Discussion Paper for the Consultative Meeting on Public Health Solutions in the Post-Ebola World

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Introduction

Following the West Africa Ebola virus disease outbreak of 2014-16, considerable efforts have been made to examine the reasons why the virus spread so widely and with such a tragically large loss of life. There have been repeated exhortations from various expert reviews and analyses (e.g. the Ebola Interim Assessment Panel, Harvard-LSHTM panel, UN high level panel) about the critical importance of national preparedness and strong health systems, if we are to prevent similar crises of this scale in the future. Further, commentary from leading global health leaders emphasise the importance of establishing and maintaining functional national health systems and public health functions during non-crises times as a component of global health security.

This meeting, and therefore this paper, explicitly do not seek to repeat the findings on which those conclusions are based. However, whilst there is global consensus about the need for strong health systems, consensus is less apparent about effective mechanisms for establishing and maintaining those systems, particularly in resource-constrained settings in the presence of multiple and sustained stresses (e.g. conflict, famine, climate change, globalisation). While it is assumed that effective preparedness and response require comprehensive national health systems that encompass both public health functions and the health services (the latter normally focused on curative medicine), how and if these functions operate as equally vital protective mechanisms of a national health system remains unclear. The aim of the meeting is to examine how, in practice, national public health systems and services can more effectively and coherently meet a dual purpose: improving the daily health of the public and leveraging the skills and protocols of public health providers to prepare for and respond quickly to the inevitable, but unpredictable outbreaks of the future.

Four countries perspectives will be presented to illustrate various aspects of this issue and provoke discussion about solutions to the following health systems questions:

> **Guinea** – What are the lessons from the Ebola outbreak that are now being applied to strengthen the health system and services? Where are investments being made in improving

public health related services that address daily health issues and have the potential for detecting and responding to future infectious disease outbreaks?

Nigeria – How were skills and technology developed to eradicate polio used to halt the spread of Ebola and what lessons does this experience provide as countries seek to strengthen health systems?

Uganda – How have episodic outbreaks of Ebola, Marburg and, recently, Avian Influenza influenced the way the health system and public health services are organized and delivered? How is the One Health approach incorporated given the zoonotic nature of these outbreaks?

Malawi - As the one country that has not experienced an Ebola outbreak, how has the health system developed to address "common" health threats? In light of these investments, how well prepared are community and public health officials to deal with an unexpected outbreak of a disease such as Ebola or another pandemic threat?

In a 2015 Lancet commentary, a series of essays by public health experts associated with Chatham House re-framed the biosecurity discourse from international epidemics and pandemic threats, to fortifying individual health security through "access to safe and effective health services, products, and technologies"[1]. This notable pivot, revealed the gap between the WHO International Health Regulations[2] mandate to mitigate and prevent collective health risks and the need for national systems that are robust enough to provide preventive care for individual health while effectively detecting outbreaks in early phases.

This paper aims to inform the meeting by providing context and suggesting areas that need greater scrutiny if we are to effectively join up public health and clinical medicine at national level within a unified health system – in the first instance by the attendees of the meeting, and once revised based on the discussions of the meeting, by the wider global health community. The outcome of the meeting will be a Chatham House Briefing Note, which summarises the peer review of the concepts in this paper arising from the presentations and subsequent panel and audience discussions. Another potential outcome is a commentary in the Lancet summarizing the meeting objectives and findings.

A false dichotomy: The International Health Regulations versus The Health Systems Framework

The separation of 'public health' and 'clinical health' services as protective systems against health risks date back to the World Bank's 1993 publication of the development report 'Investing in Health'[3]. This report outlined funding of infectious disease control as selective primary healthcare and ambiguously

[1] Heymann, David L., et al. "Global health security: the wider lessons from the West African Ebola virus disease epidemic." The Lancet 385.9980 (2015): 1884-1901.
[2] WHO International Health Regulations (2005). Third Edition http://www.who.int/ihr/publications/9789241580496/en/
[3] "World Bank. 1993. World Development Report 1993 : Investing in Health. New York: Oxford University Press.

marked all other essential clinical services for financing through private financing[4]. This unwieldy classification contributed to the dismemberment of the health systems into disease-specific programmes divvied up between global health institutions with the backbone health system left as a low priority for national and international entities. Since the 2014 Ebola crisis, it has become paramount to re-examine and expand our understanding of the health system and to thoughtfully develop responsible mechanisms to prevent or respond to health threats.

