The state of governance and coordination for health emergency preparedness and response

Background report commissioned by the Global Preparedness Monitoring Board

PRE-PEER-REVIEW DRAFT

This report is presented in draft form and will undergo peer-review and editing prior to formal publication.

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Executive Summary

At the time of writing (July 2019), the UN had just held an emergency meeting to discuss the Ebola outbreak in the DRC as the first confirmed case occurred in Goma.[1] From our analysis, the components for a 'global safety net' for health emergencies that exceed country capacity have already been put in place, have been identified but are not yet established or are lacking. We highlight key findings and conclusions for the GPMB to consider as there is no time to lose in strengthening global preparedness and response. The recognition by many stakeholders of the need to emphasise preparedness and readiness for future health emergencies is well received. The benefit of this was borne out recently in the quick response by Ugandan authorities to imported cases of Ebola from the DRC. Increased investments and monitoring of activities for both country preparedness and the global safety net are vital to ensuring all people are secure from health threats and able to lead healthy lives. To do so, we challenge the Board to be bold in asking for immediate and sustained engagement at all levels of society, from local communities to international institutions.

This report focuses on the state of governance and coordination of health emergency preparedness and response, with a particular focus on activities that have occurred since the 2014-16 West Africa Ebola outbreak. Preparedness and response exist as two phases within a broader cycle of health emergency management. Preparedness is typically considered to be all activities related to strengthening emergency management systems up until the point that an event is detected. At which point, the response phase is activated. For the purpose of this report the following definitions are used: preparedness is defined as national, regional and global support for country capacity and capability strengthening; global readiness is defined as the global ability to quickly and appropriately respond where country capacity is exceeded; response is defined as the immediate actions to save lives, protect property, and meet basic human needs.

In response to a request from the GPMB secretariat, research began with a mapping exercise to visualise the changing global health architecture between 2014 and 2019, and a review of the implementation of 26 governance and coordination recommendations made by three independent panels after the West African Ebola outbreak had been addressed.[2] Desk-based reviews and semi-structured interviews with independent experts from global, regional and national organizations and networks further informed this report. This

PRE-PEER REVIEW DRAFT

[1] World Health Organization, "High-Level Meeting on the Ebola Outbreak in the Democratic Republic of the Congo Affirms Support for Government-Led Response and UN System-Wide Approach," accessed September 13, 2019, https://www.who.int/news-room/detail/15-07-2019-high-level-meeting-on-the-ebola-outbreak-in-the-democratic-republic-of-the-congo-affirms-support-for-government-led-response-and-un-system-wide-approach.

[2] Jakaya Kikwete et al., "Protecting Humanity from Future Health Crises: Report of the High-Level Panel on the Global Response to Health Crises," (New York: United Nations, 2016); S. Moon et al., "Will Ebola Change the Game? Ten Essential Reforms before the Next Pandemic. The Report of the Harvard-Lshtm Independent Panel on the Global Response to Ebola," *Lancet* 386, no. 10009 (2015); P. Sands, "The Neglected Dimension of Global Security: A Framework for Countering Infectious Disease Crises," *N Engl J Med* 374, no. 13 (2016).

report focuses on infectious disease outbreaks, but the authors acknowledge that research on health emergencies should include other incidents such as chemical and nuclear events. An 'all-hazards' approach, as per the *Sendai Framework for Disaster Risk Reduction 2015-30*, is vital for ensuring communities are secure and healthy.

The foci of this report are drawn from the key elements of the IHR, namely global support to country preparedness, global capacity to respond where country capacity is exceeded (named herein as 'global readiness'), and travel and trade. Guided by the recommendations and interviews, WHO reform and the role of the international political economy were added to provide a more complete understanding of health emergency preparedness and response community and its role and position among other global governance structures. Though the West African Ebola outbreak served as a point of reference for the study, evidence for this report included preparedness for any outbreak of infectious disease constituting a public health emergency, ranging from common outbreaks of known pathogens such as cholera and meningococcal to outbreaks of emerging infectious diseases such as SARS and Influenza A (H1N1). The paper concludes with recommendations drawn from our analysis.

The state of health emergency preparedness and response

Attention to health emergencies has substantially increased since the 1990s as a result of globalization and the potential for large-scale outbreaks to rapidly cross borders**.** Twenty years after the revision of the International Health Regulations (IHR), the devastating West Africa Ebola outbreak in 2014 laid bare the insufficiencies in the health emergency preparedness and response system, resulting in a number of high-level reviews and subsequent recommendations for improvement.

Our analysis shows that most of the 26 governance and coordination recommendations from three high-level panels have either not been implemented (37%) or implemented only in part (37%). Twenty-six per cent have been implemented in full. However, this does not necessarily indicate a lack of progress – some recommendations have since been deemed inappropriate (such as a permanent UN-level group on global health crises), others may have been substituted with alternative arrangements, or the tasks require ongoing implementation and monitoring (such as the implementation of the Sustainable Development Goals (SDGs)).

Existing global health institutions and networks have strengthened their work on preparedness and response since 2014, and a number of new entities and cross-sectoral partnerships have been established. However, most interviewees felt that health emergency preparedness and response activities were not being adequately governed or coordinated. We investigated these claims through the lens of the IHR, as the chief governance framework for health emergency preparedness and response, focusing on global support to country preparedness, global readiness to respond, and the prevention and monitoring of trade and travel restrictions. The reform of WHO and its role as coordinator of the IHR are also discussed in addition to the impact of the

PRE-PEER-REVIEW DRAFT

prevailing political economy on achieving preparedness and response objectives.

Global support for country preparedness

The 2014-16 West Africa Ebola outbreak catalysed support for country preparedness activities (Figure 1). However, a number of challenges to increasing country preparedness from a governance and coordination perspective were identified. Greater governance, coordination and monitoring of institutions and partnerships contributing to preparedness are needed, and WHO should increase its role as a coordinator of institutions and networks involved in preparedness activities.

Despite the increased focus at the global level, country preparedness ultimately lies in the hands of countries. Preparedness activities should be coordinated from a country needs perspective and coordinated between partners to optimise resources and outcomes. This can be achieved through the development of costed national action plans that can be linked to regional and global financial and technical support, and regularly reviewed and updated to ensure sustainability.

Investing in country preparedness necessarily requires investing in a strong health workforce: training of new staff, retaining existing staff by providing good, well-paid jobs with pathways for career progression, and ensuring employment policies are gender sensitive.

It is essential that communities and local organizations be active participants in the planning and implementation of preparedness activities to ensure their needs are met. Where possible, preparedness activities should be incorporated horizontally into health systems so as to strengthen rather than detract from day-to-day service delivery.

Devising new methods for maintaining health systems in fragile and conflict-affected countries is also necessary to ensure communities are protected and health emergencies are quickly detected and contained.

New tools developed by WHO aim to improve the monitoring of financial and technical resources available, to support countries in the implementation of their national action plans for health security. Further evaluation is required to demonstrate the impact on preparedness.

Global readiness to respond

With varying levels of preparedness across the world and the ability of health emergencies to rapidly cross borders, global readiness to support countries when national capacities are exceeded remains crucial. Although the evidence suggests that we are better prepared to respond to a large-scale outbreak today compared to in 2014, the general consensus among interviewees was that we still have a long way to go to achieve global readiness to respond to public health emergencies. The proliferation of institutions and other support groups (Figure 1) is uncoordinated and, although more partners are indicating

PRE-PEER-REVIEW DRAFT

they have response capacities, evidence from current outbreaks highlights critical gaps in the delivery of key response activities. No such mechanism for mapping and tracking these capacities currently exists.

There has been greater awareness of the importance of community engagement and issues of gender in an effective outbreak response, however, integration of both aspects into global and local response activities has been insufficient.

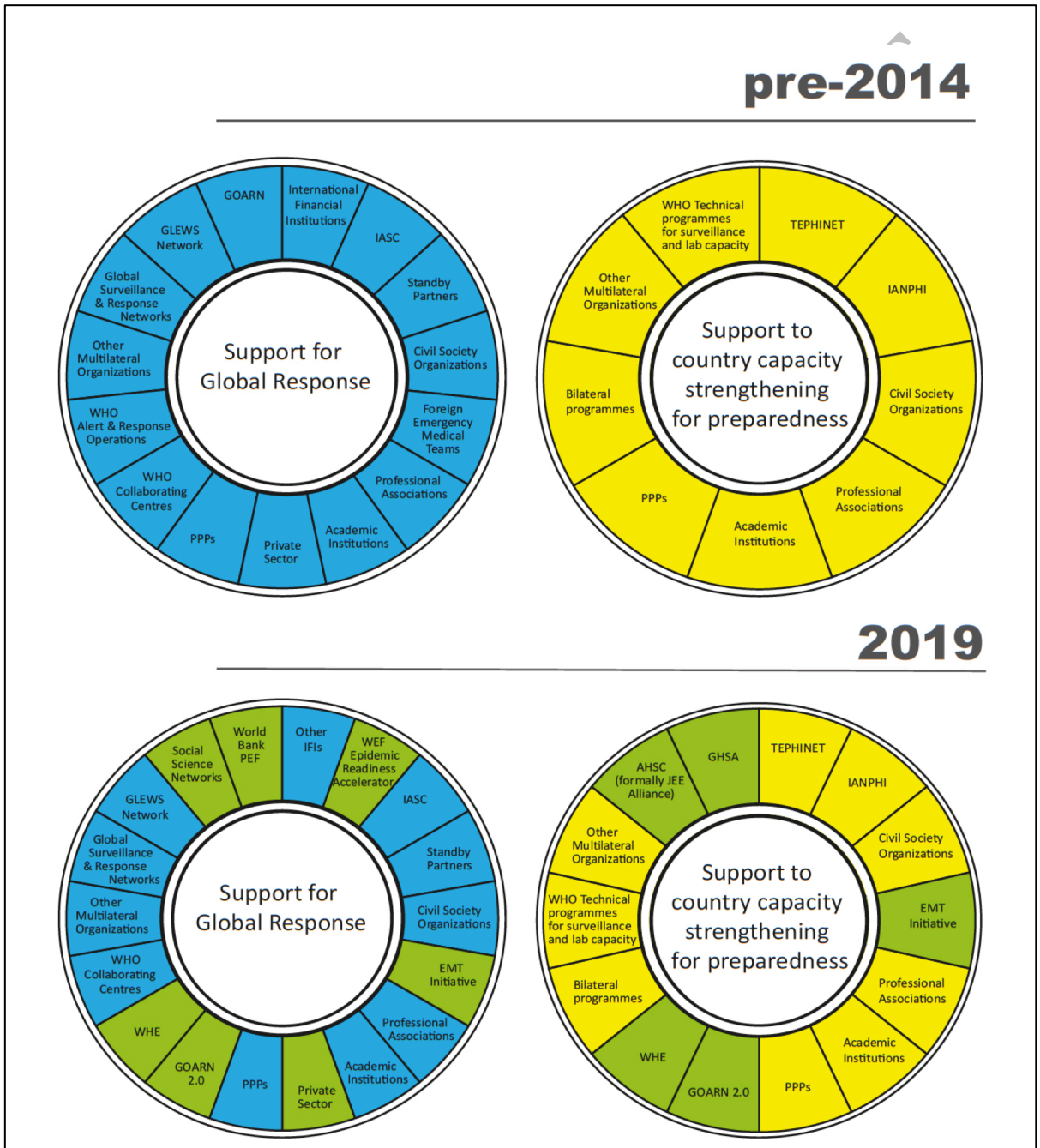


Figure 1. Global support for country preparedness and global readiness to respond. Global institutions, sectors and networks working in support of global readiness (blue wheels) and country preparedness (yellow wheels). *Green indicates organizations that were either newly developed (such as AHSC and GHSA) or have expanded their mandate 2014 (GOARN and the World Bank).*

While the establishment of the WHO Health Emergencies Programme (WHE) increased collaboration between health emergency and humanitarian responders, the Inter-Agency Standing Committee (IASC) protocols needed to elevate large-scale health emergencies to the highest political level, the UN, are new and relatively untested. Further monitoring is required to ensure robust systems for triggering, coordinating and escalating a global response are in place to strengthen readiness for the next large-scale health emergency.

Data collection and information sharing during a response has improved due to the development of new technologies, however the availability, accessibility and integration of these technologies needs to be improved for more effective and efficient response efforts. There is a need for greater governance and accountability of data sharing agreements to ensure better compliance, and that benefits and risks are shared equitably.

As with preparedness, financing for both readiness and response remains a key concern: it is unclear how much is being contributed for which activities, whether readiness or response, nor the outcomes of these activities.

Travel, trade and declaring a PHEIC

The implementation of travel and trade restrictions remains a key concern and the declaration of a PHEIC has, despite its initial intention, become highly politicised. The current binary PHEIC system was upheld by Member states at the 2016 World Health Assembly (WHA), but most interviewees agreed there was a need for an intermediary alert system to ensure global readiness.

WHO has only recently begun to play an active role in monitoring and attempting to prevent trade and travel restrictions. It is currently developing guidelines that outline the cost-effectiveness of trade and travel restrictions to provide an evidence-base for these restrictions and thus prevent countries from implementing them unnecessarily.

The private sector has been shown to both impact and be impacted by health emergencies. The WEF is working with WHO and companies to highlight the need to undertake risk assessments and develop business continuity plans accordingly.

Media and social media play a considerable role in impacting public perception, and decisions on travel to affected areas or continue working in perceived at-risk environments (such as airlines), implementing appropriate infection control prevention advice, as well as decisions by countries to implement trade or travel restrictions. There is a need for further research that monitors the influence of media reporting and social media activity, and other factors, during health emergencies, to develop guidelines and relationships between organizations that overcome present challenges.

WHO reform and its role moving forward

Most of the recommendations following the 2014-16 West Africa Ebola outbreak were directed at WHO, focusing on internal governance reform and

PEER REVIEW DRAFT

the need for operational capacity. The development of the WHE and a number of new health emergency guidelines has in large part satisfied these recommendations.

Human resources are a key, ongoing issue within WHO, particularly around issues of gender, and the deployment of already under-resourced staff from headquarters during large-scale emergencies, leading to excessive workloads and staff burnout.

WHO should focus on what only WHO can do: providing technical advice, setting norms, convening institutions and other sectors for preparedness and response activities, and coordinating activities at global and community level.

There is a need for greater re-distribution of resources from headquarters to regional and country offices. The optimal balance of investments between WHO headquarters, regional offices and country offices requires mapping the roles and responsibilities, and activities and outputs, to ensure that the limited resources are distributed to the places where they can make the biggest differences, with a focus on strengthening capacities at a local level.

For deployment, WHO must continue to develop stronger links with local and regional deployment partners who can more readily deploy, and to convene global institutions and other support groups for improved coordination during 'peace time'. For any deployment activities, where country and regional capacity is insufficient, WHO must be adequately resourced by Member states and donors.

Partnering with other global networks and institutions, and collaborating with those working to achieve complementary objectives under other international treaties and governance frameworks, is essential. As the global convener on health, WHO should be at the forefront of recognising overlapping priorities and bringing in networks and institutions that work across these objectives.

The impact of the WHO restructure announced in March 2019 will require ongoing monitoring.

Transforming the global economy for health and well-being

Transformation is required to overcome the current political economy that consistently undermines the objectives of the IHR by prioritising economic growth and profit over the equitable distribution of wealth and the provision of public goods and services. Gross Domestic Product (GDP) is a flawed system for measuring a successful economy, yet the national and global emphasis on GDP growth has facilitated the expansion of neoliberal policies, including the privatisation of healthcare and other public goods. A growing number of bilateral and regional trade agreements are further entrenching these principles.

An economic case for increased investment in health emergency preparedness and response must also include adequate support and recognition for the people who are expected to deliver those activities as part of the healthcare

PRE-PEER-REVIEW DRAFT

system. This economic case must therefore be made in parallel with the long-term drive for an economy that cares for and values the work of all its people: an economy that prioritises public good over profit, and the improved health and gender equality outcomes that will flow from it. Without a definitive change in how we view a successful economy, the economic case for investing in health outcomes will continue to be driven by the impact of health on the economy, and not the impact of the economy on health. This will leave those who offer little to the formal economy – those in the informal economy or those who undertake unpaid care work – most vulnerable.

A caring economy for health and well-being is needed to build a world that is free of health inequalities, where all people can receive both coverage and security through a readily accessible and affordable healthcare system.

Conclusion

The key message from the report is that preparedness for outbreaks of infectious disease has been strengthened since 1995, when the World Health Assembly requested WHO revise the IHR, and in particular, since the 2014-16 West Africa Ebola outbreak. Nevertheless, this report shows that many challenges remain, including ensuring that there are sufficient investments that are appropriately balanced between country preparedness and response activities and global readiness to respond should country capacity be exceeded.

The implications of this analysis centre on a number of issues: the need for greater financing, and the data to track the spending and outcomes of existing and future financing; the need for increased research on a number of areas; the role of WHO headquarters, regional and country offices and the relative distribution of resources between them; the role of WHO in coordinating and convening the large number of institutions and networks working in country preparedness and global readiness; and the great need to ensure that priority issues such as community engagement and empowerment, and gender equality are present not only in name, but are sufficiently resourced, monitored and integrated across sectors, evidence translated into practice, and their impact evaluated along with overall response evaluations.

While most interviewees noted the lack of over-arching governance and the need for more cohesion, monitoring and evaluation, the IHR already exist as a mechanism for such governance. As such, greater coordination of institutions and activities under the framework of the IHR is required by WHO: to strengthen its role of convening and coordinating partners, to ensure stronger, more cohesive support for capacity strengthening in countries and for global readiness to respond when country capacity is exceed, and to limit the implementation of travel and trade restrictions by working with countries to understand their motivations and provide evidence-based guidelines on the health and economic consequences of such restrictions. While our research did not suggest any new entities were required, the development of the Global Preparedness Monitoring Board offers a great opportunity for independent accountability and monitoring of WHO and all other institutions and networks involved in health emergency preparedness and response.

PRE-PEER-REVIEW DRAFT

Recommendations for the Global Preparedness Monitoring Board

Collect, collate and analyse data to build the economic case for investment

1. Establish, strengthen or integrate a tracking mechanism for financial and in-kind support to country preparedness and global readiness and response, and the coordination of these support activities. This tracking mechanism should include metrics for community engagement and empowerment, gender equality, and the integration of context into preparedness and response activities;
2. Produce an annual report summarising the state of global support for country preparedness and global readiness to respond, including case studies of successes and failures. Reports should be used to inform the development of an economic case to encourage countries and global supporters to invest more in preparedness activities, and track the relative contributions to global, regional, country and local level activities.

Convene and coordinate

3. Encourage WHO to strengthen its coordination of institutions and networks involved in country preparedness and global readiness to respond through regular convenings at the international, regional and country level, including more cohesive and cross-sectoral engagement in all phases of preparedness planning (e.g. the animal, environmental, economics, educational, political science, and social science aspects as well as the security and private sectors);
4. Encourage WHO to ensure clear roles and responsibilities of all actors and cost-effective coordination of resources at global and local levels;
5. Work with WHO and countries to support the development of costed national action plans, that are prioritised according to country needs and in partnership with communities. WHO should facilitate the streamlining of application and reporting procedures of donors to reduce the administrative burden on countries.

