

xxxiii There were few proposals for dramatic reforms to direct country support that addressed the global health architecture as a whole, and not specific institutions or practices.

expansion would contribute to reducing fragmentation, and could also respond to the need for targeted support for HSS – which will become more pronounced in the future.[xxxiv] Dybul et al call for a move away from vertical financing towards support for integrated national health strategies.[88] This would be accomplished through the emergence of principal financiers, either within a new facility or in a transformed existing institution, with the Global Fund or the World Bank seen as particularly attractive options. Related proposals, while less radical, envisage an expansion of the mandate of the Global Fund to include maternal and child health, thereby effectively covering all MDGs, or a merger of the Global Fund and Gavi to create one fund for health.[89, 90]

Although the proposal for a new RMNCH financing mechanism was initially made in 2011,[91] it was not until September 2014 that the creation of the Global Financing Facility for RMNCAH was announced. Housed at the World Bank, the Facility is intended to support the next version of the UN Secretary-General's Global Strategy for Women's, Children's and Adolescents' Health, and aims to maximize the comparative advantages of a broad set of partners and to consolidate the fragmented financing landscape in this regard. A multi-donor trust fund has been established at the World Bank to catalyse the work of the broader facility, to provide results-focused financing to support countries, and to incentivize additional financing for RMNCAH from the International Development Association (the concessionary financing arm of the World Bank Group).[92]

> Hendra proposes a scale-up of existing initiatives to harmonize UN agencies, calling for an expansion of the Delivering as One initiative and concurrent improvement in the UN's focus on speaking with 'one voice'.

In response to the challenges of insufficient levels of financing and the high volatility of DAH, a range of proposals for increasing funding for health has been advanced in past years. The High-Level Taskforce on Innovative Financing for Health Systems, for example, has recommended further levying minor taxes on airline tickets, as currently used by UNITAID.[93, xxxv] Proposals to institute a small tax on international financial transactions to bolster development support have also gained some traction.[94] A number of reform proposals call for investment frameworks to hold all countries accountable for their financial responsibilities for global health. In suggesting a global Social Health Protection Fund, Ooms et al. propose a method of improving health financing and distribution through a weighted burden-sharing formula between countries.[95] The Chatham House Working Group on Health Financing recommends a similar measure, urging HICs to contribute at least 0.15 per cent of GDP to external financing, as part of a coherent global framework which also requires all countries to devote at least 5 per cent of their GDP to domestic funding for health.[96]

The multitude of UN actors engaging in global health has long led to calls for reform, especially as regards the way these organizations provide technical support to countries.[xxxvi] Hendra proposes a scale-up of existing initiatives to harmonize UN agencies, calling for an expansion of the Delivering as One initiative and concurrent improvement in the UN's focus on speaking with 'one voice'.[97] In its initial phase, Delivering as One focused on streamlining leadership, budgets, programmes and

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xxxiv As highlighted in Chapter 4, increased HSS support would also help to address the rise in NCDs. It could potentially also help to finance UHC – through the development of insurance systems and other approaches – in countries with greatest needs.
xxxv Since most of these have been analysed at length elsewhere, this paper provides only brief summaries of each in order to provide a broad picture of the type and scope of proposals put forward.
xxxvi Criticism of the UN system is frequently targeted at its perceived organizational dysfunction and donor-driven funding, both of which create a siloed, fragmented approach to operations. See also: Future United Nations Development System. UN Fit, or unfit, for post-2015 purpose? Briefing: 2014.

overheads. In its second phase, Hendra argues, the focus must shift away from process to effective delivery of results.[xxxvii, 98]

Proposals have also been offered in order to address more efficiently health challenges in countries transitioning to MIC status. The Global Fund has considered using, or developing with other organizations, a transition instrument – such as a loan – that would support countries that are no longer eligible for grants.[99] Global health experts have also called for a re-evaluation of the criteria used to allocate DAH. Glassman recommends eliminating income proxies as a method for DAH allocation, in favour of an approach based on disease burden, coverage gaps and cost effectiveness.[100]

Reform proposals for leadership and stewardship

A global health system with diffused leadership and many actors has created challenges for stewardship and coordination. Some proposals see reducing the democratic deficit at member state-led international institutions, such as the WHO, as a viable route towards improving institutional legitimacy and coordination between actors. Kickbush et al propose to address this through the creation of a Committee C at the WHA: while states would still be the only actors allowed to vote, the involvement of non-state actors under this model would nevertheless improve strategic coordination in global health.[101] The WHO proposed a similar measure in 2011, outlining a multi-stakeholder World Health Forum, but this was later rejected by member states.