The International Health Regulations have propelled global commitment to reduce the likelihood of outbreaks and upholds national health system functions that will prevent, detect, and rapidly respond to public health risks and public health emergencies of international concern. Once Ebola revealed the fragility of global health security, priority areas pertaining to public health events were identified as areas of international interest for the collective security. One example of a mechanism created to seek to improve and maintain IHR compliance is the Global Health Security Agenda (GHSA). The GHSA identified eleven "action packages" or priority areas under the three IHR -doctrinal areas (Table 1).

Table 1. Global Health Security Agenda priority areas for IHR compliance

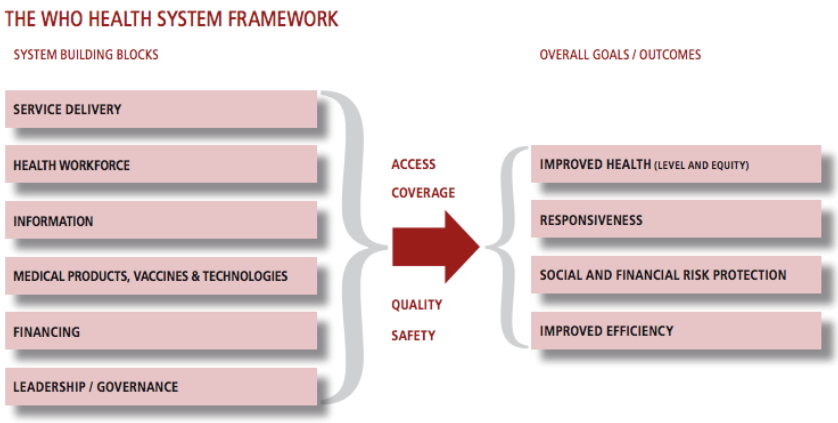
Prevention of outbreaks through monitoring:	1. Antimicrobial resistance 2. Zoonotic diseases 3. Biosafety & biosecurity 4. Immunisation
Capacities that allow for early detection of threats such as:	5. National laboratory systems 6. Real time surveillance 7. Systematic reporting 8. Workforce development
Sectors needed for rapid and effective response, including:	9. Emergency Operations Centres 10. Public health links to law enforcement and other sectors 11. Medical countermeasures

Ultimately, investments in prevention and preparedness services and functions for common health threats such as vaccine preventable and epidemic-prone diseases, TB, malaria and HIV, including surveillance and diagnostic services and public awareness, can reduce the demand for and costs of clinical and curative care components of the health system[5]. Making such investments to decrease individual risks of daily health threats through accessible and equipped health systems would be much more politically and socially defensible than focusing only on IHR core capacities to detect emerging and remerging diseases or large-scale health threats.

[4] Ooms, Gorik, and Rachel Hammonds. "Global constitutionalism, applied to global health governance: uncovering legitimacy deficits and suggesting remedies." Globalization and health 12.1 (2016): 84.
[5] The World Health Organisaton, Regional Office for Europe (2014). The case for investing in public health

The WHO Framework for Strengthening Health systems (Figure 1) was developed to provide an all-inclusive definition to capture the interlinked and complex nature of a health system[6] .The framework employs a supply and demand attribution to system components, but does not identify public health functions as part of a health system. This framework is often misleadingly referred to as a "whole" system view of national health structures. In fact the "whole" health system should be a natural pipeline, which reflects individual health risks with measures to mitigate threats at every plausible stage.

Figure 1. WHO framework for health systems



Both public health functions and health services are essential to effective preparedness against destabilising health risks including infectious disease outbreaks. The missing public health building blocks would include preventive services such as 'screening', 'clinical access'; the ability to detect potential outbreaks early at the health system through the use of functional disease surveillance systems and laboratories; and the capacity to promptly and effectively respond to health threats through in-country rapid response team and existing networks between the health system and the community.