Strengthen, monitor and research preparedness and readiness activities

6. Encourage WHO and other institutions and networks to continue increasing their focus on training, supported by opportunities for employment, to strengthen global and local readiness capacity. Regular top-up training and integrated multi-sectorial simulation exercises are recommended to keep skills up to date;
7. Encourage WHO to employ multidisciplinary and non-health staff to assist in providing interdisciplinary support for countries;
8. Encourage WHO to work with ministries of health and IANPHI to systematically map all healthcare facilities in every country so as to establish a base platform of healthcare provision through which to deliver both coverage and security;

PRE-PEER-REVIEW DRAFT

9. Commission the mapping of preparedness and response needs against current capacities to handle multiple, concurrent large-scale outbreaks;
10. Commission research on the shift of response-institutions to local- and national-level readiness, including funding and training provisions, and how these non-state systems align with, strengthen or oppose, state-focused preparedness and response activities;
11. Encourage WHO to integrate new technology for health emergency response, and ensure ready access to available technologies at the point of onset of a health emergency;
12. Monitor the effectiveness of IASC protocols in calling on global support systems and resources for large-scale health emergencies;
13. Commission research on the organisational structures, systems and operational capacity for WHO collaboration and coordination at the global, regional, country and community levels for preparedness and response;
14. Commission research on the work being undertaken by WHO and others on health system strengthening in fragile and conflict-affected contexts with the aim of understanding current activities and gaps to filled.

Prioritise preventing unnecessary travel and trade restrictions

15. Work with Member states to continue to identify a warning system that calls attention to an outbreak with a risk of national or sub-regional spread that does not yet fulfil the requirements of a PHEIC;
16. Encourage WHO to implement a system of publishing online a list of countries and private companies that implement travel and trade restrictions beyond WHO temporary recommendations during health emergencies;
17. Commission research on the decision-making processes of countries and private companies that implement unnecessary travel and trade restrictions and the factors that influence them.

Reconsider the role of WHO

18. Encourage WHO to consider the proposition of further devolvement of human and funding resources from headquarters to country office and regional level;
19. Encourage WHO to continue monitoring the impact of their newly announced HR policies, with particular emphasis on policies that seek to transform gender inequalities and diversify country representation at all levels of WHO;
20. Commission research on the roles, responsibilities, relationships, activities and outcomes of the regional and country offices to support any devolvement process and the best possible re-allocation of resources;
21. Encourage WHO to strengthen the capacity of and relationships with deployable regional and country level partners; and explore how best to provide a surge workforce with a view to developing a business case to finance this workforce in the intervening years until regional response capacities are sufficient to take on this role.

PRE-PEER-REVIEW DRAFT

Work to transform the global political economy for health and well-being

22. Work with WHO to strengthen awareness of and attention to health emergency preparedness and response issues at key international events, such as annual G7 and G20 meetings, and among an expanded base of institutions and other support bodies, including international financial institutions;
23. Work with like-minded partners to reimagine the meaning of a successful economy: an economy that prioritises care over profit through the provision of public goods that lead to greater health security and coverage for all;
24. Investigate the necessary research and discussions required to target the international political economy beyond health and work with like-minded, non-health partners to transform current measures of national and global success from economic growth to the equitable provision and receiving of care.

PRE-PEER-REVIEW DRAFT

Contents

Executive Summary 2
Contents 12
Acronyms 13
Acknowledgements 14
Disclaimer 14
Introduction 15
1. The evolution of the global health architecture 19
2. Global support for country preparedness 30
3. Global readiness to respond 40
4. Travel, trade and declaring a PHEIC 52
5. WHO reform and its role moving forward 59
6. Transforming the political economy for health and well-being 71
Conclusion and recommendations 79
Appendices 83
Appendix 1: Glossary 83
Appendix 2: Implementation status of recommendations 85
Appendix 3: Methodology 98
References 101

PRE-PEER-REVIEW DRAFT

Acronyms

AHSC	Alliance for Health Security Cooperation
AMR	Antimicrobial resistance
CEPI	Coalition for Epidemic Preparedness Innovations
CSO	Civil society organization
EBRD	European Bank for Reconstruction and Development
FAO	Food and Agriculture Organization
GHRFC	Global Health Risk Framework Commission
GHS	Global Health Security
GHSA	Global Health Security Agenda
GPW	General Programme of Work
IANPHI	International Association of National Public Health Institutes
IASC	Inter-Agency Standing Committee
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IFRC	International Federation of the Red Cross
IHR	International Health Regulations
IHR MEF	International Health Regulations (2005) Monitoring and Evaluation Framework
IOAC	Independent Oversight and Advisory Committee
IPC	infection prevention and control
JEE	Joint External Evaluation
NAPHS	National Action Plan for Health Security
NPHI	National Public Health Institute
OIE	World Organization for Animal Health
PHEIC	Public Health Emergency of International Concern
PPP	Public-Private Partnerships
PSRT	Private Sector Roundtable
R&D	Research and Development
UHC	Universal Health Coverage
UN	United Nations
UNDRR	United Nations Office for Disaster Risk Reduction
UNEP	United Nations Environment Programme
UNFPA	United Nations Population Fund
UNGA	United Nations General Assembly
UNICEF	United Nations Children's Fund
UNSG	United Nations Secretary-General
UNWTO	World Tourism Organization
WEF	World Economic Forum
WCO	World Health Organization Country Office
WHE	World Health Organization Health Emergencies Programme
WHO	World Health Organization
WHO DG	World Health Organization Director-General
WTO	World Trade Organization

PRE-PEER-REVIEW DRAFT

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Disclaimer

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PRE-PEER-REVIEW DRAFT

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Introduction

The World Health Organization (WHO), as a member of the United Nations (UN) system, is governed first and foremost by the UN Charter and the UN Declaration on Human Rights. Health is a human right, and per the Declaration, is indivisible from all other rights. WHO has played the leading role in global and public health governance and technical advice since its inception in 1948.

Over more than 70 years, WHO programmes have evolved to provide expert technical advice on both communicable and non-communicable diseases, as well as leading health diplomacy on these issues at the annual World Health Assembly. Key to its functions, both historical and present-day, is its role in supporting country preparedness and response to infectious disease outbreaks, through the implementation of the International Health Regulations (IHR) core capacities. Beyond country preparedness is the necessary work of coordinating and operationalizing a response to large-scale outbreaks that may overwhelm country capacity or borders.

As WHO has evolved, so have the contexts in which its technical advice and capacity are needed: approximately 80% of high-impact epidemics now occur in fragile or conflict-affected states.[3] Increased forced migration, due to conflict, climate change and economic opportunities are a growing concern, while an increasing number of concurrent emergencies are straining the global response system. Countries are all more rapidly connected through trade and travel than ever before. Global and regional health emergencies are often complex and require cooperation with many local and global health and non-health organizations and networks.

The difficulties presented by this complexity are clear, most recently demonstrated by the 2014-16 West Africa Ebola outbreak and again in the ongoing Ebola outbreak in the Democratic Republic of Congo (DRC). The former exposed the myriad weaknesses in the global governance and coordination mechanisms for health emergency preparedness and response. As with the 2003 SARS epidemic and the 2009-10 H1N1 pandemic, the 2014-16 Ebola outbreak led to a flurry of expert panels and reports, dedicated to dissecting the response and proposing recommendations to improve health governance, coordination and response systems in time for the next significant outbreak. These reports were critical and direct but grounded in the hope that with reflection the world's preparedness for health emergencies could improve. Disappointingly, in 2017, a review of these reports showed that little action had been taken.[4]

The purpose of this report is to ensure that the governance and coordination lessons learned from previous health emergencies are heeded and used to

PRE-PEER REVIEW DRAFT

[3] World Health Organization, "Ebola Outbreak in the Democratic Republic of the Congo - 6 June 2019," accessed September 13, 2019, https://www.who.int/news-room/detail/06-06-2019-ebola-outbreak-in-the-democratic-republic-of-the-congo---6-june-2019.
[4] S. Moon et al., "Post-Ebola Reforms: Ample Analysis, Inadequate Action," *BMJ* 356 (2017).

improve preparedness and response capacities locally, nationally, regionally and globally.

For the purposes of this inaugural report, we focused on infectious diseases, but other public health emergencies, such as chemical, radio-nuclear or extreme natural events should be investigated in future reports.

This report utilises the three key aspects of the IHR: country preparedness; global readiness to respond; and the prevention and monitoring of travel and trade restrictions; as a framework for assessing the governance and coordination of health emergency preparedness and response. The role of WHO, and the impact of the international, political economy on health emergency preparedness and response are also investigated.

Defining preparedness, readiness and response



Figure 1: Health emergency management cycle

Preparedness and response exist as two phases within a broader cycle of health emergency management (Figure 1). Preparedness is typically considered to be all activities related to strengthening emergency management systems up until the point that an event is detected. At which point, the response phase is activated. For the purpose of this report:

- Preparedness is defined as national, regional and global support for country capacity and capability strengthening.
- Global readiness is defined as the global ability to quickly and appropriately respond where country capacity is exceeded.
- Response is defined as the immediate actions to save lives, protect property, and meet basic human needs.

A glossary of additional terms can be found in Appendix 1.

Reviewing and assessing the evidence

PRE-PEER REVIEW DRAFT

The analysis within this report began with a review of the implementation of 26 recommendations on governance and coordination from three key post-West Africa Ebola expert panels (Appendix 2).[5] It was then broadened by request of the Board to cover governance and coordination generally, including financing, and partnerships with non-health sectors. Researchers used a combination of desk-based reviews and independent stakeholder interviews with experts involved in preparedness and response from a range of organisations to expand the analysis (see Appendix 3 for methodology). Forty-three experts from WHO headquarters and regional offices, the Food and Agriculture Organization (FAO), the World Organization for Animal Health (OIE), the Inter-Agency Standing Committee (IASC), the International Federation of Red Cross and Red Crescent Societies (IFRC), the World Economic Forum (WEF) and other organisations, academics, and stakeholders were interviewed by independent researchers using a semi-structured topic guide. The interviews were particularly critical to understanding the effectiveness of new initiatives, the progress that has been made and the challenges that remain. The evidence reviewed and the information gained from the interviews were used with equal weighting to assess the status of implementation of the high-level recommendations and to inform the mapping of the global health architecture. Three members of the writing group independently assessed the information and discussed and agreed the implementation status decision.

Bringing this information together provided the necessary, independent information to critically assess the evolution and practice of health emergency governance and coordination structures. This report concludes by providing a number of recommendations emerging from the analysis. The response to and progress in implementing these recommendations should be subject to ongoing monitoring and evaluation.

At the time of writing (July 2019), the UN has just held an emergency meeting to discuss the Ebola outbreak in the DRC as the first confirmed case occurs in Goma.[6] From our analysis some of the components for a 'global safety net' have already been put in place, have been identified but are not yet established or, are lacking. We attempt to identify some key suggestions for the GPMB to consider as there is no time to lose in strengthening global preparedness and response. The recognition by many stakeholders of the need to emphasise preparedness and readiness for future health emergencies is well received. The benefit of this was borne out recently in the quick response by Ugandan authorities to imported cases of Ebola from the DRC. Increased investments and monitoring of activities for both country preparedness and the global safety net are vital to ensuring all people are secure from health threats and able to lead healthy lives. To do so, we challenge the Board to be

PRE-PEER REVIEW DRAFT

[5] Kikwete et al., "Protecting Humanity from Future Health Crises: Report of the High-Level Panel on the Global Response to Health Crises."; Moon et al., "Will Ebola Change the Game? Ten Essential Reforms before the Next Pandemic. The Report of the Harvard-Lshtm Independent Panel on the Global Response to Ebola."; National Research Council, "The Neglected Dimension of Global Security: A Framework for Countering Infectious Disease Crises," (Washington, DC: National Academics Press, 2016).

[6] World Health Organization, "High-Level Meeting on the Ebola Outbreak in the Democratic Republic of the Congo Affirms Support for Government-Led Response and UN System-Wide Approach."

bold in asking for immediate and sustained engagement at all levels of society, from local communities to international institutions.

PRE-PEER-REVIEW DRAFT

1. The evolution of the global health architecture

Summary

- Attention to health emergencies has substantially increased since the 1990s as a result of globalization and the potential for large-scale outbreaks to rapidly cross borders.
- Existing global health institutions and networks have strengthened their work on preparedness and response, and a number of new entities and cross-sectoral partnerships have been established. However, there is a lack of over-arching governance, coordination and information-sharing among these bodies.
- The revised IHR remains the chief governance framework for health emergency preparedness and response, with its focus on country preparedness, global readiness to respond, and the prevention and monitoring of trade and travel restrictions.

A defining moment in the evolution of health emergency preparedness and response was 1995 World Health Assembly (WHA) resolution to revise the 1969 International Health Regulations (IHR 1969). The 1995 resolution arose after three major infectious disease outbreaks in the 1990s (cholera in Peru, plague in India and Ebola in DRC). The outbreaks in Peru and India led to considerable trade and travel restrictions, against WHO recommendations.[7] These outbreaks highlighted the impact of globalization on infectious disease outbreaks: with increased movement of goods and people across borders, countries had become more economically entwined and more reliant on the health systems of one another to keep everyone safe. The 1995 DRC Ebola outbreak further highlighted the limitations of the IHR 1969 which focused on only six disease threats: cholera, plague, yellow fever, small pox, relapsing fever and typhus.

Nevertheless, by 2003 the IHR 1969 remained unchanged and SARS presented the repeated challenges of delayed reporting and travel and trade restrictions costing more than US$15.8 billion globally for an epidemic of, ultimately, only 8,096 probable and confirmed cases.[8] Despite the economic impacts, the curtailing of case numbers was due to successful leadership and coordination implementing public health measures at global and country level. Between 1995 and 2003, WHO had established a new way of working by increasing its dependence on global surveillance networks for the detection of infectious disease outbreaks, including new internet surveillance systems, and developing stronger partnerships with technical expertise for outbreak response through the Global Outbreak Alert and Response Network (GOARN). WHO strengthened its country offices with staff from regional offices and headquarters to work closely with the various ministries and teams leading national response efforts.

Three new networks (epidemiology, clinical, and laboratory) were established for the response. Existing WHO collaborating centres facilitated the sharing of

[7] A. Herten-Crabb and S. Moon, "Outbreak-Related Travel Restrictions: Health & Economic Consequences," (Geneva and London: Global Health Centre, the Graduate Institute of International and Development Studies and Centre on Global Health Security, Chatham House., 2017).
[8] Ibid.

PRE-PEER-REVIEW DRAFT

samples for identification and diagnostics. Twice weekly and *ad hoc* calls facilitated real-time exchange of information regarding natural progression of the disease, infection, prevention and control (IPC) measures, possible therapeutic approaches, etc. In late 2003, WHO planned for a regional clinical trial network should SARS recur, but it was not required and was never formalised.

Consequently, WHO's response to SARS was largely praised and the significant challenges of the outbreak caused by delayed reporting and trade and travel restrictions generated sufficient momentum to revise and adopt the IHR 2005, ten years after the original WHA resolution to do so. See Figure 2 for timeline of key events.

While the IHR 1969 focussed on attempting to stop the spread of specified infectious diseases at borders, the revised IHR 2005 requires countries to develop and maintain the core capacities necessary to effectively prevent, detect and respond to infectious disease outbreaks to keep their own populations safe and to prevent international spread. The revised IHR 2005 also requires global partnership when a PHEIC is declared, whereby global institutions and other support groups serve as a global safety net by providing technical and financial resources where country capacity is exceeded. To ensure that countries report outbreaks early, as required by the IHR 2005, WHO is mandated to make recommendations on travel and trade and to monitor and call for the withdrawal of any measures that exceed these recommendations.

The Global Financial Crisis that began in 2007 significantly weakened national economies leading Member states to cut WHO's budget by US$1 billion in 2011.[9] The 2014-15 budget saw further cuts to WHO's emergency response capacity: this contributed to reducing WHO to a technical agency.[10] As such, WHO's emergency response capacity had been significantly reduced by 2014 when the significance of the West Africa Ebola outbreak became clear. One WHO interviewee shared that their team of 30 in 2009 was cut to only eight by 2014. It was not until August 2014 that the WHO Director-General (DG) declared the West Africa outbreak a Public Health Emergency of International Concern (PHEIC): many considered this to be far too late as the outbreak had already spread widely.[11]

PRE-PEER REVIEW DRAFT

[9] Stephen J Morrison, *Global Health Policy in the Second Obama Term* (Center for Strategic & International Studies, 2013).; Stephanie Nebehay and Barbara Lewis, "WHO Slashes Budget, Jobs in New Era of Austerity," *Reuters*, May 19, 2011, https://www.reuters.com/article/us-who-idUSTRE74I5I320110519.; "WHO in Overhaul as Body Faces Losses," *Business Recorder* (blog), May 17, 2011, https://fp.brecorder.com/2011/05/201105171189099/.
[10] Sheri Fink, "Cuts at W.H.O. Hurt Response to Ebola Crisis.," *New York Times* 163, no. 56614 (2014).
[11] L. O. Gostin and R. Katz, "The International Health Regulations: The Governing Framework for Global Health Security," *Milbank Q* 94, no. 2 (2016).

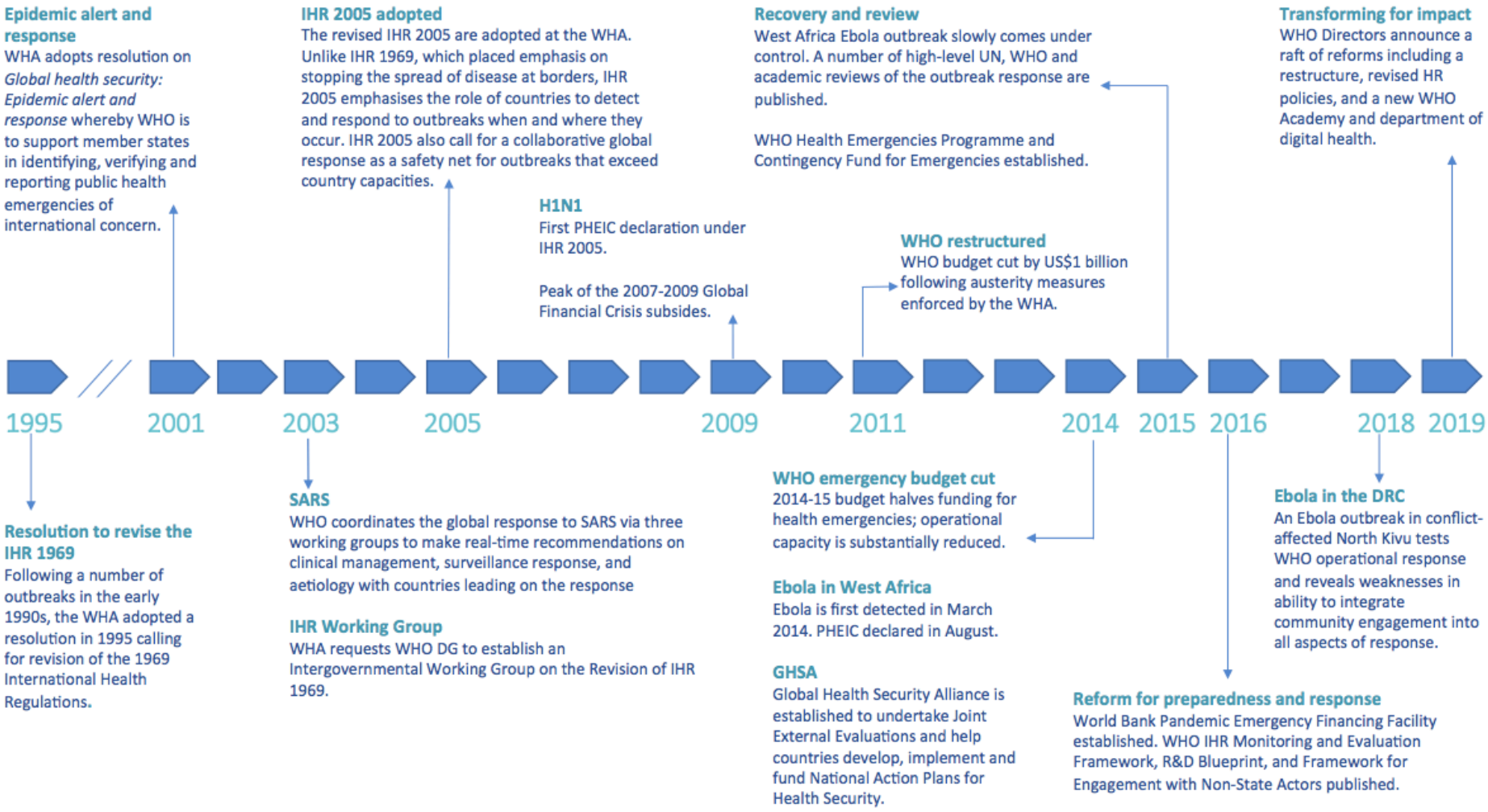


Figure 2: Timeline of key events in the evolution of the global health architecture, 1995-2019

Our analysis shows that most of the 26 governance and coordination recommendations from three high-level panels have not been implemented (37%) or implemented only in part (37%). Twenty-six percent have been implemented in full. However, this does not necessarily indicate a lack of progress – some recommendations have since been deemed inappropriate (such as a permanent UN-level group on global health crises), others may have been substituted with alternative arrangements, or the tasks require ongoing implementation and monitoring (such as the implementation of the Sustainable Development Goals (SDGs)). See Appendix 2 for the table of recommendations and their implementation status. Further reference is made to this table, where relevant, throughout this report.