Roundtable participants also proposed to develop a UN Health Commission to serve as a multi-sectoral convening body, with the aim of improving coordination between major global health agencies and other key actors. By involving stakeholders from other sectors, this would help mobilize a stronger multi-sectoral response and achieve a wide-reaching effect by bringing together and streamlining all UN agencies working on global health issues. The proposed commission would also play a key role in ensuring accountability by collecting data from relevant agencies and measuring their contributions against jointly agreed health and broader multi-sectoral objectives. Roundtable participants additionally noted that improving leadership at the regional level has the potential to improve, or at least supplement, leadership and stewardship globally.

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xxxvii Others see the main challenges as relating less to operations than to vision: Lidén (2013) called for the heads of UN health agencies to develop more ambitious goals, arguing that institutional reform is less important than a strong vision.

Charting the Way Forward: What a Future Global Health Architecture Could Look Like, and What Priorities for Change Exist

Major changes to the global health architecture were initiated around the turn of the millennium. Similar bold action is required today to enable the current system to respond effectively to the evolving opportunities and challenges posed by the post-2015 world and to move beyond a focus on healthcare, disease and mortality to a broader global health agenda focused on health and wellbeing for all. Achieving the proposed health SDG and targets will require the building of strong, resilient and equitable systems that enable all people to live healthy lives, and the global architecture should be rethought in a way that optimally supports countries in building these systems.

This section charts a possible way forward, and discusses areas for action to establish a global health system that is well-designed to support the objectives of the SDG era. Priority areas for change to ensure that the system is fit for purpose, and associated reform options shaped by the deliberations with global health stakeholders and key experts, include: improving the global system for detecting and responding to infectious outbreaks; optimizing direct country support to address changing country needs; providing GPGs; and strengthening cross-sectoral coordination and leadership. Table 4 summarizes key results of the analysis.

Table 4: Options for improvements in the global health system

Function	Diagnosis	How the function should evolve	Proposed actions
Management of externalities	Demonstrated lack of capacity to manage the transnational health threats posed by globalization	Scale up current capacities for tackling global threats by strengthening global preparedness and response mechanisms	• Strengthen global disease surveillance and detection capacities • Improve international coordination and capacity for responding to health crises
Provision of GPGs	Current global governance and markets are focused primarily on private goods and underprovide GPGs	Expand the full range of mechanisms and incentives for financing and coordinating GPGs, particularly for R&D funding	• Global responsibility framework • Partnership for R&D investments
Direct country support	Vast fragmentation has led to redundancies, destructive competition and high administrative costs	Consolidate funding channels at the global level, improve coordination between donors at country level	• Separate technical and financial support • Strengthen collaboration and move towards consolidation between global health financing partnerships (such as Gavi and Global Fund) • Improve transition management
Leadership and stewardship	Current leadership by the WHO is weak and has too much of a medical/clinical focus, whereas advancements in health significantly depend on economic, political and social determinants	Strengthen leadership and coordination arrangements between global health actors, advance multi-stakeholder engagement	• UN-HEALTH • UN Health Commission

Management of cross-border externalities

Enhancing the global system for detecting and responding to infectious outbreaks

Important steps were taken at the 2015 WHA to consolidate existing WHO response programmes into a single programme and more systematically to include other key actors, such as CSOs, in public health crisis response. Although the 2014 Ebola outbreak catalysed plans to create a $100 million fund for emergencies at the WHO and a scaled-up global health emergency workforce, major needs remain in international coordination for public health crises, as well as in global disease surveillance and monitoring. Tackling new and re-emerging threats, such as antimicrobial resistance, will be increasingly important, and requires better coordination between relevant actors – the WHO, other UN agencies, CSOs, governments and the private sector – and a scaled-up global surge capacity.

1. **Improve and formalize international coordination and capacity for responding to public health crises.** Adequately resourced, the WHO has the technical capacity and norm- and standard-setting legitimacy to provide leadership in public health crises by organizing all actors involved, assigning clear roles and responsibilities, and engaging in scenario planning with key actors to improve coordination before the next crisis. Even though proposals at the 2015 WHA strengthened the WHO's emergency response capacity – by creating an emergency response unit and a $100 million emergency contingency fund – more efforts are needed to formalize and strengthen international coordination between all relevant actors, including CSOs. An Independent Expert Group convened by Angela Merkel and Bill Gates before the 2015 G7 summit recommended creating a new autonomous entity within the WHO that would focus solely on infectious disease and all other emergency preparedness and response.[102, 103] The WHO has also been suggested as the lead coordinator for a Public Health Emergency Troika, which would also comprise OCHA and WFP. A formal collaboration could be established in which the WHO would take responsibility for technical public health leadership and knowledge; OCHA for coordination and management; and WFP for mobilizing logistical support.