The construction of the IHR (2005) policy as the "biosecurity mandate" and the WHO curative-focused health systems framework divorces the idea that their parts are interdependent and must be integrated to ensure a continuous, unbroken, total national and then global health security mechanism. This separation reflects, or perhaps directs, the neglected discourse on essential public health features for biosecurity and pandemic preparedness within health systems. The resulting division has created an dilemma for national governments and international institutions that struggle to invest limited resources into health systems.

[6] World Health Organisation

How does the international community fund strong and sustainable national health systems?

The National Academy of Medicine estimated[7] that the global economy could benefit 13 fold in spending to prevent disease outbreaks versus an emergency response *per* year, yet core and long-term investments to building and maintaining health systems in poor countries remains absent. Donors are perceived to lurch from one crisis to the next, inevitably spending more on crisis response than in financing national preparedness. For example, The US Government, redirected money designated for the Ebola response into Zika, incorrectly terming it as 'leftover monies '[8]. Yet, the efforts to rebuild the health systems and workforce of the three West African countries is on-going but now suffers from the reduced and diverted funding. Moreover, countries struggle to meet targets for the domestic financing of health systems[9]. One reason for this could be the lack of understanding and consensus on how to provide uninterrupted resources and expanded long-term local capacities to public health functions as part of the national health system—both from a national and donor viewpoint.

Examples from the Global Fund and the Global Polio Eradication Initiative

The Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) was created in 2002 with the aim to dramatically increase resources to fight TB, HIV, and Malaria, and to direct those resources to areas of greatest need. In 2007, the Global Fund made a shift from only funding vertical disease systems in these three diseases to also supplementing health systems. One analysis of the issues preceding this shift stated that: AIDS treatment could not be provided without health workers to provide it and at the time Africa, with the highest burden of AIDS, had a one million health worker deficit[10]. A resulting diagonal approach to achieve both aims resulted in funding to alleviate constraints to achieving Global Fund and Millennium Development Goals aims and therefore expanded the workforce, supported improvements in diagnostic services, provided training for management and coordination, monitoring and reporting, and increased financial access to health services and care for the three disease[11].

The Global Polio Eradication Initiative (GPEI) is the main funding mechanism for poliomyelitis eradication efforts, yet its investments have been leveraged to replenish national health systems. Resources that GPEI has supported have gone towards building the national public health workforce, implementing a systematic accountability framework to enhance staff performance, expanding immunisation services and support campaigns, improving zero-reporting for polio and other priority diseases, and supporting the supervision structure. These mostly human resource, but also systematic additions to the health system have resulted in reduction of poor health outcomes, increase in

[7]National Academy of Medicine. The Neglected Dimension of Global Security: A Framework to Counter Infectious Disease Crises. Washington, DC: The National Academies Press (2016). https://doi.org/10.17226/21891

[8] David Nather and Dylan Scott. White House will dip into Ebola funding to fight Zika, possibly ending impasse, Stat News April 5, 2016 https://www.statnews.com/2016/04/05/obama-administration-ebola-zika/

[9] Barugahare, John, and Reidar K. Lie. "Obligations of low income countries in ensuring equity in global health financing." BMC medical ethics 16.1 (2015): 59.

[10] Ooms, Gorik, et al. The'diagonal'approach to Global Fund financing: a cure for the broader malaise of health systems?." Globalization and health 4.1 (2008): 6.

[11] WHO. Global Fund Strategic Approach to Health Systems Strengthening September, 2007.

community engagement, and even a decrease in stock out of essential materials for vaccinations and disease surveillance[12].

Conclusion

The way forward for the global health community to stop preventable outbreaks and epidemics is to invest in robust health systems. This discussion paper has provided insight on the current distinction between the public health system and the curative system, and how current global health policies and strategies sustain the inability to embrace a clear and unified health system that provides both individual and collective health security. The four countries featured in the consultative meeting will present their experiences and perspectives on improving their national health system to meet routine health needs as well as emergency circumstances. As the discussion turns to sustainable methods to invest in national health systems –especially in low income countries—it will be necessary to understand which policies, tools, and mechanisms should be consulted, or (re)constructed, to forge a new way forward for global solutions for public health preparedness.

[12] Kamso, Jean, et al. "The contribution of the polio eradication initiative to narrowing the gaps in the health workforce in the African Region." Vaccine 34.43 (2016): 5150-5154.