Figure 3, below, is a schematic of the global health emergency preparedness and response institutions and support bodies, and their relationships, highlighting in particular, those that have been developed since 2014. These entities, their purpose and relationships to one another are described below.

The evolving landscape of preparedness and response actors

WHO is a specialised technical agency of the UN. WHO receives funds from Member states, other UN agencies; philanthropic organisations such as the Bill & Melinda Gates Foundation; intergovernmental organisations such as the European Commission; partnerships such as Gavi; international financial institutions such as the World Bank, and development banks such as the African and Asian Development Banks; research funders such as the Wellcome Trust; civil society organisations, academic institutions and the private sector. The World Bank, Member states, UN agencies and others such as Gavi, the European Commission and the African Development Bank are key current funders of WHO programmes to prevent and control outbreaks, and for Country Health Emergency Preparedness to meet the commitments of the International Health Regulations. The Nuclear Threat Initiative (NTI) WHO Global Emergency Outbreak Response Fund (est. 2002), which supported WHO to deploy teams of epidemiologists to the site of disease outbreaks around the globe within 24 hours was merged with the WHO Rapid Response Account (est. 2009) to create the **Contingency Fund for Emergencies** (CFE) in 2016. The CFE releases funds to WHO for surge capacity to immediately respond to health emergencies before they escalate into wide-scale threats. The **WHO Health Emergencies programme** (WHE) was also established in 2016, along with its monitoring body the Independent Oversight and Advisory Committee (IOAC). The WHE provides technical and operational capacity for health emergency preparedness and response. The **World Bank Pandemic Emergency Financing Facility (PEF)** was also created in 2016, and provides funding directly to countries upon their request, following review and recommendation to fund by the **WHO Strategic and Technical Advisory Group on Infectious Hazards (STAG-IH)**.

PRE-PEER-REVIEW DRAFT

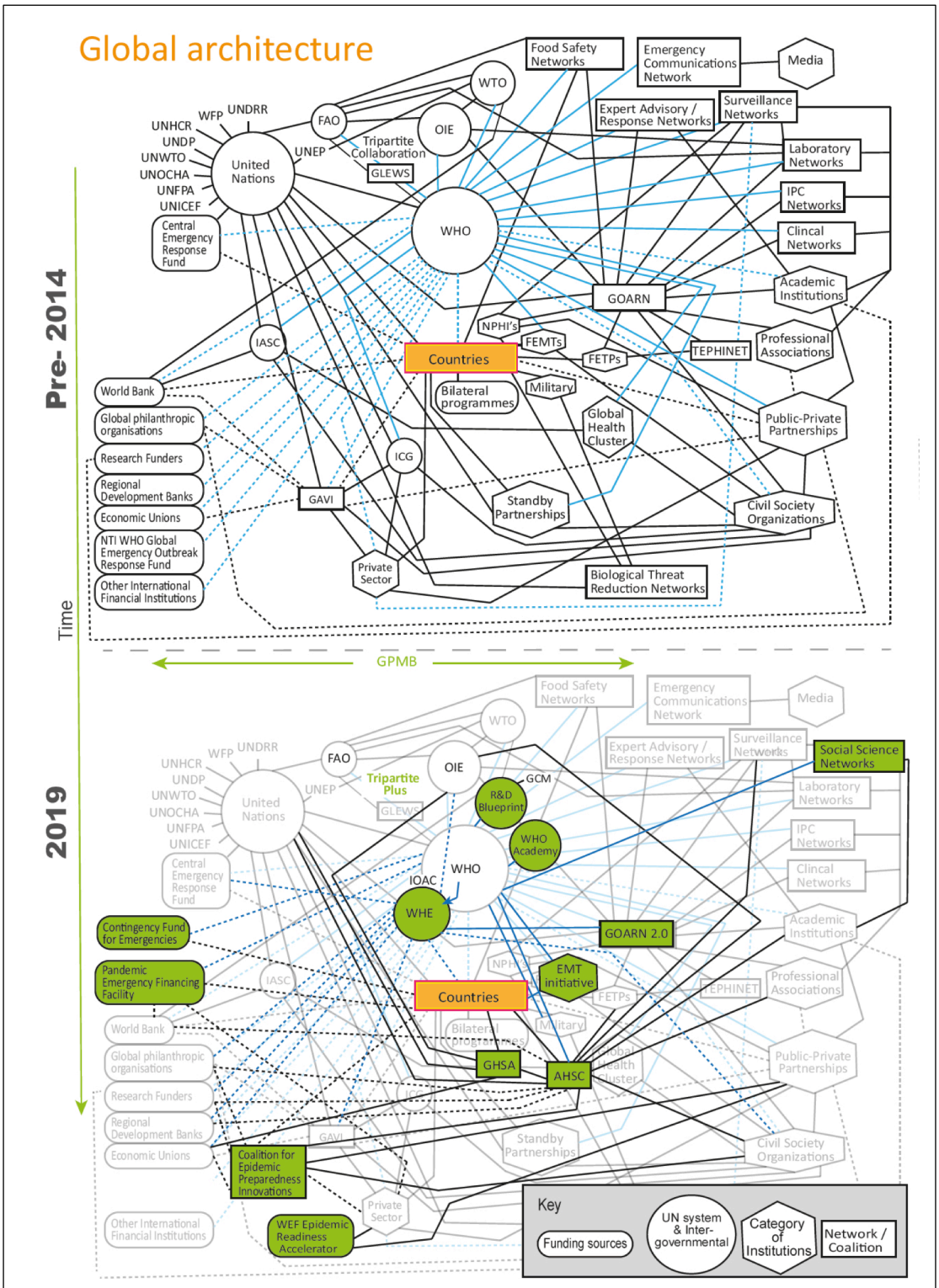


Figure 3. Schematic map of global architecture of institutions and networks supporting preparedness and response in 2014 and 2019

This schematic map explores the complex array of interactions between different actors in the field of emergency preparedness and response to infectious diseases, and the addition of new initiatives since the post-Ebola West Africa reforms (2019 Map; highlighted in green). Given the hundreds of actors and organisations working in this field globally, it is not intended to be an exhaustive map of all possible connections – as to attempt such a mapping would likely produce an unreadable web. Rather, the map illustrates key partnerships and shows the networks contributing to supporting countries in detection, preparation and response to outbreaks.

One of the most significant post-2014 reforms of WHO to support emergency preparedness, response and recovery is the establishment of the **World Health Emergencies programme (WHE)**. The WHE addresses the full risk management cycle: prevention and preparedness, emergency response and recovery. Further detail on the WHE's activities are provided in the sections below.

Further reforms include the establishment of the R&D Blueprint and most recently the WHO Academy. The **R&D Blueprint** is a global strategy and preparedness plan that allows the rapid activation of R&D activities during epidemics. Its aim is to fast-track the availability of effective tests, vaccines and medicines to save lives and avert large scale crisis. Research and development (R&D) is critical to country preparedness and global readiness to respond. WHO utilised its convening power to bring different R&D groups together. Subsequently the R&D Blueprint was published in 2016 and the Global Coordination Mechanism (GCM) was launched in 2017. The GCM provides a means of convening and informing the research community, funders and other stakeholders, which has had a positive impact on R&D coordination.

The **WHO Academy** is a major new initiative to substantially increase professional development opportunities for WHO staff, including a cutting-edge simulation centre for health emergencies. The Academy will also help to strengthen the capacity of Member States by "training the trainers" in how to implement WHO's norms and standards at country level.

WHO Technical Networks form part of the global architecture to prevent, detect, prepare and respond to outbreaks and emergencies. These include the Emerging and Dangerous Pathogens Laboratory Network (EDPLN); the Emerging Diseases Clinical Assessment and Response Network (EDCARN); and the Global Infection Prevention and Control Network (GIPCN). The Emergency Communications Network (ECN) (est. 2013), functions to train communication officers within WHO and partners, ready for deployment during emergencies. Other expert advisory networks include those such as the WHO Virtual Interdisciplinary Advisory Group on Mass Gatherings (VIAG). These networks comprise technical experts from governmental and non-governmental organisations, academic institutions, WHO and other stakeholders, acting to provide technical support to Member States to prepare and respond to outbreaks or epidemics. The EDPLN works in partnership with the **World Organisation for Animal Health (OIE)** and **UN Food and Drug Organisation (FAO)**, ensuring coordination between actors working across human and animal health. The WHO department of Food Safety and Zoonoses (FOS), also provides leadership in this area. The WHO International Food Safety Authorities Network (INFOSAN), is a network of national food safety authorities managed jointly by FAO and WHO, with the secretariat within WHO.

The Tripartite agreement. Taking a One Health approach to preparedness and response to outbreaks, the OIE, FAO and WHO sought to share responsibilities and strengthen coordination of activities; formalised through the **'Tripartite agreement' or Tripartite collaboration**. The **Global Early Warning System (GLEWS)** is one of the mechanisms used by the Tripartite for monitoring data from existing event-based surveillance systems and to track and verify relevant animal and zoonotic events. This mechanism

PRE-PEER-REVIEW DRAFT

brings together expertise, data, functional networks, operational systems and stakeholders to improve inter-organizational coordination and support to Member countries for detecting, preventing and controlling threats to health and the food chain.

The '**Tripartite plus**' is an informal relationship between the Tripartite collaboration and other multilateral organizations as required, for example, the UN Environment Programme (UNEP) on environmental health matters, or the World Trade Organization on trade matters.

WHO's global influenza surveillance and response system (WHO GISRS) have conducted global influenza surveillance since 1952. This system functions as a global mechanism of surveillance, preparedness and response for seasonal, pandemic and zoonotic influenza. National Influenza Centres, six WHO Collaborating Centres (**national public health institutes** (NPHIs) and academic institutions) and four Essential Regulatory Laboratories, form part of this system. Following concerns over H5N1 outbreaks, in 2007 WHO and Member states started to work with industry, civil society organisations and other stakeholders to develop a Pandemic Influenza Preparedness Framework (PIP Framework). The PIP Framework seeks to improve pandemic influenza preparedness and response by improving and strengthening the WHO GISRS, through sharing of viruses, vaccines and other benefits concerned with influenza viruses of human pandemic potential. The PIP Framework, is primarily funded by private industry, with key contributors: Sanofi Pasteur, GlaxoSmithKline (GSK), and Hoffmann-La Roache and Co Ltd.

All of the above networks (except the ECN) are also members of the Global Outbreak Alert and Response Network (**GOARN**). Established in 2000, GOARN is a network of over 200 technical institutions (governmental, non-governmental, and academic), other networks and UN agencies, that respond to acute public health events with the deployment of staff and resources to affected countries. GOARN aims to deliver rapid and effective support to prevent and control infectious disease outbreaks and other health emergencies, when requested by countries. National Public Health Institutes, such as the US Centres for Disease Control and Prevention (US CDC); National Institute for Communicable Diseases (NICD), South Africa; Public Health Agency of Canada (PHAC); Public Health England (PHE) and China CDC are active members of the network. Regional and global actors, such as the European Centre for Disease Prevention and Control (ECDC) and European Mobile Lab (EMLab); Institut Pasteur laboratories; the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), and WHO Regional Offices also deploy experts through GOARN. **Field Epidemiology Training Programmes** (FETPs) such as the African Field Epidemiology Network (AFENET); Training Programmes in Epidemiology and Public Health Interventions Network (TEPHINET); European Programme for Intervention Epidemiology Training (EPIET); the Eastern Mediterranean Public Health Network (EMPHNET); and ARM (Australian Response Master of Applied Epidemiology) Network are also members. Other members include UN agencies such as UNICEF, organisations such as Médecins Sans Frontières (MSF) and International Federation of Red Cross and Red Crescent Societies (IFRC), and academic institutions such as the National University of Singapore, Tulane School of Public Health and the

PRE-PEER-REVIEW DRAFT

Robert Koch Institute. GOARN does not comprise members from the private sector.

GOARN 2.0 was launched in 2017 with a renewed focus on outbreak and emergency preparedness and capacity development for outbreak response. Workstreams have been developed on training and rapid response, outbreak research and field tools, alert and risk assessment and governance.

In response to a gap in social science coordination and capacity in outbreak preparedness and response, a number of new **social science networks** have launched since 2014. For example, the Social Science in Humanitarian Action platform (est. 2017), and more recently Sonar-Global. These initiatives seek to establish networks of social scientists to rapidly provide insight, analysis and advice to improve the social and communication dimensions of emergency response and preparedness. **Civil society organisations** such as MSF and the IFRC also support crisis-affected countries as part of the **Global Health Cluster** system, combining their technical, operational and coordination abilities to support national health response. The Cluster approach was developed by the **Inter-Agency Standing Committee (IASC)** to address gaps and to increase the effectiveness of humanitarian response by building partnerships. In 2005, the Global Health Cluster was created as part of this system. The IASC is the highest-level humanitarian coordination forum of the UN; acting to ensure coherence of humanitarian preparedness and response efforts. The committee consists of UN agencies, and standing invitees including the World Bank, IFRC and representatives of non-governmental organisations (InterAction).

Some other civil society actors, and a number of government humanitarian agencies, also provide support as **WHO Standby Partners**. These are organisations with networks of rapidly deployable technical professionals, with skills and capacity to meet WHO and Health Cluster needs in emergency work.

Foreign Emergency Medical Teams (FEMTs) provide acute assistance to countries, providing clinical care in response to emergencies. In 2015, the **WHO Emergency Medical Teams (EMT) Initiative** shifted its focus to preparedness and readiness, seeking to strengthen the quality assurance, quality improvement and coordination of national EMTs, by developing standards, training and a classification (registration) system for trained and accredited EMTs. The EMT initiative focuses on capacity strengthening, national preparedness programmes with a combined clinical and public health approach.

A host of **Public-Private Partnerships (PPPs)** exist, including those for product development, to develop and bring vaccines, microbicides, therapeutics and diagnostics to the field. One example is The Foundation for Innovative New Diagnostics (FIND) (est. 2003). FIND is a WHO Collaborating Centre, which works with more than 200 academic, industry, governmental, and civil society partners worldwide, with a focus on diagnostics. FIND works closely with the Gavi Alliance, and recently the **Coalition for Epidemic Preparedness Innovations (CEPI)**, in order to identify opportunities for integrating diagnostics into existing mechanisms for vaccine development and deployment during outbreaks.

PRE-PEER-REVIEW DRAFT

Gavi, the Vaccine Alliance (est. 2000) is a global vaccine alliance of public and private sector partners, with the goal of creating equal access to new and underused vaccines for children in resource-poor settings. Gavi seeks to increase equitable uptake and coverage of new and existing vaccines; support health systems strengthening; improve the sustainability of national immunisation programmes; and ensure on-going sustainability, affordability and availability of vaccines. Civil society organisations work with Gavi in health system strengthening, implementing immunisations programmes, and advocacy. Other partners include BMGF, UNICEF, WHO, developing and industrialised country governments and pharmaceutical industries. Gavi is also a key funder of WHO, and a WHO strategic partner for IHR strengthening.

Provision of emergency vaccine and antibiotic supplies during major outbreaks is coordinated by the **International Coordinating Group on vaccine provision (ICG)** (est. 1997). Working closely with vaccine producers, through WHO and UNICEF, the ICG monitors its vaccine global stock levels for cholera, meningitis and yellow fever to ensure availability of sufficient supply to respond to disease outbreaks when they occur.

As highlighted above, **private sector** organisations are part of the global architecture for emergency preparedness and response, not only through financial support to WHO and other agencies, but through direct involvement in the field. One example is the pharmaceutical industry: the International Federation of Pharmaceutical Manufacturers and Associations (IFPMA) is represented on the board of Gavi. The IFPMA represents more than 55 members of national industry associations, including Johnson & Johnson, GlaxoSmithKline, Merck & Co., Novartis, Sanofi Pasteur, the vaccines division of Sanofi-Aventis and Pfizer. These companies have worked with Gavi to reduce prices, produce and deliver vaccines to eligible countries. For example, in 2015 Sanofi Pasteur committed to expand the production of yellow fever vaccine to address chronic shortages and offer this at reduced prices to eligible countries. Developing Countries Vaccine Manufacturers Network (DCVMN), which represents 44 companies from 16 countries, also has a seat on the Gavi board.

The multitude of other **private sector** organisations with a role in emergency preparedness and response is vast and includes actors such as the aviation and maritime industry, communications companies, logistics companies, and extractive industries to name a few.

Bilateral programmes include the financial and in-kind technical support for preparedness and response activities arranged between countries.

The **military** has long been involved in preparedness and response to health emergencies, not least the US military through its R&D for protection and treatment from infectious diseases in locations where US troops are deployed and Western pharmaceutical companies are not otherwise financially incentivised. Following the 2001 deliberate release of anthrax in the USA, the US government increased funding into the development of medical countermeasures to anthrax and other diseases of potential biological weapons threats. One of the results of this work was an Ebola vaccine in 2014 that had already gone through animal trials and some human trials. The role of the military in responding to health emergencies, both medically and

PRE-PEER-REVIEW DRAFT

providing logistics support, has achieved much greater prominence since the 2014-16 West Africa Ebola outbreak. As an arm of the state, the military may be called in to provide logistics support, medical staff, or provide security to responders. Foreign military medical teams have also been flown in to assist large-scale outbreaks where local capacity has been or is near to being exceeded.