2. **Strengthen global disease surveillance and detection capacities.** The integration of surveillance into global action plans and improved coordination between actors at local, national and international levels are needed. Building on the GOARN, one way to enhance this coordination could be through the establishment of a networked system of disease control centres and institutes of public health across the world that would facilitate rapid cross-border collaboration and coordination to deal with an outbreak as soon as possible after it is first reported. A range of global health stakeholders and experts, among them Bill Gates, Lawrence Gostin and Laurie Garrett, have recognized that strengthening monitoring and response capacities will require greater international commitments to enhance national surveillance and detection systems when the first indications of a public health crisis start to emerge. Scaling up financial commitments from HICs will be crucial to helping states develop surveillance and detection systems that fulfil the IHR's public health core capacities, ranging from national preparedness plans to reference laboratory systems. Enhanced coordination of disease monitoring between the different levels of the global health system, as well as increased investments in country-level surveillance and detection systems, would both improve each country's resilience in the face of emerging public health crises and allow for the global health system to respond to outbreaks more rapidly and effectively.

Provision of GPGs

Expanding R&D financing and the range of incentives for investing in R&D

Despite impressive gains in knowledge, standards and technology, this function requires a significant boost to ensure that it is fit for purpose. This will depend on a fundamental shift in how the global health architecture is seen to facilitate GPGs. There is a particular need to scale up health R&D, as well as access to the results of this R&D. The well-known challenge is that while there is little commercial incentive for pharmaceutical investment in R&D for poverty-related diseases, there is an urgent need for new means to control these diseases. In addition, financing for R&D is fragmented, with many actors making small and uncoordinated investments rather than large-scale investments that have a greater potential to develop and deliver effective global health innovations. Roundtable participants suggested focusing on two critical areas to address these challenges:

1. **Increase R&D financing through a global responsibility framework.** One method to increase R&D financing could be via a global responsibility framework (such a framework could also be used to finance other GPGs). A related suggestion for overcoming the problem of insufficient R&D financing for neglected diseases comes from the CEWG, which recommended obliging all countries to contribute to R&D funding. LMICs would be obliged to commit 0.05−0.1 per cent of GDP, and HICs 0.15−0.2 per cent of GDP, to government-funded health research. The CEWG also recommended creating a global health R&D observatory, under the auspices of the WHO, that would address gaps in information by collecting information on the R&D pipeline and financing, and sharing lessons learned.

2. **Develop a partnership for investors to coordinate blended financing for global health innovations.** A partnership has been proposed that would bring together a group of public and private investors to engage in coordinated and targeted finance deals for global health innovations. To increase the impact of investments and reduce the transaction costs resulting from the increasingly fragmented financing for global health innovations, this partnership would serve as a forum, curator, syndicator and bridge across the public and private actors involved in taking health technology from proof of concept to delivery at scale. A broad platform of services would be offered to investors, including access to shared comparable assessments of innovations and a finance team with expertise in public–private negotiations to support the negotiation of coordinated financing arrangements. The partnership would help curate technologies and support the product as needed in order to reach scale, and in so doing absorb the transaction costs of structuring blended funding for innovations; and connect scientific and medical expertise with investors, and innovation with procurement. The partnership would aim to stimulate more investments that are better aligned with the interests of regulators, purchasers, distributors and people, and that have a greater potential to be linked to uptake and delivery.

Direct country support

Optimizing direct country support to address changing country needs

Despite progress made towards meeting the health MDGs, aided by the rise in DAH and the creation of new funding mechanisms, the direct country support function is still oriented towards the priority challenges of the last two decades. Direct country support will in future need to overcome

fragmentation among financiers and technical support providers, as well as help strengthen country health systems to enable them to adapt to demographic, environmental and health trends. The challenges posed by fragmentation – such as multiple funding opportunities consuming resources and skewing health priorities in the direction of donors – will continue to be an area in which the direct country support function needs to improve. Technical support will be increasingly important, and providing this support will require increased global capacity, as well as collaboration with ministries of health and treasuries. The unmet needs of the poorest populations in fragile states and the increasing number of MICs are a growing priority area, and will need to be targeted if direct country support is to remain fit for purpose in the coming decades. Although countries transitioning from LIC to MIC status may benefit from the emerging Equitable Access Initiative (EIA) – which aims to construct an alternative framework for classifying countries' health needs and capacities beyond traditional economic metrics such as GDP[xxxviii] – more efforts are needed to help countries manage transitions. In the context of a future global landscape that is likely to be very different from today's, actions considered in consultations include:

1. **Separate financial from technical support.** Improving the efficiency and effectiveness of the global health system will require separating financiers from technical support providers. Actors that provide both technical support and financial support for programmes are faced with an unintentional but inherent conflict of interest. By offering both funding and technical support, external actors limit the ability of countries to develop their own strategies and policies, and thus ultimately reduce country ownership. A more appropriate framework would distribute the responsibilities among global health actors: UN and bilateral agencies should progressively focus on the provision of technical support, while a limited number of key funders should provide financial support. Stronger partnerships in-country between the various intergovernmental agencies and bilaterals, and between multilateral funders, are needed to make this division of labour work effectively.