In addition to preparedness for naturally occurring infectious disease threats, the risk of deliberate or accidental release of biological agents has risen further up the global political agenda in recent years. **Biological threat reduction networks** include initiatives such as the Nuclear Threats Initiative (NTI) (est. 2001), which seeks to identify gaps in the capacity of countries to prevent, detect and respond to high consequence biological events, and to advocate for governments and other stakeholders to fill them. The OIE's 2015 Biological Threat Reduction Strategy also seeks to strengthen existing surveillance systems, biosafety and biosecurity, taking a One Health approach.

Recognising that global health security is a shared responsibility that cannot be achieved by a single institution or sector, the **Global Health Security Agenda (GHSA)** was launched in 2014. The GHSA brings nations together to strengthen global and countries capacity to prevent, detect and respond to naturally occurring, deliberate or accidental infectious disease threats. In addition to individual countries, advisory partners include WHO, FAO, OIE, UN Office for Disaster Risk Reduction (UNDRR) and economic unions (Economic Community of West African States, and the European Union). As part of the GHSA, the Joint External Evaluation (JEE) process seeks to measure countries individual status and progress in building capacities to prevent, detect and respond to infectious disease threats, in accordance with the agreed GHSA targets and in support of implementing the IHR. The **Alliance for Health Security Cooperation (AHSC)** (previously the JEE Alliance, est. 2016) is a platform for facilitating multisectoral collaboration on health security capacity building and IHR implementation.

A number of other new partnerships and collaborations have been created to increase communication and cooperation between stakeholders. These include the World Economic Forum's work with the private sector and its **Epidemic Readiness Accelerator**, a public-private engagement platform to prepare for, and respond to, infectious disease outbreaks that have regional and global health, security, and economic implications, and to address challenges to public-private cooperation. It also facilitates communication with WHO during health emergencies and has five workstreams: travel and tourism; supply chain and logistics; legal and regulatory; communications and data innovations.

These advances have resulted in multi-polar and polycentric governance regimes. Positive points can be taken from the diverse infrastructure that has been developed,[12] however many interviewees noted the lack of over-arching governance of health emergency institutions and networks, and the need for more coordination, cohesion and data around what each was contributing to

[12] David Held et al., "Gridlock, Innovation and Resilience in Global Health Governance," *Global Policy* (2019).

PRE-PEER-REVIEW DRAFT

preparedness and response. Interviewees welcomed the GPMB for taking on this role.

It must not be forgotten, however, that health emergency preparedness and response are governed by the framework of the IHR:[13] its focus lies on country preparedness, global readiness to respond, and the monitoring of unwarranted trade and travel restrictions in the event of a PHEIC declaration. However, it is clear that the IHR is not yet being employed to its fullest extent. These challenges are discussed in greater detail below.

PRE-PEER-REVIEW DRAFT

[13] Olushayo Oluseun Olu, "The Ebola Virus Disease Outbreak in West Africa: A Wake-up Call to Revitalize Implementation of the International Health Regulations," *Frontiers in public health* 4 (2016).

2. Global support for country preparedness

Summary

- The 2014-16 West Africa Ebola outbreak catalysed support for country preparedness activities. However, a number of challenges to increasing country preparedness from a governance and coordination perspective were identified.
- Greater governance, coordination and monitoring of institutions and partnerships contributing to preparedness is needed, and WHO should increase its role as a coordinator of institutions and networks involved in preparedness activities.
- Despite the increased focus at the global level, country preparedness ultimately lies in the hands of countries. Preparedness activities should be coordinated from a country needs perspective and coordinated between partners to optimise resources and outcomes. This can be achieved through the development of costed national action plans that can be linked to regional and global financial and technical support, and regularly reviewed and updated to ensure sustainability.
- Investing in country preparedness necessarily requires investing in a strong health workforce: training of new staff, retaining existing staff by providing good, well-paid jobs with pathways for career progression, and ensuring employment policies are gender sensitive.
- It is essential that communities be active participants in the planning and implementation of preparedness activities to ensure their needs are met. Where possible, preparedness activities should be incorporated horizontally into health systems so as to strengthen rather than detract from day-to-day service delivery.
- Devising new methods for maintaining health systems in fragile and conflict-affected countries is also necessary to ensure communities are protected and health emergencies are quickly detected and contained.
- New tools developed by WHO aim to improve the monitoring of financial and technical resources available, to support countries in the implementation of their national action plans for health security. Further evaluation is required to demonstrate the impact on preparedness.

PRE-PEER-REVIEW DRAFT

Coordinating global support for country preparedness

The 2014-16 West Africa Ebola outbreak had a profound effect on the willingness of global networks and institutions to prioritise preparedness activities, in addition to maintaining response capacities. The global health community has recognised that to prioritise preparedness, more needs to be done at the country level, so that the global level becomes engaged only when resources at the country and regional levels are exhausted or requires a coordinated approach when more than one country affected. Subsequently, a growing number of global institutions and organizations are involved in supporting country preparedness (Figure 4).

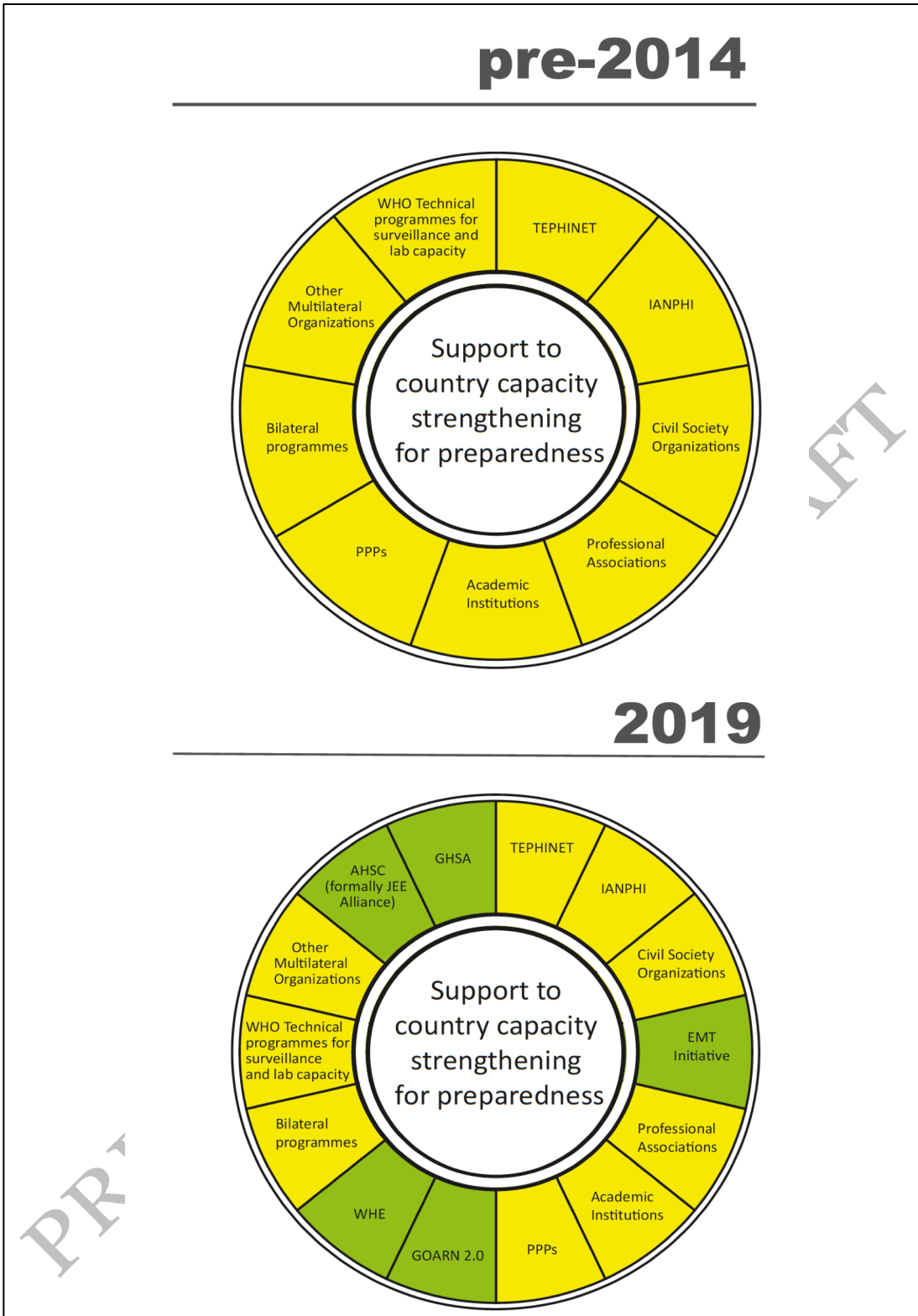


Figure 4. Global support for country preparedness
Global institutions, sectors and networks working in support of country preparedness. *Green indicates organizations that were either newly developed (such as AHSC and GHSA) or have incorporated preparedness into their activities since 2014 (such as GOARN).*

Creating a stable and functional governance architecture for the multitude of organizations, initiatives and activities contributing to preparedness is a significant challenge, and gaps exist between the global, regional and national levels in terms of effective and coherent coordination. In 2014, global support

to country preparedness included WHO technical programmes for surveillance and laboratory capacity; other multilateral organizations such as OIE and FAO; civil society organizations (CSOs) and academic partnerships working on health systems strengthening; public-private partnerships such as Gavi working on vaccine delivery; the International Association of National Public Health Institutes (IANPHI) for the development and strengthening of NPHIs; professional associations such as the International Council of Nurses, the International Epidemiological Association, and the Association of Medical Doctors of Asia, supporting general professional and workforce capacity development; TEPHINET, providing support for country (and regional) field epidemiology training programmes; bilateral programmes such as those supported by the US and China CDCs.

By 2019, the GHSA and AHSC had been established, contributing funds, technical expertise and political support for country preparedness. The GHSA has also facilitated private sector engagement for increased diversity of public private partnerships (see Box 1). The EMT Initiative supports the development of national emergency teams that can be deployed in-country and globally as needed, and GOARN 2.0 have prioritised preparedness activities and training for national response workers. This is principally achieved through training and developing linkages with local and national-level networks and CSOs. Further research is needed to understand what is happening across the preparedness landscape, share best practice examples, and discuss the implications of channelling funds for health emergency preparedness and response through non-state actors that would not be monitored by existing state-focused systems like the WHE IHR Monitoring and Evaluation Framework (IHR MEF).

Box 1: Working with the private sector in health emergencies

Since the West Africa Ebola outbreak, WHO has increasingly engaged with the private sector and their potential role in health emergency preparedness and response. There are three main ways that the private sector currently engages. Firstly, in their long history of developing and trialling vaccines, antibiotics and other medicines, a role that was particularly prominent during the West Africa Ebola outbreak. Some companies have been incorporated into the Global Coordination Mechanism for Research & Development (R&D), which seeks to consolidate research efforts to a list of priority diseases.

Secondly, private sector companies need to have plans in place for how they will keep staff and customers safe and reduce the risk of transmission and disease importation into new areas while maintaining operations to the affected area. The World Economic Forum (WEF) aims to facilitate both the development of these plans, and communications between the private sector and WHO in the event of an emergency through its Epidemic Readiness Accelerator. There are currently 100 companies assigned across the five work streams: travel and tourism, supply chain and logistics, legal and regulatory, communications, and data innovations.

And thirdly, the increasing role the private sector in closing gaps in country preparedness. This is currently being facilitated via the Private Sector Roundtable (PSRT), associated with both the Global Health Security Agenda (GHSA) and the Alliance for Health Security Cooperation (AHSC). At the 2019 World Health Assembly (WHA), the first memorandum of

PRE-PEER-REVIEW DRAFT

understanding between the PSRT and a member state, Uganda, was signed, whereby the PSRT will work with the government to determine where the private sector can address the gaps identified during Uganda's Joint External Evaluation (JEE).

While some welcome private sector investment in health emergency preparedness and response, there is still reason to proceed with caution and ensure risks are managed appropriately. Negative examples of private sector involvement do exist, for example pharmaceutical companies have offered improved diagnostic tests on the condition that all diagnostic results are sent back to the company, which did not take sufficient account of data privacy and data ownership concerns. The relationship between the public and private sectors is currently directed by the public sector, including WHO and Member states, to identify public sector needs that the private sector attempts to fill. This appears to strike a positive balance between the two sectors and ensures that public good continues to be prioritised over profit. However, the impact of the PSRT remains to be seen. Finally, one interviewee recommended the creation of a global framework to support and optimise public-private cooperation. Such a framework could help ensure that private sector involvement continues to be focused on country needs and priorities.

At the national and subnational level, interviewees commented on the inherently political process of the external evaluation process now embedded within the IHR MEF. This process requires sustained political commitment and buy-in to the values of global health security, transparency of reporting and mutual accountability, which may be perceived to conflict with national sovereignty. Nevertheless, some of those countries who have chosen not to participate in the external evaluation process are still developing National Action Plans for Health Security (NAPHS), which has been recognised and welcomed. One interviewee spoke of the added complexity of coordinating subnational preparedness in decentralised or devolved systems of governance, and the need to manage this by providing training and mechanisms of communication in each state or province. Engaged and regular monitoring of these national actions plans is needed.

Several interviewees identified community engagement as key to effective preparedness activities. In particular, many felt that building trust through community engagement at the preparedness phase would facilitate smoother response efforts. Two interviewees felt that there had been an increase in social science research but that there was a need to ensure this research was translated into practice, through better integration with preparedness activities.

WHO plays a pivotal role in harmonizing and governing country efforts towards preparedness, particularly through its Strategic Partnerships for IHR and Health Security (SPH) Portal established in 2015. The Portal centralizes information on the overarching global health security landscape, in terms of key initiatives and activities, investments, and IHR MEF data and reports, to align and harmonize ongoing efforts from the global to national levels, and strengthen health emergency preparedness. To date, the Portal has visualized more than 1800 partner and donor health security investments, and the activities of 80 SPH partners worldwide. Nevertheless, many interviewees felt that WHO needed to increase its role in publicly convening and coordinating

PRE-PEER REVIEW DRAFT

the many organizations and networks involved in preparedness, at the international, regional and country levels. Interviewees felt that the GPMB should contribute to the over-arching monitoring of these initiatives, with publicly available reports highlighting inputs and outcomes that could be used to better align contributions to preparedness and build a strong economic case for increased and sustained investments.

There is also increasing focus on regional collaborations to build national capabilities and capacities, for example between the WHO AFRO office and Africa CDC, as well as technical teams ready to deploy regionally. Coordination of established and emerging institutions and other support groups needs to account for varying stages of development (for instance the Africa CDC was established in 2017 and is now building up the capacity of five Regional Collaborating Centres across the five sub-regions of Africa), and allow the space and support for them to reach their potential. Two interviewees from the European region discussed the centralised system of public health operations in Europe: they attributed the strength of the IANPHI Europe network to the number of established and capable NPHIs and their coordination mechanisms, beyond the collaboration of WHO EURO, the European Union and the European CDC. One interviewee suggested that centralised public health coordination at the regional level, as a model, is worth exploring in other contexts. To that effect, the Africa CDC recently finalized a Framework for the Development of National Public Health Institutes in Africa, and is due to release two subsequent tools—a scorecard for monitoring and evaluating NPHI development, and an NPHI legal framework.

Prioritising preparedness

Despite the increased attention to and investment in preparedness, several interviewees emphasised the need to strengthen support for country prioritization processes to drive better investment strategies and the efficient allocation of resources (independent of external assistance).

Interviewees highlighted that countries must take greater responsibility and ownership of national preparedness; pull together separately funded, and often disease-specific, programmes; and negotiate opportunities with key donors and funders, including Gavi, the World Bank and the Global Fund, in a more coordinated way. NPHIs maintain the core public health functions essential to effective monitoring of national health security and preparedness and as such, are increasingly being positioned as the main national agency to monitor, evaluate and report on various aspects of national and subnational preparedness. A solution put forth by one interviewee is the creation of an IANPHI-coordinated peer-to-peer support network of NPHIs, to facilitate institutional linkages and exchange to identify capacity gaps and develop appropriate programmes. WHO is primed to facilitate this process and support these institutions in rationalizing their application and reporting criteria where possible, as these requirements create significant administrative burdens on countries.

Many interviewees recognised a need to move away from traditional vertical silo-working to a model of horizontal integration across departments and sectors in a multi-sectorial approach at country, regional and global level. Moreover, several interviewees focused again on engaging and empowering

PRE-PEER-REVIEW DRAFT

national actors and communities, ensuring that all preparedness activities are designed from community, country and regional needs, to increase the likelihood that activities are culturally appropriate, acceptable and sustainable.

The development of costed NAPHSs have been a step forward, however one interviewee commented that these Plans do not necessarily help countries prioritise gaps once they have been identified. Three interviewees highlighted the difficulties in prioritising health emergency preparedness in countries where endemic diseases and maternal and child health issues may constitute much larger problems on a day-to-day basis than a potential outbreak of a high-mortality pathogen. There is a need to highlight and address difficult trade-offs when building health emergency preparedness and response capacities.

There are opportunities to link agendas to improve the governance of preparedness and a number of interviewees discussed embedding global health security efforts in broader health systems strengthening goals, to ensure sustainability and longevity of investments in preparedness, and avoid making global health security another vertical programme. Health emergency preparedness activities are often contrasted with efforts to achieve Universal Health Coverage (UHC): two goals that are, as one interviewee described, often led and implemented by different institutions at the global level, yet are typically delivered by the same people at the level of the community and the health clinic (Box 2).

Key to achieving both global health security and UHC is the health workforce, and the resources to support it, required to deliver both. One interviewee highlighted the vital role of the health workforce in translating global objectives to national capacity and technical expertise. WHO's *Global strategy on human resources for health: Workforce 2030* highlights the expected needs-based shortage of 18 million health workers, largely in low- and middle-income countries, by 2030.[14] Although it was stressed that a focus should be to use local staff or staff deployed from neighbouring countries to support response efforts, some raised concerns that using regional staff for deployment posed a risk of depleting already scarce healthcare resources from other low- and middle-income countries. Moreover, there is a risk that healthcare workers would not return to their home country post-deployment due to increased international opportunities. Investing in country preparedness necessarily requires investing in a strong health workforce: training of new staff and retention of existing staff by providing good, well-paid jobs with pathways for career progression are key issues.

In March 2019, the WHO Global Health Workforce Network's Gender Equity Hub released two reports on the state of gender equity in the health workforce. The reports showed systematic workplace gender biases, inequities, and discrimination: women health workers are lower paid, and sometimes unpaid, tend be of lower status and are subject to sexual harassment.[1]As women comprise roughly 70% of the healthcare workforce globally, building and strengthening national healthcare systems will also

PRE-PEER REVIEW DRAFT

[14] Richard M. Scheffler et al., "Forecasting Imbalances in the Global Health Labor Market and Devising Policy Responses," *Human Resources for Health* 16, no. 1 (January 11, 2018): 5, https://doi.org/10.1186/s12960-017-0264-6.

require the development of gender transformative policies, including gender mainstreaming within and outside of the healthcare system, and the development and implementation of policies which address gender-based violence and workplace harassment.[15]

Box 2: Global Health Security and Universal Health Coverage

There are currently two prevailing frameworks through which global health, and WHO through its 13th General Programme of Work (GPW), operate: Universal Health Coverage (UHC: publicly-funded health services for all based on the principles of human rights and equity), and Global Health Security (GHS: activities required to minimize the risk and impact of health emergencies). Lessons learned from Ebola responses have shown that these objectives, often conceived of and delivered by different and disparate institutions, can lead to fragmentation and weaknesses in the system.

In particular, it has been noted that health gains in Guinea, Sierra Leone and Liberia prior to the Ebola outbreak were largely due to vertical programmes improving specific aspects of health, such as maternal mortality and immunization. However, the success of these vertical programmes occurred at the expense of strengthening the health system more broadly. Indeed, the Ebola outbreak was so devastating to already weakened health systems, that gains from vertical system programmes were quickly lost.[16]

A Lancet Commission on the possibilities and risks of integrating UHC, GHS and health systems work is currently underway and many of our interviewees regarded this as a priority area for health emergency preparedness and response.

Two interviewees also highlighted the issues with vertical programming via examples from the HIV/AIDS response, where some HIV/AIDS clinics in a country in sub-Saharan Africa, had been observed openly refusing to serve patients with non-HIV-related illnesses. Another spoke of the potential trade-offs made between taking the "shorter path" of saving many lives that would otherwise have been taken by AIDS, instead of investing in a broad platform of health systems that would have benefitted many others across the spectrum of illness and disease. There may also be advantages for people living for longer with HIV from integrated care. Moreover, the West Africa Ebola outbreak highlighted how increased focus, financing and treatment for disease outbreaks can overburden the local health system, resulting in limited resources and attention from other health services, and in increased mortality from other health conditions, for example, among pregnant women.

The interviewee highlighted the need to bring these conversations to the forefront and have honest, difficult discussions about these trade-offs. Another was concerned that monitoring health security competencies through the IHR MEF may lead to distortions of health system capacities leaving gaps in frontline service delivery. This interviewee highlighted that this risk contradicts the initial conception of GHS which is based on the premise that

PRE-PEER-REVIEW DRAFT

[15] World Health Organization, "Global Strategy on Human Resources for Health: Workforce 2030," WHO, accessed September 13, 2019, http://www.who.int/hrh/resources/globstrathrh-2030/en/.
[16] Marc Dubois and Caitlin Wake, "The Ebola Response in West Africa: Exposing the Politics and Culture of International Aid," (2015), https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9903.pdf.

humans need a baseline level of healthcare provision and trust in service delivery to be healthy and feel secure.

Three interviewees independently stressed the need to return to the idea of human and community security and the baseline healthcare provision required to achieve this security, aligned with broader development goals. Several suggested it may help to establish trust between governments and communities if this could be achieved not via top-down mechanisms, but through real engagement with communities to understand their needs. It was recommended that to address this issue and unite UHC and GHS that every healthcare facility in every country needs to be mapped, including their linkages and coordination pathways. The ability to at first identify and visualise countries' healthcare provision platforms can then be used to deliver both coverage and security.

It is clear that there are synergies between the frameworks of UHC and GHS, but also divergences,[17] and that WHO has a role to play in identifying and facilitating these synergies.

Financing global support for country preparedness

Technical support and capacity for preparedness hinges on the availability and accessibility of funds. Key relationships mentioned include bilateral and in-kind assistance, the World Bank and the rising importance of the regional development banks, the Global Fund and Gavi. Preparedness financing was described by respondents as being fragmented and disease- or project-specific.

The challenges to financing preparedness as identified by interviewees range from the perceived lack of funds available, the ambiguity around available sources and channels of funds, the sustainability of investments in preparedness, and ensuring activities are embedded in, and contribute to, broader health systems strengthening goals. A key challenge was considered to be effectively engaging national finance ministers in the cost-benefit of preparedness, as both high-income and lower-income countries bear heavy costs in terms of sustaining technical deployment and managing competing priorities. Several interviewees recommended a move towards working horizontally and multilaterally to optimise financial resources.

Most interviewees stressed a need to bring all actors together to identify country needs for the appropriate design and effective coordination of preparedness activities. To a large extent, this can be achieved through the JEE process, and should be maintained through regular simulations, as the WHE has recognized through its IHR MEF. Simulations have their own cost-benefits considerations and thus they must also be adequately prioritized and funded.

Interviewees called for greater strategic vision and cooperation between technical and financial institutions, to focus on the financing aspects of NAPHS in equal measure. Georgetown University has published a 'Global Atlas' to track technical and financial support to countries alongside JEE

[17] Clare Wenham et al., "Global Health Security and Universal Health Coverage: From a Marriage of Convenience to a Strategic, Effective Partnership," *BMJ Global Health* 4, no. 1 (2019).

PRE-PEER-REVIEW DRAFT

scores, however one interviewee questioned the reliability of the data and thought this activity was better undertaken by WHO or the GPMB. WHO has developed a resource-mapping tool (REMAP) to help Member states identify where gaps exist and where more investment of financial and technical resources is needed for implementation of NAPHSs. Resource mapping has been successfully conducted in Sierra Leone, Tanzania, Ethiopia and Nigeria, with more countries planned. Feedback from the exercise in Sierra Leone showed overlap in donor-funded projects, to which WHO recommended a more flexible approach to earmarking funds to achieve better coordinated results.[18] The process identified more than US$ 50 million—raised both domestically and externally—of new and reprogrammed funding.

Most people interviewed agreed that more funding for preparedness activities was needed, and that the availability of increased funding may incentivise countries to develop NAPHS. Mobilising technical and financial resources to support preparedness at a country level should converge on, and be driven by, country needs and an assessment of the local infrastructure and existing capacities, to align with existing health systems and disease programs.

Supporting preparedness in fragile contexts

All the activities for supporting country preparedness as highlighted above become more fraught and challenging in fragile and conflict-affected states, where the majority of large-scale infectious disease outbreaks now occur. Health systems capabilities are typically weak or broken and effective prevention, surveillance, and response mechanisms are limited.[19] In these situations, the effectiveness of the UN and humanitarian systems working together is vital. In recognising these risks, the Global Health Risk Framework Commission (GHRFC) called upon the UN Secretary General to work with WHO and other divisions of the UN to develop strategies for sustaining health systems capabilities in these contexts (Appendix 2: Recommendation 12).

In 2017, the Operational Framework to Guide Collaboration in Fragile, Conflict and Vulnerable Settings, a collaboration between WHO, the World Food Programme (WFP), UNICEF and the World Bank, was published under the name *Deliver Accelerated Results Effectively and Sustainably* (DARES).[20] This framework emphasises prevention, increasing national capacity to deliver essential services, mounting effective outbreak response, and leaving no one behind.[21] No interviewees who were asked about DARES were familiar with it and therefore further analysis of this recommendation is not possible at this time, but it does question the dissemination strategy and uptake plan.
In its 13th GPW, WHO identifies a focus on "preventing health system collapse, maintaining health services and rebuilding health systems after crises and

[18] World Health Organization, "Workshop on Prioritization, Resource Mapping and Multisectoral Partnership Collaboration for the Implementation of the National Action Plan for Health Security," (2018), https://apps.who.int/iris/bitstream/handle/10665/326579/WHO-WHE-CPI-2019.19-eng.pdf.
[19] Paul B Spiegel et al., "Occurrence and Overlap of Natural Disasters, Complex Emergencies and Epidemics During the Past Decade (1995–2004)," *Conflict and health* 1, no. 1 (2007).
[20] World Health Organization, "DARES Operational Framework," November 2017, https://www.who.int/emergencies/partners/dares-operational-framework-nov17.pdf.
[21] Ibid.

PRE-PEER REVIEW DRAFT

conflicts". [22] As such, this is an important area that requires further investigation by the GPMB.

PRE-PEER-REVIEW DRAFT

[22] World Health Organization, "Thirteenth General Programme of Work 2019–2023," accessed September 13, 2019, https://www.who.int/about/what-we-do/thirteenth-general-programme-of-work-2019-2023.

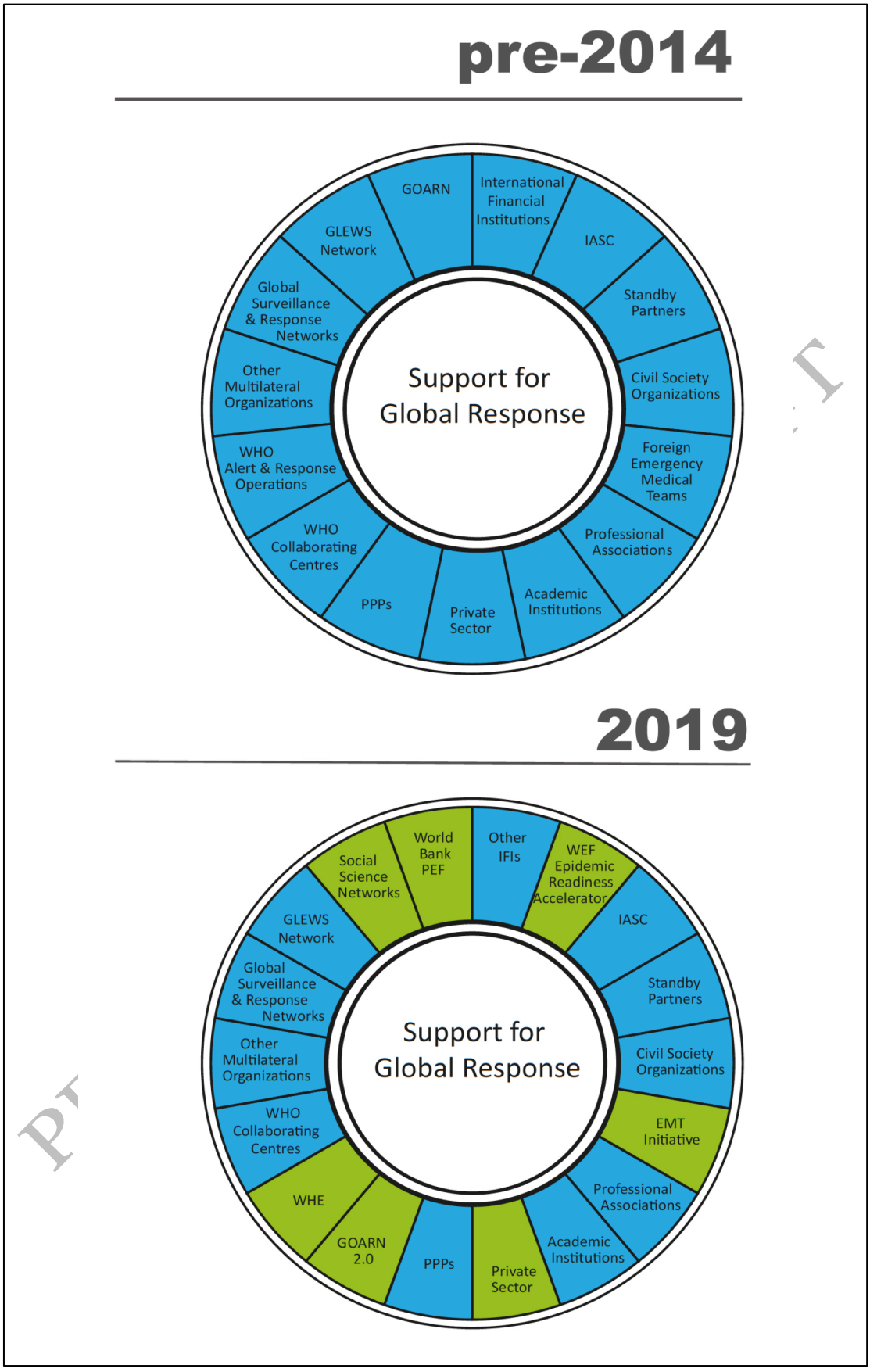
3. Global readiness to respond

Summary

- With varying levels of preparedness across the world and the ability of health emergencies to rapidly cross borders, global readiness to support countries when national capacities are exceeded remains crucial.
- The proliferation of institutions and other support groups is uncoordinated and, although more partners are indicating they have response capacities, evidence from current outbreaks highlights critical gaps in the delivery of key response activities. No such mechanism for mapping and tracking these capacities currently exists.
- There has been greater awareness of the importance of community engagement and issues of gender in an effective outbreak response, however, integration of both aspects into global and local response activities has been insufficient.
- While the establishment of the WHE increased collaboration between health emergency and humanitarian responders, the IASC protocols needed to elevate large-scale health emergencies to the highest political level, the UN, are new and relatively untested. Further monitoring is required to ensure robust systems for triggering, coordinating and escalating a global response are in place to strengthen readiness for the next large-scale health emergency.
- Data collection and information sharing during a response has improved due to the development of new technologies, however the availability, accessibility and integration of these technologies needs to be improved for more effective and efficient response efforts. There is a need for greater governance and accountability of data sharing agreements to ensure better compliance, and that benefits and risks are shared equitably.
- As with preparedness, financing for both readiness and response remained a key concern: it is unclear how much is being contributed for which activities, whether readiness or response, nor the outcomes of these activities.

We define 'readiness' as a measure of the global ability to quickly and appropriately respond to a health emergency where country capacity is exceeded. There are two dimensions to readiness: the timeliness of the response ('quickly'), and the extent to which the response is sensitive to the needs of the communities affected at the local, national, regional and international level ('appropriate'). The success of readiness activities is measured through the monitoring and evaluation of health emergency response efforts.

PRE-PEER-REVIEW DRAFT



There are a number of institutions and organisations with a role to play in readiness, and an increasing overlap between health emergency and humanitarian response actors, given the increasing number of health emergencies occurring in fragile and conflict-affected states (Box 3).

Interviewees identified the following key actors involved in the readiness and response phases: the UN Office for the Coordination of Humanitarian Affairs (UNOCHA), MSF, UNICEF, the IFRC, International Medical Corps, Save the Children, field epidemiology networks (e.g. AFENET, TEPHINET), emergency medical teams (EMTs), government and bilateral agencies (e.g. US CDC) (Figure 5). These organisations (excluding EMTs and International Medical Corps), together with academic institutions and professional associations, are GOARN members. They can support countries through bilateral arrangements, and also via GOARN deployments. Interviewees noted the absence of private sector engagement, although private companies were affected by and established business continuity measures during the West Africa Ebola outbreak. Additional entities supporting global readiness to respond (illustrated in green in Figure 5) are considered further in the sections that follow.

The military, though not depicted in Figure 5 due to limited involvement pre-2014, play a significant role in health emergency response, particularly during the 2014-16 West Africa Ebola outbreak. Engagement with the military as partners or potential partners in health emergency preparedness and response has increased since then. In October 2017, WHO supported the Indonesian government to host a meeting on *The Managing Future Global Health Risk by Strengthening Civilian and Military Health Services*. The meeting brought together more than 160 military and public health representatives from 44 countries. One priority identified during the meeting was the need for national frameworks between public health and military health services for disasters and outbreaks, including suspected or confirmed deliberate health emergencies. Another priority was the need for notification mechanisms between public health, veterinary medicine, agriculture and military services. The meeting participants acknowledged that the relationship between military and civilian health services would not be a one-size-fits-all approach, but that common principles could be developed.

Interviewees felt that the appropriateness of military involvement in response activities was deeply contextual and should not be encouraged in all instances. Partnerships between health responders and either local or foreign militaries in contexts where the military does not hold the trust of the community can fuel mistrust between healthcare workers and communities, put healthcare workers at risk and hamper an effective public health response by inadvertently discouraging people to attend healthcare clinics. The political, economic, social and cultural context of an outbreak will have a significant impact on the relationship between the military and the community. Partnerships with military can bear great fruits, and those militaries that engage in the development of medical countermeasures should be included in any R&D governance mechanism, however, their involvement in health emergency response must continue to be considered on a case-by-case basis and not assumed or initiated without consideration for the local context or geo-political setting. Many interviewees agreed that security was a necessity in complex emergencies, for protection, and securing and enabling access during conflicts and in remote areas. However, it was strongly emphasised that the military should not be used for public health purposes, such as enforced isolation or quarantine. Moreover, security does not necessarily have to be provided by the army: depending on the context other national, international or private security forces might be more appropriate. Security should be delivered by non-political agencies where possible.

PRE-PEER REVIEW DRAFT

Box 3: Responding to the diphtheria outbreak in the Rohingya refugee camps in Cox's Bazar, Bangladesh

Multiple hazards test the readiness of actors in a humanitarian crisis. Moreover, these hazards occur within a complex and delicate political, social and cultural environment, requiring greater coordination across agencies and sectors at the international and local level. Interviewees perceived the overall response to the 2017-2019 diphtheria outbreak in the Rohingya refugees camps successful, well-coordinated, and an opportunity to share experiences and lessons learnt to improve future responses, whilst acknowledging that responses to health emergencies in humanitarian crises are highly context-specific.

As of July 2019, the population of Rohingya refugees in registered and unregistered camps across Cox's Bazar is approaching 1 million.[23] The first suspected case of diphtheria was reported by an MSF clinic on 10 November 2017.[24] Interviewees acknowledged two main factors that contributed to the timely response: as one interviewee stated, "*the right people [were] in the right place*". Firstly, there is, generally, a high level of unfamiliarity with the signs and symptoms of diphtheria in Bangladesh due to successful vaccination campaigns. As such, it was the international expertise and experience of the MSF team, in diagnosing other diphtheria outbreaks in these settings, that led to the early identification and detection of transmission. Secondly, a WHO team from Geneva had just visited Cox's Bazar prior to the announcement of the outbreak and was able to return, retaining recent and relevant knowledge of the demographics and conditions of the camps. This high-level engagement combined with international experience and expertise rapidly mobilised a technical response, including disease surveillance and referral systems, and coordination meetings. Although, interviewees reported a lag time in setting up laboratories, with samples initially sent to national reference facilities in Dhaka for testing, which meant only a proportion of observed cases were being confirmed. This reiterates comments from other interviewees about the difficulties of monitoring and evaluating country capacity that is largely held at national level, and is not decentralised or easily accessible to those working locally.

The political implications of a humanitarian crisis can limit and, in some instances, jeopardise the actions of international and local actors on the ground. Interviewees observed several parallel governance and coordination structures, as neither a health cluster system nor a refugee response could be activated due to the political climate. There was also a fragmented system of disease surveillance and reporting with existing actors using their own systems before EWARS began functioning properly, which was delayed because WHO was not present from the outset.

The mass influx of Rohingya seeking refuge in Bangladesh in 2018 triggered the IOM—then the lead agency coordinating the response—to formally request that WHO step up and take over the coordination function through the health

[23] United Nations High Commissioner for Refugees, "Situation Refugee Response in Bangladesh," accessed September 13, 2019, https://data2.unhcr.org/en/situations/myanmar_refugees.
[24] World Health Organization, "Diphtheria – Cox's Bazar in Bangladesh," WHO, accessed September 13, 2019, http://www.who.int/csr/don/13-december-2017-diphtheria-bangladesh/en/.