2. **Reinforce consolidation and integration of financing channels.** One option that continues to be put forward involves consolidating funding channels into a Global Fund for Health, with the aim of reducing inefficiencies, increasing accountability, managing transitions more effectively, and simplifying the burdensome application and reporting processes for countries. More moderate proposals envisage improved coordination and cooperation arrangements between the principal multilateral funding channels, among them the Global Fund, Gavi and the World Bank. Key elements of these strengthened collaborative frameworks are co-financing of country plans and investment cases, joint fiduciary frameworks and joint progress reporting. The Global Financing Facility for RMNCAH is an example of a concrete effort to scale up and align financing of multilateral and bilateral donors at country level.

3. **Tailor support to countries in transition and fragile countries.** Global health actors should improve technical support and boost political advocacy for countries transitioning out of financial assistance, in order to ensure that such states are able successfully to expand their fiscal space and revenues for health. Although the World Bank provides technical support to member states, global capacity needs to be scaled up (at the World Bank or other institutions) to help increase domestic health spending, especially as more countries transition from LIC to

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[xxxviii] The first meeting of the EAI was hosted by the WHO in February 2015. Its convening partners are the WHO, the World Bank, Gavi, UNAIDS, UNICEF, UNDP, UNFPA, UNITAID and the Global Fund. For further information on the EAI, see The Global Fund. *The initial meeting: 23 February 2015*. [Online] Available from: http://www.theglobalfund.org/en/equitableaccessinitiative/updates/2015-02-23_the_initial_meeting/ [Accessed 24 August 2015].

MIC status. Ensuring that the existing range of financial instruments is appropriately matched to country transition paths will also be critical to successful management of this process. The Global Fund has considered using, or partnering with, other organizations to create a transition instrument, such as a loan agreement, that would continue to provide support in countries that are no longer eligible for grants.[104] Chatham House roundtable participants also suggested the more strategic use of loans/credits under World Bank auspices to sustain and build on health gains in MICs. Furthermore, the global health system should dedicate greater attention to direct country support for fragile states and help build linkages and coordination between actors in health, development and the humanitarian field in those states.

Leadership and stewardship

Strengthening global health leadership and cross-sectoral coordination

Effective leadership and stewardship is fundamental to the ability of the global health architecture to deliver on all of its critical functions. If it is to be fit for future needs and the SDG era, the global health system has to shift from its medical and clinical focus to embrace the broader drivers of health and engage with other sectors. The WHO plays a central role in leadership, but it has been criticized as being over-politicized, compromised by political interests and internal politics, overly siloed, and structurally unable to engage with CSOs and private sector actors. Distributed leadership has emerged to fill some gaps left by other global health actors, but this arrangement is faced with many challenges in coordinating funding and delivery strategies. Leadership and stewardship is a priority area for change because strength in this function will be required in the SDG era in order to organize, coordinate and convene global health actors to support action and results at both global and country level. Areas for action considered in the stakeholder consultations include:

1. **Create a UN-HEALTH.** One reform proposal recommended bringing together, based on a common results framework, the UN agencies with health-related mandates into a new organization. Just as UNAIDS has allowed for more coherent response as regards HIV/AIDS, the proposed UN-HEALTH could achieve a similar but more wide-reaching effect by connecting and streamlining all UN agencies working on global health issues. In line with the UNAIDS model, UN-HEALTH would work cross-sectorally, bringing together all the different parts of the international system. UN-HEALTH would be based on a paradigm that understands health beyond a medical and healthcare perspective, instead considering health as a fundamental part of development. With a mandate focused on technical expertise, UN-HEALTH would provide global guidance on norms, standards and policies, and information on health trends and outcomes. In addition to providing a multi-stakeholder governing body, UN-HEALTH would also require a governance structure capable of managing the negotiation of new intergovernmental agreements related to health issues.