PRE-PEER REVIEW DRAFT

'sector'. Organizations with a strong presence and footprint in the camps pre-diphtheria, including IOM, UNHCR and MSF, were able to rapidly mobilise resources but the caseload overwhelmed the existing capacity of all partners. Only MSF were able to provide the level of care needed. A dedicated diphtheria response task force was created, comprising WHO, government bodies and key partners, and the UK EMT responded to provide specialist treatment and care. However, one interviewee noted a tension between the EMT mode of response, being deployed bilaterally to work directly with government, and the health sector response being led and coordinated by WHO, who the national government had devolved responsibility to. The EMT Initiative was described as a "visible improvement over the last few years" by another interviewee, but that the short-term, high reward role of the EMTs—also at a very high cost and potentially low impact—may risk the community engagement aspects of readiness and response, as well as key primary healthcare, resilience and rebuilding aspects.

Coordinating over 100 different organizations requires harmonising existing structures and systems, integrating new ones, and convening actors cohesively and effectively. This was a challenge described by all interviewees to be the responsibility of WHO as health sector lead. Interviewees highlighted two examples where friction occurred between the role and responsibilities of WHO, national policies and what would be considered emergency best practice. The first was due to the higher standard of healthcare provided to the Rohingya refugees compared to the rest of Bangladesh: Bangladeshi children were reasonably covered by the national child vaccination schedule, but no adults had received subsequent vaccinations. This led to some reluctance to vaccinate Rohingya refugees. After negotiations, Rohingya children received three rounds of catch-up vaccination but there was no success in vaccinating adults. Friction also exists between WHO's mandate to support governments and the humanitarian mandate, especially in crises, to protect affected populations and their human rights.

The advantage of WHO's position however, as noted by one interviewee, is that they remain in-country working closely with governments post-emergency and this provides an opportunity to build upon lessons learnt and strengthen readiness for future emergencies. Interviewees strongly supported the idea of WHO engaging more politically in health emergencies in humanitarian crises and advising national (and subnational) governments, to mediate different organizations and their mandates, and thus minimise impacts on the timeliness of a response. Despite these political barriers, interviewees described the positive collaboration and coordination, highlighting the importance of a flexible approach to adapt the principles of response to the local situation, and find a method of collaboration that works best in the given context. Interviewees still emphasised having a minimum set of standardised requirements and the right timeliness indicators to capture "how quickly you can improve the baseline services that you would need in any outbreak", to monitor the effectiveness of a response.

Further, interviewees attributed the success of the response to effective community engagement, risk communication and messaging, and delivering these messages through appropriate channels, for example as education materials, or through the network of local mosques and religious leaders. All interviewees had an awareness of how gender might impact response efforts, for example in distancing women from mainstream communication and

PRE-PEER REVIEW DRAFT

public health interventions, or in leaving children unsupervised in treatment centres depending on the role of the primary caregiver in society (with men typically looking for livelihood opportunities and women typically in the household). As one interviewee stated, "gender understanding and sensitivity is largely driven by people involved in communications and community engagement", and thus many interviewees talked about how they adapted their communication strategies to minimise gender bias. Organizations such as IOM, UNHCR and MSF had extensive networks of local community healthcare volunteers with whom they already worked and were able to mobilise rapidly around the diphtheria response, bridging language and cultural gaps with affected, or at-risk, communities. One interviewee added that community members themselves came forward to inform health authorities of suspected diphtheria cases, demonstrating the fundamental importance of community engagement in contextualising and enhancing the appropriateness of a response.

Responding quickly

The timeliness of the response depends on two factors: recognising the timepoint at which a health emergency is likely to exceed local capacities, and the speed at which mechanisms can be activated to galvanise the global community. Shifting from a normative role to an operational role is part of making decisions quickly as part of a response and, as one interviewee pointed out, this may not be a natural shift for many institutions.

Many interviewees commented on the need for global readiness efforts to be linked to health systems strengthening and building local capacities. Several interviewees highlighted that these activities have seen some increasing investment and contributions from typical response actors such as MSF. GOARN has also expanded its mandate to improve country-level readiness (GOARN 2.0). This shift seemed to be part of a collective consciousness of the long-term responsibilities to a country post-crisis, to create more sustainable modes of response. The concept of 'readiness' should also be decentralised and there are important roles and responsibilities that lie with regional bodies and platforms, and with Member states and local governments, to more rapidly mobilise resources. One interviewee also advocated for greater recognition and investments in the role of international agencies, such as the IFRC and ICRC. These agencies' mandates focus on the community level and have established local networks and relationships, but also utilise the global infrastructure and knowledge to help set standards and ensure complementarity across different contexts and countries.

A key concern raised by interviewees is that the proliferation of institutions and other support groups is uncoordinated and that, although more partners are indicating they have response capacities, there are critical gaps in the delivery of key response activities, for example community surveillance and infection prevention and control (IPC). Further, that coordination is not being seen as a critical function of response and thus, specific training and expertise on how to coordinate a health emergency at all levels of the (global) health system is missing.

There is a need to better define and distinguish the roles of different 'readiness' actors and their contribution(s) to response activities, to be able to recognise comparative advantages, avoid duplicating or overlapping efforts,

IRC-PEER-REVIEW DRAFT

and rapidly scale-up a response effectively and efficiently (see Recommendation 14 in Annex 3). A point was made by a number of interviewees to be more strategic about when and how to engage partners, as humanitarian response actors and programmes are often ongoing and managing emergency contexts, thus identifying gaps in operational and technical knowledge and capacity is key to bringing in relevant partners in a timely way beyond existing joint efforts between WHO and the UN system (see Recommendation 14-15 in Annex 3).

In the event of a large-scale health emergency, the ability to rapidly train health workers is critical. To support training, WHO has already developed guidance on topics that are in need of standardization in addition to an online platform, Open WHO, that has the capacity to provide online training to 250,000 people at once: the latter may be particularly necessary in the case of global pandemic. The development of systems that can employ these newly trained health workers after a health emergency has subsided is just as crucial. One interviewee commented that their team had trained 8000 health workers to respond to the West Africa Ebola outbreak but now almost none were retained in the health system. Specific reasons for this were not identified during the process of this research.

At the same time, regional actors must increasingly play the role that is currently enacted by WHO headquarters and the global community. Regional actors are growing in their capacities and coordination capabilities, supported by regional development banks and other donors. Many regional actors and networks however still lack the funds and the authority to fully engage in readiness activities. WHO must continue to support the growth and training of these actors and networks, while also handing over control of activities that should no longer be directed from an office in Geneva.

The devastating loss of an estimated 815 health workers in the 2014-16 West Africa Ebola outbreak also left millions of people without sufficient access to healthcare (due to the doctor-patient ratio). [25] It is estimated that to regenerate the workforce will take between five and ten years. The devastating impacts of an outbreak underscore the importance of continuously building a highly skilled, deployable workforce across local, national and regional levels. Protecting and equipping the workforce with access to appropriate infection control measures and laboratories for early diagnosis of emerging outbreaks is key. The West Africa Ebola outbreak highlights the need to bridge the acute phase of an emergency with health systems strengthening and the sustainable development of health care.

PRE-PEER-REVIEW DRAFT

Responding appropriately

The second dimension of response ('appropriate') was discussed by several interviewees, in terms of ensuring a contextual understanding of the outbreak and the communities affected, to adapt readiness activities to local needs and gaps at a country level. As one interviewee stressed, governments should be involved in these assessments (with support from WHO) and efforts should be made to identify and leverage existing local resources and partners, who likely

[25] World Health Organization, "Health Worker Ebola Infections in Guinea, Liberia and Sierra Leone," WHO, accessed September 13, 2019, http://www.who.int/csr/resources/publications/ebola/health-worker-infections/en/.

have a better understanding of the context of the outbreak and can be quicker to shift to an operational mode. This opportunity is not being sufficiently utilized, as pointed out by a number of interviewees, and leaves WHO headquarters in unsustainable, prolonged cycles of deployment. To empower local teams to respond, interviewees encouraged investments in training, prioritising highly-skilled local professionals in deployment, fostering greater knowledge and skills-exchange between foreign and local response teams, and engaging regional institutions in human resource mobilisation.

Engaging communities in preparedness activities and building community trust early on in the health emergency management cycle was critical to ensuring a successful outbreak response, as emphasised by a number of interviewees. As one interviewee stated, "community engagement is everyone's business", and interviewees continued to discuss community engagement as an integral part of readiness. These were difficult lessons learned during the West Africa Ebola outbreak, and many interviewees felt there had been considerable improvement by response agencies in recognising and prioritising community engagement.

Early community engagement enables communities, not just state-based health systems, to respond to health emergencies. This was recently evident in Uganda where communities played a central role in identifying and reporting suspected cases of Ebola and potential disease transmission among community members who had recently returned from North Kivu in the DRC. The IOAC has previously reported on the successful partnerships between WHE, national government and local community leaders in working with communities to understand the symptoms of Ebola and the necessary steps to take if members of the community were potentially infected.[26]

One interviewee felt that community engagement should be led by those with local knowledge and expertise as much as possible, and that platforms to enable timely reporting, analysis and translation of findings and the development of appropriate outcome indicators to evaluate these initiatives, were essential and required support to inform current and future responses.

Despite this increased recognition, several interviewees felt that community engagement and the results of qualitative research were still not being sufficiently integrated into response activities, and that community engagement is often sidelined to communications and public relations, with little follow up by other arms of the response. Community engagement was seen as significantly under-resourced and requiring improved support and training of staff to ensure the needs and behaviours of the community were used to inform the response, rather than trying to change community behaviours to fit the response. One interviewee highlighted the unequal weighting of qualitative data compared to quantitative data in decision-making processes:

"There's a discrepancy between the way we perceive qualitative data coming out and quantitative data… we believe in the epidemiological information and numbers that come out, despite gaps and holes in the narrative whereas

PRE-PEER-REVIEW DRAFT

[26] Independent Oversight and Advisory Committee, "Uganda Mission Report: 15-19 October 2019," (2019), https://www.who.int/about/who_reform/emergency-capacities/oversight-committee/uganda-mission-report-2018.pdf.

social science too often is treated as soft science and the information is not taken into account in decision making processes."

Another interviewee felt that currently community engagement is still often implemented in a "*scatter gun*" approach. They suggested that interventions could be more effective through multilateral (rather than simply bilateral) collaborations, led by WHO, where all institutions and other support groups work with the community to identify their priorities, and address this in a coordinated way. Although one interviewee suggested that focusing on and giving power to communities may be seen as challenging state authority, which would require political leadership by WHO and for responders to be more sensitive to the political context.

Several interviewees felt that, like community engagement, issues of gender in outbreak response had received more attention since 2014, but sufficient integration into the risk assessment and response activities of WHO and other actors was lacking. Ensuring community engagement and empowerment becomes integral to response activities requires not just more resources, but also greater commitment from all response agencies to create and encourage awareness of these issues in the workplace and their everyday work.

Responding appropriately will also be dictated by the type of outbreak. WHO and other agencies have systems in place for 'naturally-occurring' outbreaks and those that happen within a humanitarian context. However, a number of interviewees felt that the global community was underprepared for outbreaks caused by deliberate or accidental release, and that managing community fears and expectations will be essential to an effective response, as stated by one interviewee. This raises concerns given the challenges highlighted above regarding the improved but still insufficient integration of community engagement into current response efforts.

Coordinating global readiness

The UN High-Level Panel (UNHLP) and Harvard-LSHTM post-West Africa Ebola reports recommended that health emergency governance and accountability be raised to the level of the UN (Appendix 2: Recommendations 23-26). However, neither the IHR Review Committee nor the UN Secretary-General (UNSG) agreed with this concept because it would risk undermining the authority of WHO.[27] One interviewee highlighted the risk of health issues becoming politicised by bringing them to the broader UN community. The interviewee thus recommended that discussions held at the UN General Assembly should remain high-level and avoid technical discussions to limit the risk of politics obscuring public health needs.

The question remained, for many interviewees, who or what can provide both over-arching accountability to health emergency preparedness and how can we ensure that emergencies that require urgent political attention at the highest levels of global governance receive that attention. A table-top exercise on deliberate biological events held at the 2019 Munich Security Conference led to the recommendation that the UN Secretary-General should appoint a

[27] IHR Review Committee, "Implementation of the International Health Regulations (2005): Report of the Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response," (Geneva: World Health Organization, 2016).

PRE-PEER-REVIEW DRAFT

"special representative" on high consequence biological events, with a mandate to advise the Secretary-General and the ability to convene representatives of other multilateral organizations.[28]

Another interviewee, however, highlighted that rather than a new person or body dedicated to high-risk biological events, WHO has instead increased its engagement with the IASC. Prior to 2014, the IASC did not have an established protocol for activation during a health emergency that was not situated within a broader humanitarian crisis. Subsequently, WHO worked with IASC to update its 2012 Humanitarian System-Wide Emergency Activation ("L3 response") protocol to include health emergencies in 2016. In 2018, this L3 protocol was replaced with new *Humanitarian System-Wide Scale-Up Protocols* accompanied by the 2019 *Scale-Up Protocol for Control of Infectious Disease Events*.[29] The latter *Scale-Up Protocol* was activated for the first time in May 2019 for the Ebola outbreak in DRC. A few interviewees questioned whether this was too late, and our linked report by the IOAC recommends that particular triggers be established to ensure the timely and appropriate activation of these protocols. The appropriateness and adequacy of these protocols have not yet been sufficiently assessed and this will require on-going monitoring and evaluation.

These global-level exercises need to be translated to country-level and the question of how partner networks and resources are consistently engaged over time, especially at the civil society and community level, was raised by a number of interviewees. True inclusion and integration of local CSOs in high-level global structures, such as the IASC, is a work in progress as stated by one interviewee. Another interviewee spoke of the need to ensure that global activation occurs alongside local activation, that one without the other leads to limitations to both the timeliness and appropriateness of response, as well as the availability of funding. Cultivating a culture of sharing and learning from best (and worst) practice is important to help generate solutions.

Finally, some interviewees felt that the global community was underprepared to deal with numerous complex prolonged events, in addition to global pandemics. The IOAC report on WHE HR capacities highlighted that current complex prolonged events have already stretched the current system[30], and interviewees questioned whether global capacity existed to deal with a large-scale pandemic concurrently with other outbreaks. While one interviewee stressed that this scenario further strengthens the argument for investing in country preparedness, and health systems strengthening, they believed that further work is required to address this issue, establish plans and capabilities to handle multiple outbreaks in the context of a pandemic.

PRE-PEER-REVIEW DRAFT

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[28] Nuclear Threats Inititative, "A Spreading Plague: Lessons and Recommendations for Responding to a Deliberate Biological Event | Analysis | NTI," accessed September 13, 2019, https://www.nti.org/analysis/reports/spreading-plague-lessons-and-recommendations-responding-deliberate-biological-event/.

[29] Inter-Agency Standing Committee, "IASC Humanitarian System-Wide Scale-Up Protocols Released," accessed September 13, 2019, https://interagencystandingcommittee.org/iasc-transformative-agenda/content/iasc-humanitarian-system-wide-scale-protocols-released.; Inter-Agency Standing Committee, "Scale-Up Protocol for the Control of Infectious Disease Events Endorsed by the IASC Principals | IASC," accessed September 13, 2019, https://interagencystandingcommittee.org/iasc-transformative-agenda/content/scale-protocol-control-infectious-disease-events-endorsed-iasc.

[30] Independent Oversight and Advisory Committee, "Special Report to the Director-General of World Health Organization," (2019), https://www.who.int/about/who_reform/emergency-capacities/oversight-committee/ioac-special-report.pdf.

Coordinating local readiness

Underpinning the ability to respond quickly and appropriately is the availability of a highly-skilled health workforce, as discussed in previous sections. GOARN is one operational route to provide rapid expert country assistance, sourcing expertise from over 220 partner institutions, and the EMT Initiative supports the deployment of quality assured medical teams in emergencies, with personnel coming from governments, CSOs, militaries, and other multilateral and international organizations. As with country preparedness, a number of interviewees stressed the need for WHO to strengthen and coordinate the deployment of regional and country networks, rather than rely on the deployment of its own staff who were subsequently overburdened and at risk of burn out.

For health emergencies in humanitarian contexts, there is an established health cluster system, which is officially led by WHO. However, at the fourth annual Health Cluster Forum in June 2018, a number of challenges were highlighted by the Health Cluster Coordinators (HCCs) including: the mobilisation of resources; the need for greater clarity around how WHO reforms will impact HC teams; stronger involvement of CSO HC members; clarity on management and roles and responsibilities of HCC and Co-HCCs, and HC teams within the WHO Incident Management System; and ensuring an integrated response across sectors.

Official HCs may already be active in a country before an outbreak, but are not always integrated in the response, or integrated late, and they are not established in every humanitarian crisis. One interviewee commented on the tensions arising from EMTs functioning outside WHO's scope of influence, being deployed bilaterally and liaising directly with government rather than with WHO. Integration of HCs in the Emergency Operations Centres (EOCs), and collaboration with GOARN and EMTs was discussed, implying a current lack of involvement and coordination during outbreaks. Some interviewees recommended a shift to prioritise using local agencies and actors, as external agencies are not always helpful and are ultimately unsustainable for meeting ongoing community needs.

Data collection and information sharing

Communication and information management was identified as needing long-term and sustainable solutions for improvement. As one interviewee stated, "it doesn't matter what coordination mechanism an organisation or actor is part of, the key question is whether vital information is being shared and made available for a coordinated response". The view that WHO is not adequately resourcing information management at country level, and that more logistical and technical support for HCCs is needed, was expressed. The WHO system for detecting, sharing and responding to potential emergencies includes alerts from formal sources and web-based surveillance. Country IHR focal points have access to a closed outbreak management system through which they receive email alerts when a new entry occurs. Event verification and risk assessment is undertaken by a WHE team using pre-existing criteria, and then reviewed and assessed weekly in GOARN Steering Committee meetings. In addition, the Weekly Epidemiological Record is publicly available and a number of technologies and tools exist to facilitate the detection of outbreaks

at local levels. For example, Epidemic Big Data Resource and Analytics Innovation Network (EPI-BRAIN), Epidemic Intelligence from Open Sources (EIOS), Early Warning, Alert and Response Systems (EWARS), GoData, and Health Resources Availability Monitoring System.

Interviewees raised several challenges with the availability, accessibility and use of certain technologies and data to inform preparedness and response activities, not least because these tools are not integrated with one another and are often incompatible with country-level systems. The main challenges relate to setting up data management, coordination and communication systems (and the general absence of a governance architecture for data) prior to an outbreak that can withstand the pressures of an emergency situation, especially in low-resource settings. Further, one interviewee reflected on the barriers to collaborate and share information and data during an outbreak due to the competitive nature of research, questions over who owns the data and publishing rights. One solution mentioned by interviewees is EPI-BRAIN, which captures insights across private sector and public sector data holders, and provides a platform to easily test multiple applications of the data and identify the best one, ensuring a transparent, inclusive and accessible forum for outbreak response teams and emergency operations centres (EOCs), for example, to know what types of data tools they have at their disposal to inform a response.

One senior interviewee highlighted the need for greater governance and accountability of data sharing agreements to ensure all parties adhere to these during outbreaks, and that benefits and risks are shared equitably.

Financing readiness and response

Funding for readiness faced many of the same limitations and criticisms as funding for preparedness, but specifically that funding readiness is disjointed from response in a way that disrupts the health emergency management cycle and limits actors from engaging cohesively and continuously across the cycle. For example, one interviewee commented on the lack of funds (from the same donor) to support deployment and field activities once an emergency has been identified, in addition to strengthening local capacities before an emergency occurs.

One interviewee noted that three of the four top priorities of the IASC focused on improving the accessibility and disbursement of funds. At present, it is not clear who is providing funding for readiness and response activities, and during a health emergency the myriad funders, the activities they support, and the outcomes of those activities are neither coordinated nor monitored.

PRE-PEER REVIEW DRAFT

4. Travel, trade and declaring a PHEIC

Summary

- The implementation of travel and trade restrictions remains a key concern and the declaration of a PHEIC has, despite its initial intention, become highly politicised.
- The current binary PHEIC system was upheld by Member states at the 2016 World Health Assembly (WHA), but most interviewees agreed there was a need for an intermediary alert system to ensure global readiness.
- WHO has only recently begun to play an active role in monitoring and attempting to prevent trade and travel restrictions. It is currently developing guidelines that outline the cost-effectiveness of trade and travel restrictions to provide an evidence-base for these restrictions that will help prevent countries from implementing them.
- The private sector has been shown to both impact and be impacted by health emergencies. The WEF is working with WHO and companies to highlight the need to undertake risk assessments and develop business continuity plans accordingly.
- Media and social media play a considerable role in impacting public perception, and decisions on travel to affected areas or continue working in perceived at-risk environments (such as airlines), implementing appropriate infection control prevention advice, as well as decisions by countries to implement trade or travel restrictions. There is a need for further research that monitors the influence of media reporting and social media activity, and other factors, during health emergencies, to develop guidelines and relationships between organizations that overcome present challenges.

PRE-PEER-REVIEW DRAFT

The imposition of trade and travel restrictions by unaffected countries has been a commonplace response to large-scale infectious disease outbreaks since the European cholera outbreaks of the 1800s. Such restrictions are both more likely and have greater economic impact in our increasingly interconnected world, despite the foundational purpose of the IHR (and its earlier iterations) to contain infectious disease outbreaks with minimum disruption to trade and travel. The majority of interviewees who were questioned on the topic considered the current mechanisms to dissuade member states from imposing restrictions to be insufficient, and five West Africa Ebola outbreak review panels highlighted the urgent need to establish new mechanisms that more adequately address the unnecessary trade and travel restrictions by member states. These mechanisms should reduce the risk of additional negative consequences for affected countries and delayed response activities.[31]

Declaring a PHEIC

The fear of trade and travel restrictions is particularly evident in discussions around WHO's ability to declare a PHEIC, which has subsequently become highly politicised. WHO has faced criticism both for declaring a PHEIC too early (H1N1, 2009), and declaring one too late (Ebola, 2014).[32] Academics

[31] Herten-Crabb and Moon, "Outbreak-Related Travel Restrictions: Health & Economic Consequences."
[32] Gostin and Katz, "The International Health Regulations: The Governing Framework for Global Health Security."

recently argued for increased transparency of the committee's decision-making process and visibility of the meetings through live-streaming, to make all reasons and decisions publicly known.[33]

One interviewee emphasized that the original purpose of the PHEIC declaration was to allow the WHO DG to bring the world's attention to a situation that required additional international resources – it was not intended purely as a mechanism for declaring a situation that had already become an international crisis. It was expected that, through the IHR, countries would freely notify WHO of relevant disease outbreaks to call for international support, and that the subsequent provision of funds and operational support to contain it would provide incentive to do so. The intention was to normalise outbreaks and that quick response protects both the affected and the global community. Instead, a PHEIC declaration may be perceived as the Global North looking after its own interests, as is a common critique of the global health security sector more broadly. These concerns are heightened in complex emergencies, such as the ongoing Ebola outbreak in the DRC, where security for local and international response staff is an issue and declaring a PHEIC in contexts where trust between communities and responders has not been well established may arouse additional community suspicions.

To temper the reactions and politicisation of the PHEIC declaration, many have suggested that the system be adapted to add a graded alert system, which can be activated step-wise during emergencies (highlighted by Appendix 2: Recommendations 17 and 18). One interviewee suggested that an intermediate alert would ideally give the WHO DG the authority to, for example, write to member states and encourage them to commence their preparedness activities, request that the research community and donors align their resources to meet the needs of the outbreak. In the wake of the West Africa Ebola outbreak, the IHR Review Committee specifically recommended that WHO move to a graded warning system, but this was not supported by member states at the subsequent WHA. Nevertheless, a number of interviewees considered the development of, at the very least, an intermediate alert, a necessity to enhance global readiness.

Monitoring trade and travel restrictions

Principally, however, it is the trade and travel restrictions imposed by unaffected countries that seem to be causing the greatest issues. Despite its centrality to the purpose of the IHR and the many calls for reform since 2014, WHO has, until recently, played only a passive role in monitoring restrictions. Under IHR Article 43, member states are required to inform WHO within 48 hours of imposing such restrictions and their public health-based justification for doing so. WHO then shares this information with other member states, and where the justification is deemed invalid, engages in dialogue with the offending member state. As it stands, countries rarely inform WHO within the 48-hour window, and if they do, they generally do not provide an explanation based on scientific evidence or, as one interviewee commented, they often invoke the IHR confidentiality clause, which was intended for rare, rather

PRE-PEER-REVIEW DRAFT

[33] Mark Eccleston-Turner and Adam Kamradt-Scott, "Transparency in Ihr Emergency Committee Decision Making: The Case for Reform," *BMJ Global Health* 4, no. 2 (2019).

than common, use. The limitations of this process have not been addressed (Appendix 2: Recommendations 18-21).

There is contention as to whether the IHR empowers WHO to publicly name and shame member states for imposing undue restrictions. Presently, the information is posted on an internal web platform only, although this information is also now reported to the WHA as part of the annual IHR report. WHO also hosts The Ports, Airports and Ground Crossings Network (PAGNet): a private platform for public health officials to share information on public health activities at ports, airports and ground crossings.

WHO headquarters works with regional and country offices to engage the IHR national focal points when measures are implemented, requesting a justification and, where that justification is insufficient, the removal of the restriction. Otherwise, the only potential penalty for imposing undue restrictions is via the World Trade Organization's Sanitary and Phytosanitary Agreement (SPS agreement) that allows member states to put forth complaints for arbitration.[34] However, the agreement also allows member states to put in place restrictions for the benefit of public health – one interviewee recommended that this disjuncture between the agreement and the IHR must be resolved. To our knowledge, this mechanism has not yet been tested.

When trade and travel restrictions are put in place around animals, the WTO has an agreement with the OIE whereby the OIE is called upon as an expert authority and makes a determination on the appropriateness of the restriction, which informs the WTO's decision. There is no such collaboration between WTO and WHO in place under the SPS Agreement, though one interviewee suggested there should be, but that this would require significant political commitment to do so.

To prevent unjustified trade and travel restrictions, one interviewee thought more research was needed to truly understand country concerns and to provide evidence-based research to alleviate these concerns. Another interviewee's research shows that PHEIC declarations do not directly cause trade and travel restrictions, and that media and the cascade effect of other countries' restrictions have a greater impact on country decisions to apply their own restrictions. Two interviewees identified reasons for restricting trade and travel as largely driven by internal politics, such as needing to appear to be doing something, having 'strong borders', or gaining trade advantage by banning products unrelated to the outbreak. WHO is currently working with partners, including the International Air Transport Association (IATA), to develop guidelines on the health and economic impacts of measures often imposed by member states, such as exit screening, denial of entry, and trade restrictions. WHO hopes that by providing evidence on cost-effectiveness of these measures to prevent countries from implementing unwarranted measures. The guidelines are expected to be published by January 2020.

Trade and travel restrictions are also imposed by private companies when they withdraw services from affected areas. This has a significant impact on

[34] World Trade Organization, "WTO | Sanitary and Phytosanitary Measures - Text of the Agreement," accessed September 13, 2019, https://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm.

PRE-PEER-REVIEW DRAFT

the local economy and also hinders the deployment and work of responders. One interviewee suggested that, as with member states, there is a cascading effect whereby the cancellation of services by one company can prompt other companies to do the same. As seen in 2014, the withdrawal of airline services is particularly damaging: only two airlines maintained their flights to the affected West African countries. The story of how these airlines maintained their operations, however, also provides evidence of a way forward to dealing with the concerns of companies and their employees (Box 4). As independent private companies, airlines are able to make their own decisions but are guided by IATA and still remain dependent on the national authorities in which they are incorporated, so engagement with member states as well as business organisations remains an important element in dealing with private sector operations.

Box 4: Brussels Airlines during the West Africa Ebola outbreak[35]

"Without our flights it would become almost impossible for medical staff to reach the country" – Geert Sciot, then vice president at Brussels Airlines[36]

During the 2014-2016 West African Ebola outbreak, transport to and from the three most affected countries was largely disrupted by flight cancellations (WHO, 2016), where all but two airlines, Brussels Airlines and Air Maroc, suspended their flights. This case study reviews the experiences of British Airways, which suspended its flights during the epidemic, and Brussels Airlines, which continued flying.

British Airways suspended flights to Liberia and Sierra Leone during the outbreak: as of June 2019, these flights have not been reinstated. While an inability to ensure a safe working environment for its staff was noted as the main reason for flight suspension, staff anxiety, largely fuelled by media reporting, was also considered a key factor behind the decision to stop flying. The business imperative of airlines was also cited as a contributing factor: as airlines are first and foremost companies, they must protect their commercial interests, which means suspending flights until they are economically viable (i.e. until there is a demand). Evidently, myriad factors contributed to the British Airways decision to suspend these flights.

In contrast, Brussels Airlines continued operating flights to West Africa throughout the outbreak, during which time it transported more than 80,000 passengers and 2,000 tons of freight, mostly in aid supplies, to the region.[37] Despite facing similar challenges to those of British Airways, Brussels Airlines was able to maintain operations for a number of reasons: being a small company provided greater avenues for communication and trust-building with staff and trade unions; instituting an 'opt-out' rather than 'opt-in' system for staff who did not wish to fly to affected countries; partnering with Médecins Sans Frontières (MSF) to deliver safety briefings to trade union

PRE-PEER-REVIEW DRAFT

[35] Information summarized from the unpublished A. Herten-Crabb et al., "Background Paper: Infectious Disease Outbreaks, Travel and Tourism: Monitoring for Preparedness," (London: Chatham House, 2017).
[36] J. Worland, "Why One Airline Flies to West Africa Despite Ebola," *Time* (10 October 2014), http://time.com/3490961/brussels-airlines-ebola/.
[37] Brussels Airlines, "Brussels Airlines Doubles Flight Frequencies to Freetown and Monrovia," *Brussels Airlines*, https://www.brusselsairlines.com/it-it/corporate/press-room/detail.aspx?PRID=tcm:313-36056-16.

representatives; upper management taking on roles as air stewards to and from Ebola-affected countries to demonstrate that flying was safe; and relocating the West African crew base to Senegal, thus removing the need for overnight accommodation in affected countries.[38] It was also acknowledged that Brussels Airlines has typically been more dependent on its commercial activity in Africa than British Airways and other major airlines. As a consequence, the company and its employees had a significant stake in maintaining services.

The WEF has done considerable work on trade and travel issues, working with WHO, the World Bank, IATA, the International Civil Aviation Organization (ICAO), the World Travel and Tourism Council (WTTC), and the World Tourism Organization (UNWTO) and others in preparation for its Epidemic Readiness Accelerator platform. This platform has five work streams, including a travel and tourism work stream that seeks to "improve decision-making, coordination, and communication within and between the public and private sectors, relating to risk, travel advisories and border measures".[39] The platforms' work on travel and tourism, to be launched in January 2020, will encourage businesses to recognise their own risks during health emergencies and develop business continuity plans accordingly. It will also enable organizations to receive regular and timely information from WHO in order to maintain business continuity and operations and facilitate coordination of partnerships and initiatives.

The role of the media

One significant gap that remains is the need to increase and improve engagement with the media, who are recognized as a key player in driving member state, company and public fears during outbreaks, as well as a source for providing appropriate information and advice to reduce the risk of transmission in communities, ensure consistent messaging and not overburden health systems unnecessarily (Box 5). One interviewee acknowledged that the agenda of the media to sell newspapers and website advertising differs to that of public health. Whereas another media representative highlighted that if an event was in the public interest, then they would want to collaborate with responders to provide information. Establishing media contacts ahead of outbreaks was recommended.

Recognizing the media's crucial role during infectious disease events, the WHO's (2008) *Outbreak Communication Planning Guide* outlines a media monitoring system. This system, however, fails to capture the impact of outbreak-related media reporting on the travel and tourism sectors. Accordingly, there is a need for further indicators and responses to monitor media decision-making during infectious disease outbreaks and promote reporting that reflects available evidence and public health advice while

PRE-PEER-REVIEW DRAFT

[38] Ibid.; K. Walker, "For All of 2014's Heartbreaks, Brussels Airlines Made Brave Call on Ebola," *Air Transport World* (31 December 2014), https://atwonline.com/blog/all-2014-s-heartbreaks-brussels-airlines-made-brave-call-ebola; "Brussels Airlines Launches "Africa If Not Ebola" Campaign and Maintains Proud Airline Tradition," *Air Transport World* (12 February 2015), https://atwonline.com/blog/brussels-airlines-launches-africa-not-ebola-campaign-and-maintains-proud-airline-tradition; United Nations Economic Commission for Africa, "Socio-Economic Impacts of Ebola on Africa," (Addis Abbab: United Nations Economic Commission for Africa, 2005).
[39] "Managing the Risk and Impact of Future Epidemics," World Economic Forum, accessed September 17, 2019, https://www.weforum.org/projects/managing-the-risk-and-impact-of-future-epidemics/.

mitigating the economic consequences such events have on the travel and tourism sectors of affected countries. It is also important to note the increasing influence of social media during outbreaks,[40] which is even more difficult to monitor. There is a need for more research on the role that media and social media play during health emergencies. Media professionals with skills in working with traditional and social media must also be incorporated into preparedness and response activities.

Box 5: Reactions of media and the public during outbreaks[41]

The news media plays a critical role in disseminating information and opinions to the public during health emergencies.[42] The public often relies on the media to communicate complex scientific information and to provide guidelines on how to react in the event of an outbreak.[43] When an outbreak occurs, potential tourists are flooded with real-time coverage that leads them to perceive destinations in outbreak-affected countries as 'high-risk'.[44] Evidence suggests that this coverage tends to be sensationalized rather than objective.[45] For example, in the case of SARS, studies demonstrated that media reporting tended to create unwarranted fear and exaggerate the real risk involved in travelling to affected areas.[46] However, the media's capacity to report responsibly is largely dependent on their access to accurate, timely and authoritative information. While it has been acknowledged that the media prioritizes information from official sources,[47] such as governments and WHO, this information is not always available to them, leading to a situation in which the media may have to rely on alternative sources.

In addition to influencing public perceptions of a destination and its relative safety, the media also acts as a source of travel health advice by interpreting and communicating government travel advisories to the general public.[48] This has resulted in multiple interpretations and misinterpretations of the content. For example, a 'deferral of non-essential travel' advisory by the Australian government was interpreted and covered by the media as a 'travel ban' despite the fact that officials from the Department of Foreign Affairs and Trade confirmed that such an advisory did not constitute a ban.[49]

Therefore, despite the fact that media reporting may not reflect available

PRE-PEER REVIEW DRAFT

[40] Charles W Schmidt, "Trending Now: Using Social Media to Predict and Track Disease Outbreaks," (National Institute of Environmental Health Sciences, 2012).
[41] The information in this box is duplicated from the unpublished Herten-Crabb et al., "Background Paper: Infectious Disease Outbreaks, Travel and Tourism: Monitoring for Preparedness."
[42] World Health Organization, "WHO Outbreak Communication Planning Guide," WHO, accessed September 13, 2019, http://www.who.int/ihr/publications/outbreak-communication-guide/en/.
[43] Susan D Moeller, *Compassion Fatigue: How the Media Sell Disease, Famine, War and Death* (Routledge, 2002).
[44] Yoel Mansfeld and Abraham Pizam, *Tourism, Security and Safety* (Routledge, 2006).
[45] Jenny Kitzinger, "Researching Risk and the Media," *Health, risk & society* 1, no. 1 (1999); Moeller, *Compassion Fatigue: How the Media Sell Disease, Famine, War and Death*; Peter Mason, Peter Grabowski, and Wei Du, "Severe Acute Respiratory Syndrome, Tourism and the Media," *International Journal of Tourism Research* 7, no. 1 (2005).
[46] "Severe Acute Respiratory Syndrome, Tourism and the Media."; Bongkosh Ngamsom Rittichainuwat and Goutam Chakraborty, "Perceived Travel Risks Regarding Terrorism and Disease: The Case of Thailand," *Tourism Management* 30, no. 3 (2009).
[47] Kitzinger, "Researching Risk and the Media."
[48] David Beirman, "A Travel Industry Perspective on Government Travel Advisories," *Tourism in turbulent times towards safe experiences for visitors* (2006).
[49] Ibid.

evidence nor public health advice, the media's credibility and capacity to reach large audiences[50] mean that coverage can deter individuals from travelling to destinations that are reported to be under threat of disease. Given that the tourism industry in particular is dependent on discretionary spending, it is easy for tourists to change their plans if the media casts doubt on a destination.[51] Thus, by influencing public decision-making regarding travel, media reporting can contribute to outbreak-related economic losses to the tourism and travel sectors of affected countries.

In addition, media reporting can also hamper the humanitarian response to an outbreak. In the case of the 2014-16 West Africa Ebola outbreak, interview respondents noted the role of the media in deterring aid workers from travelling to West Africa to assist in the humanitarian response. Others also identified the influence of media reporting on the British government, which implemented increasingly restrictive measures, some thought, to appear to the public that it was "*doing something*" to stop Ebola spreading to the UK. It was also suggested that media-fueled public concern was a key reason behind private sector decision-making, where airlines suspended flights to appease the anxieties of crew and their families.

PRE-PEER-REVIEW DRAFT

[50] Rittichainuwat and Chakraborty, "Perceived Travel Risks Regarding Terrorism and Disease: The Case of Thailand."
[51] Jeff Wilks, Donna Pendergast, and Peter Leggat, *Tourism in Turbulent Times* (Routledge, 2006).

5. WHO reform and its role moving forward

Summary

- Most of the recommendations following the 2014-16 West Africa Ebola outbreak were directed at WHO, focusing on internal governance reform and the need for operational capacity. The development of the WHE and a number of new health emergency guidelines has in large part satisfied these recommendations.
- Human resources were a key and ongoing issue within WHO, particularly around issues of gender, and the deployment of already under-resourced staff from headquarters during large-scale emergencies leading to excessive workloads and staff burnout.
- WHO should focus on what only WHO can do: providing technical advice, setting norms, convening institutions and other sectors for preparedness and response activities, and coordinating activities at global and community level.
- There is a need for greater re-distribution of resources from headquarters to regional and country offices. The optimal balance of investments between WHO headquarters, regional offices and country offices requires a mapping the roles and responsibilities, and activities and outputs, to ensure that the limited resources are distributed to the places where they can make the biggest differences, with a focus on strengthening capacities at a local level.
- For deployment, WHO must continue developing stronger links with local and regional deployment partners that can more readily deploy, and convening global institutions and other support groups for improved coordination during peace time. For any deployment activities, where country and regional capacity is insufficient, WHO must be adequately resourced by Member states and other donors.
- Partnering with other global networks and institutions, and collaborating with those working to achieve complementary objectives under other international treaties and governance frameworks is essential. As the global convener on health, WHO should be at the forefront of recognising overlapping priorities and bringing in networks and institutions that work across these objectives.
- The impacts of the WHO restructure announced in March 2019 will require ongoing monitoring.