2. **Establish a global forum for multi-stakeholder engagement.** A less radical proposal suggested by stakeholders is the creation of a commission that would focus on improving coordination between major global health agencies within the UN and other key actors, including CSOs and the private sector. This would, *inter alia*, create a legitimate and institutionalized forum for non-state actors to express their views. One concrete proposal involved creating a UN Health Commission that would systematically incorporate non-state actors in its coordination efforts, envisaged as a step towards better reflecting the distributed leadership in the global health system. Reporting

to the UN Secretary-General, the commission would function as a platform for multi-sectoral convening, foster cooperation between health and other sectors, and improve the efficiency and strength of multi-sectoral responses to health challenges. The commission would also play a key role in ensuring accountability by collecting data from relevant agencies, and holding the agencies accountable by measuring their objectives against jointly agreed health and broader multi-sectoral objectives.

Conclusion and Outlook

The global health system has contributed significantly to progress towards improved health over the past few decades: life expectancy has risen; many more people live healthy lives as a result of improved access to medicines, vaccines and health services; and new sources of funding for global health have led to lower levels of poverty, better education and expanded access to clean water. However, the current analysis suggests that there is a need for change, and that there are opportunities to reflect on how the existing architecture should evolve or be transformed to address major future challenges and to achieve the health targets embodied particularly in SDG 3. While the intended post-2015 process addresses the *what*, more debate is needed concerning *how* the future global health goals can best be achieved.

This paper, which serves as the final report of the Rethinking the Global Health Architecture Project at Chatham House, identifies priority areas for reform as the global health architecture confronts emerging challenges. The management of externalities, the provision of GPGs, and leadership and stewardship will all require greater attention in the future. The direct country support function also needs to change substantially; even if LMICs experience economic growth, they will require targeted support to enable them to expand their fiscal space for health, and the poorest countries will continue to rely on donor support. The 2014 Ebola crisis has not only demonstrated that health systems are key to increasing access to health services, but also underscores the importance of creating strong health systems to facilitate public goods and avoid public 'bads'.[105] Given that none of the existing financing channels has a strong focus on HSS, institutional changes are likely to be required to provide HSS support to the countries in greatest need, including fragile states.

The findings of this project are intended to inform a high-level political dialogue at the level of heads of state and other leaders in both developed and developing countries who can act as champions to drive forward the change needed to evolve or even transform the global health system. Only through such high-level political engagement can resistance to change be overcome. Just as previous innovations in global health have resulted from the recognition of a gap in the architecture combined with initiative from individual agents of change, this paper also aims to equip leaders with the evidence to support the reforms needed to make the global health architecture fit for purpose in the post-2015 era.

This is just a starting point, and the options for reform of the global health architecture analysed here need to be taken forward beyond the current project. This will require both additional technical work and, particularly, high-level political engagement to ensure that those who can help drive change are included at an early stage in further discussions.

Acronyms

African CDC	African Centres for Disease Control and Prevention
CDC	[US] Centers for Disease Control and Prevention
CEWG	Consultative Expert Working Group on Research and Development: Financing and Coordination
CIH	Lancet Commission on Investing in Health
CSOs	civil society organizations
DAH	development assistance for health
EAI	Equitable Access Initiative
FCTC	Framework Convention on Tobacco Control
GDP	gross domestic product
Global Fund	Global Fund to Fight AIDS, Tuberculosis and Malaria
GOARN	Global Outbreak Alert and Response Network
GPGs	global public goods
HICs	high-income countries
HIF	Health Impact Fund
HSS	health systems strengthening
IFFIm	International Finance Facility for Immunisation
IHME	Institute for Health Metrics and Evaluation
IHR	International Health Regulations
LICs	low-income countries
lower-MICs	lower-middle-income countries
MDGs	Millennium Development Goals
MERS	Middle East respiratory syndrome
MICs	middle-income countries
NCDs	non-communicable diseases
OCHA	Office for the Coordination of Humanitarian Affairs
OECD	Organization for Economic Co-operation and Development
PEPFAR	US President's Emergency Plan for AIDS Relief
PMNCH	Partnership for Maternal, Newborn and Child Health
R&D	research and development
RMNCAH	reproductive, maternal, newborn, child and adolescent health
RMNCH	reproductive, maternal, newborn and child health
SARS	severe acute respiratory syndrome
SDGs	Sustainable Development Goals
UHC	universal health coverage
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNITAID*	
UNMEER	UN Mission for Ebola Emergency Response
WHA	World Health Assembly
WHO	World Health Organization

* Stand-alone acronym; UNITAID was founded in 2006 as the International Drug Purchase Facility

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Acknowledgments

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Cover image: A Pakistani health worker gives polio vaccines to children in the suburbs of Lahore, Pakistan, February 2015.
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