PRE-PEER-REVIEW DRAFT

Many of the recommendations to reform following the West Africa Ebola crisis were directed at WHO governance and the need to strengthen its operational capacity (Appendix 2: Recommendations 2-9). Subsequently, WHO established its Health Emergencies programme (WHE) to increase its capacity to better respond to and coordinate large-scale health emergencies. The Independent Oversight and Advisory Committee (IOAC) was also established to provide oversight to the WHE for four years: members of the Committee frequently undertake field visits to ongoing outbreaks and provide reports to the WHO Executive Board and WHA. Thus far, interviewees considered their reports to be in depth and independent; their recommendations have been readily implemented by WHE where appropriate. One interviewee reported that the IOAC intends to focus more on monitoring preparedness activities over the next year.

Table 1: WHO health emergency guidelines developed since 2015

Year	Guideline	Focus
2015	Framework for a Public Health Emergency Operations Centre	Integrates traditional public health services into an emergency management model.[52]
2017	Strategic Framework for Emergency Preparedness	Identifies the principles and aspects of effective country health emergency preparedness.[53]
	Emergency Response Framework	Clarifies WHO roles and responsibilities during health emergencies.[54]
	Global Health Cluster Strategic Framework	To strengthen cluster coordination and capacity to respond to prepare for, respond to, and recover from health emergencies.[55]
	Strategic Communications Framework	To support effective communications at all levels of WHO, including during health emergencies.[56]
2018	IHR Monitoring and Evaluation Framework	Four components (mandatory annual reporting, voluntary external evaluations, after action reviews and simulations) to assess and monitor capacities to prevent, detect and respond to health emergencies.[57]
	WHE Learning Strategy	To support the development of the health emergency workforce.[58]
2019	Framework of Engagement with Non-State Actors	To strengthen WHO engagement with non-state actors including civil society, the private sector, academic institutions and philanthropic foundations.[59]
	Emergency Risk Management for Health Framework	To provide a framing for health in national emergency risk management activities.[60]

Since 2015, WHO has also developed a number of frameworks and strategy documents that provide the theoretical backdrop to its health emergency preparedness and response operations (Table 1). WHO's completion of its Framework of Engagement with Non-State Actors, in particular, highlights its emphasis on working with other partners to achieve these targets, something that was necessary, said one interviewee, due to member state attempts to limit engagement with certain institutions and other support groups, like CSOs. Although another interviewee noted that the Framework also required

[52] World Health Organization, "Framework for a Public Health Emergency Operations Centre," WHO, accessed September 13, 2019, http://www.who.int/ihr/publications/9789241565134_eng/en/.
[53] World Health Organization, "A Strategic Framework for Emergency Preparedness," WHO, accessed September 13, 2019, http://www.who.int/ihr/publications/9789241511827/en/.
[54] World Health Organization, "Emergency Response Framework (ERF)," WHO, accessed September 13, 2019, http://www.who.int/hac/about/erf/en/.
[55] World Health Organization, "Strategic Framework," WHO, accessed September 13, 2019, http://www.who.int/health-cluster/about/work/strategic-framework/en/.
[56] World Health Organization, "WHO Strategic Communications Framework," WHO, accessed September 13, 2019, http://www.who.int/communicating-for-health/en/.
[57] World Health Organization, "IHR Monitoring and Evaluation Framework," WHO, accessed September 13, 2019, http://www.who.int/ihr/publications/WHO-WHE-CPI-2018.51/en/.
[58] World Health Organization, "WHE Learning Strategy," WHO, accessed September 13, 2019, http://www.who.int/emergencies/publications-resources/training/tools/en/.
[59] World Health Organization, "WHO's Engagement with Non-State Actors," accessed September 13, 2019, https://www.who.int/about/collaborations-and-partnerships/who-s-engagement-with-non-state-actors.
[60] World Health Organization, "Health Emergency and Disaster Risk Management," WHO, accessed September 13, 2019, http://www.who.int/hac/techguidance/preparedness/policy_and_strategies/en/.

PRE-PEER REVIEW DRAFT

considerable compliance and bureaucratic measures that makes partnering with institutions and other support groups beyond WHO rather cumbersome. Two interviewees spoke on the Emergency Response Framework – both thought it had improved WHO's response to health emergencies in humanitarian contexts, however one felt it was better suited to this than to 'naturally-occurring' outbreaks. Further investigation is required into the effectiveness of these guidelines and the need for further reform.

The state of the IHR was also mentioned by a number of interviewees. Some believed that it would be too risky to attempt to open up and reform the IHR, while others suggested that in the 14 years since its last revision, a lot has been learned and needs to be incorporated accordingly. One interviewee considered it a priority to include a ninth core capacity: human rights, although another interviewee considered that IHR, as an international legal instrument, was already connected to other human rights treaties and that that should be sufficient consideration and inclusion of human rights in health emergency preparedness and response. Another interviewee suggested that the IHR needed to be "*kept alive*" in a way that did not require renegotiating the treaty: other multilateral treaties regularly bring their members together to discuss, share and publish common understandings about the implementation of the treaty, such as the Biological Weapons Convention. The interviewee suggested that the health community could learn from this.

Organization-wide governance reforms, as recommended by the Harvard-LSHTM panel (Appendix 2: Recommendation 2-3), have been slower to be implemented, but this cannot be attributed to resistance to change. Instead, with the instalment of a new WHO DG in 2018, WHO embarked on a consultation process of staff and stakeholders. This work resulted in a presentation entitled "*Transforming for impact"*, delivered jointly by the WHO DG, Deputy-Director and Regional Directors in March 2019.[61] The joint presentation laid out the upcoming restructuring of WHO headquarters including the establishment of four key pillars: programmes, emergency preparedness and response, external relations and governance, and business operations. [62] The emergency preparedness and response pillar will be accompanied by a new Assistant Director-General for preparedness, responsible for meeting IHR core capacities, and a new Assistant Director-General for emergency response reporting to a new Executive Director for Emergencies.[63] In its report to the 2019 WHA, the IOAC commended the WHO on the new structure with its renewed emphasis on emergency preparedness and response. The IOAC sees this new structure as an opportunity to review and optimize the structure, roles and responsibilities of the WHE for better performance but it also expressed concern over the centralisation of WHE under the new structure, emphasising the need for the emergencies programme to maintain its flexibility.[64] As the IOAC is due to complete its four-year term in May 2020, one interviewee suggested that its

PRE-PEER REVIEW DRAFT

[61] World Health Organization, "Transforming for Impact," accessed September 13, 2019, https://www.who.int/dg/speeches/detail/transforming-for-impact.
[62] World Health Organization, "WHO HQ Structure March 2019," accessed September 13, 2019, https://pages.devex.com/rs/685-KBL-765/images/WHO-HQ-Structure-20190306.pdf.
[63] World Health Organization, "Transforming for Impact."
[64] Independent Oversight and Advisory Committee, "Public Health Preparedness and Response: Report of the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme," May 1, 2019, https://apps.who.int/gb/ebwha/pdf_files/WHA72/A72_6-en.pdf.

mandate may need to be extended to ensure that WHE maintains and strengthens its capacity under the new structure.

The restructure is expected to complement WHO's 13th GPW (2019-23) focused on new triple billion targets: 1 billion more with access to UHC, 1 billion more protected from health emergencies, and 1 billion with better health and well-being.[65] Its approach puts member states firmly at the centre of its work and many interviewees supported this focus.

A senior WHO interviewee stated that the current structure, specifically the existence of WHE, has facilitated 700 staff to support the DRC's Ebola outbreak: a massive increase in their operational capacity some of whom are on short term consulting contracts from the region. Many interviewees spoke highly of the WHE's work and, while acknowledging the many areas for improvement, were conscious of the rather large undertaking of the programme and considered it to be, overall, a success. Despite an initial request by the WHO DG to increase assessed contributions by 10% to adequately resource the WHE, member states agreed to just a 3% increase in assessed contributions.

Human resources at WHO

In 2019, the DG announced a number of reforms to its human resources policies. In particular, WHO outlined a new performance management system and specific links to staff objectives and outputs and the overall strategy of the 13th GPW. Additional announcements included a new recruitment process at headquarters to cut recruitment from more than 5 months to 80 days; a career track for senior scientists so they are not required to go into management in order to progress; a new Global Leadership and Management training initiative including 360-degree reviews and mentoring; the new WHO Academy to increase professional development opportunities for WHO staff; new opportunities for National Professional Officers; and a revamped, and paid, internship programme. These changes are all taken with the goals of gender parity and geographic diversity in mind: a diversity and inclusion strategy will be published late 2019.[66] While these new policies are laudable, it is too early to evaluate their progress. In March 2019, the IOAC requested that HR statistics are reported to the IOAC and to the public.[67]

Gender was also considered an ongoing issue throughout WHO and other organisations. Although some interviewees noted the increased gender balance among the WHO leadership, this has not yet filtered down throughout the system and it was suggested that hiring women has not necessarily led to listening to them in decision making. One interviewee thought this reflected wider leadership issues at WHO of not engaging with and listening to staff, agencies and communities, to inform preparedness and response activities.

"I know many of my [female] colleagues, either they are single, or they are divorced, or they don't go to the field because it's just not possible."

PRE-PEER REVIEW DRAFT

[65] World Health Organization, "Thirteenth General Programme of Work 2019–2023."
[66] World Health Organization, "Transforming for Impact."
[67] Independent Oversight and Advisory Committee, "Special Report to the Director-General of World Health Organization".

Another WHO employee described that for international staff with families, deployment requires not just increased personal risk but also the extensive logistics required to reorganize care responsibilities while away. The same was said regarding those who stay to coordinate the response from Geneva and must work around the clock to meet the needs of the response. One interviewee spoke of the arrangements that WHO headquarters made for another contracted company to provide organized camps for staff children during 2009 H1N1 epidemic which significantly reduced the stress of trying to find adequate care for the children while they were on holidays during the response. The WHO headquarters mentoring programme was also highlighted as an excellent way to share tips and create solidarity among women at WHO. Policies that take into consideration the differential needs of WHO staff should be further developed and implemented at all levels to foster an environment that encourages and empowers women and families in their work, and supports all staff in undertaking their care responsibilities while away from home. The DG has highlighted the importance of gender-awareness and gender-responsive programming across WHO: in March 2019, the DG announced that the Department of Gender, Equity and Rights would move into his office to ensure mainstreaming throughout the organization.[68]

The high turnover of staff at WHO, ministries of health and other health actors during and between outbreaks was also acknowledged by a number of interviewees as both a current challenge and a future risk to their preparedness and response capacities. A certain degree of continuity and redundancy in the system is required, in addition to ensuring that response staff are not regularly exhausted to the point of leaving their organization. Shifting focus to deploying local agencies would address this issue.

Interviewees also expressed concern that headquarters staff were consistently deployed while expected to maintain their duties back in the office leading to burnout and delays in the creation of those guidelines and protocols. Adequate support for deployed staff, including sufficient breaks from the response, are lacking.

There is no question regarding the dedication of WHO staff, however in addition to limitations to their time, a number of interviewees stressed the lack of non-health expertise within WHO and global health more broadly. They spoke of the need to diversify the work force to include political scientists and economists, and to increase resources for health lawyers and social scientists with the ability to translate research into practice skills as to better provide technical assistance to countries and better inform preparedness and response activities. This would enable WHO and partners to better address the non-health determinants of health emergencies.

WHO as an operational agency

The role of WHO was questioned by a number of interviewees. While none considered it wise or necessary to create a new entity specifically to deal with health emergencies, many were concerned that despite WHO's good and improving reputation, it continued to be under-resourced and over-committed. In particular, WHO is currently expected to set the norms, write

[68] World Health Organization, "Transforming for Impact."

PEER-REVIEW DRAFT

the guidelines and protocols for best practice *and* deploy its staff into the field. As such, there exist a number of questions about the role WHO *should* play, according to its mandate by member states as a global convener and technical agency for health, and the role WHO *needs* to play as countries continue to strengthen their capacity to respond to health emergencies.

A number of interviewees believed that only the most severe events should be coordinated by WHO headquarters while the majority of events should be managed at the country level, and that funding and staff resources should be reallocated accordingly. Among those who suggested this, there was disagreement about the roles and responsibilities of the regions versus Member states. Several considered the regional offices to be essential preparedness and response arms for multi-country outbreaks, while three interviewees external to WHO thought that a more direct link between headquarters and country offices was required.

One interviewee from an NPHI stated that the primary responsibility for preparedness and response lies within countries, and a majority of interviewees recommended the transfer of resources from the global to country and regional offices. Three interviewees representing both national and global organizations suggested that WHO should focus its efforts on technical and financial support to country preparedness and devolve the majority of emergency response coordination to the regional offices, relying on NPHIs and National Emergency Medical Teams to provide national response capacity. Headquarters would still need to maintain a base level of global coordination in the event of a multi-region emergency, and may be required to step in in crisis situations, but this refocusing on the countries and regions would enable WHO headquarters to uphold and sustain its role as a norm-setting, guidance development and convening body, while also preventing issues of headquarters staff being deployed to the detriment of other goals and their mental health.

One interviewee stressed that such a change would not be able to happen overnight, as many countries, particularly those who have currently or recently experienced conflict, will not have the necessary capacity to protect the health of their people. As such, WHO headquarters would need to carefully balance their responsibilities to these countries while working to strengthen national and regional institutions like the Africa CDC. The GHRFC recommended that WHO work with existing formal and informal regional and sub-regional networks to strengthen linkages and coordination to enhance mutual support and trust, sharing of information and laboratory resources, and joint outbreak investigations amongst neighbouring countries (Appendix 2: Recommendation 4).

It is clear that within WHO each of the regional offices operates differently: they are resourced at different levels and are managing relationships with headquarters, member states and other regional institutions in different ways. Although one interviewee from the regional level praised the development of the WHE in strengthening connections outbreak response and emergency staff within the regional office and headquarters, and within the region itself, further research is required as to the extent of this improved collaboration, and any further relationships with non-WHO sub-regional and regional institutions.

PRE-PEER REVIEW DRAFT

A key message from interviewees was that if WHO is to continue as an operational agency, it must be adequately resourced to do so and cut back if Member states and other donors are not willing to increase their contributions accordingly.

Global governance for health beyond WHO

Many partnerships were formed following the West Africa Ebola outbreak, and many that existed before were tested and strengthened, and a majority of interviewees emphasised the vital importance of partnerships, formal and informal, within and outside of the health sector. Interviewees also stressed the need for greater collaboration and alignment between the development, humanitarian and health emergency sectors. Further, these collaborations must be encouraged at all levels of preparedness and response: global, regional, country and community. Interviewees highlighted the increased willingness of the health sector to work with others, exemplified by the Inter-Agency Standing Committee (comprised of WHO, humanitarian organizations and civil society groups) meeting more often to come to agreements and establish smoother working relationships, to cede space and control to others, and to communicate more freely with one another to enable collaboration on shared goals and activities. The Global Health Security Agenda was also recognised as key in encouraging and facilitating involvement from other non-health organizations, such as the private sector. Nevertheless, many interviewees thought that this was an area for continued improvement.

Several interviewees considered that WHO should take on a more active role as convener of the breadth of global health institutions, in partnerships with Member states. This idea has also been articulated in the literature.[69] However, as noted by one interviewee, convening and coordinating takes time, and funding, and in order for WHO to consider, plan and fully resource the necessary convenings of global health institutions and those beyond health, including heads of state, it would need increased access to financing and support from its partners to do so. The GPMB also has a role to play in providing monitoring and accountability of WHO and other global institutions that are involved in or impact upon country preparedness and global readiness to respond. Three interviewees underscored the importance of the GPMB and the necessity of its independence.

As of January 2019, WHO holds official relationships with 217 non-state actors, including industry-wide bodies and global federations, and organizations in the humanitarian response, development, health research, and philanthropy sectors (Appendix 2: Recommendation 1).[70] As the global health architecture continues to evolve, WHO must better wield its mandate, provided by Member states and the IHR, and its existing relationships to strengthen its role of convening and coordinating partners, ensuring more cohesive support for capacity strengthening in countries and global outbreak response.

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[69] Richard Smith and Kelley Lee, "Global Health Governance: We Need Innovation Not Renovation," *BMJ global health* 2, no. 2 (2017); Sara Van Belle, Remco van de Pas, and Bruno Marchal, "Queen Bee in a Beehive: Who as Meta-Governor in Global Health Governance," ibid.3, no. 1 (2018).

[70] World Health Organization, "Non-State Actors in Official Relations with WHO," accessed September 13, 2019, https://www.who.int/about/collaborations-and-partnerships/who-s-engagement-with-non-state-actors/non-state-actors-in-official-relations-with-who.

PRE-PEER REVIEW DRAFT

The global health community cannot deliver global health alone, and the governance for health sits within a broader system of international relations and a political economy that has a deep impact on the prioritisation, and thus the financing, of preparedness and response activities by countries and global institutions.

While the IHR is the chief international treaty and governance framework for health emergencies, a number of other health- and non-health-specific international treaties and frameworks exist which complement the objectives of the IHR (Table 2). All countries have the responsibility to uphold the Universal Declaration of Human Rights and its associated covenants which establish health as a human right, indivisible from all other rights. Signatory countries are also expected to ratify and act in accordance with a number of other UN human rights treaties and declarations, including the Convention on the Elimination of All Forms of Racial Discrimination, Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), the Convention on the Rights of the Child, the Declaration on the Rights of Indigenous Peoples, and the Declaration on the Rights of People with Disabilities.

A number of other non-health-specific international treaties and governance frameworks share complementary objectives with the IHR, as highlighted in Table 2.

Table 2: Non-health-specific international treaties and governance frameworks with relevance to the IHR

Governance treaties and frameworks	Effective as of	Relationship to IHR
Universal Declaration of Human Rights and associated Covenants and Conventions on human rights and the elimination of discrimination	1948 onwards	Established health as a human right, indivisible from other rights.
FAO Codex Alimentarius	1963	Protects consumer and animal health (safe human and animal food, anti-microbial resistance (AMR), remove trade barriers).WTO members that wish to apply stricter food safety measures than those set by Codex may be required to justify these measures scientifically.
UN convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons	1975	Related to revision WHA55.16 on global public health response to natural occurrence, accidental release or deliberate use of biological and chemical agents or radionuclear material that affect health. Member States are urged to treat any deliberate use, including local, of biological and chemical agents and radionuclear attack to cause harm also as a global public health threat, and to respond to such a threat in other countries by sharing expertise, supplies and resources in order rapidly to contain the event and mitigate its effects.
UN Convention on Biological Diversity	1993	Relates to the facilitation of sample transport and movement, processing and disposal of biological substances and diagnostic specimens for

PRE-PEER REVIEW DRAFT

		verification and public health response purposes under the IHR.
WTO Agreement on the Application of Sanitary and Phytosanitary Measures	1995	Provides a mechanism for Member states to challenge travel and trade restrictions implemented without a satisfactory public health reason
Istanbul Programme of Action for the Least Developed Countries	2011-2020	Relates to the call for Member States to provide support to developing countries and countries with economies in transition if requested, in the building, strengthening and maintenance of the public health capacities required under the IHR
Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits	2014	Relates to the facilitation of sample transport and movement of biological substances and diagnostic specimens for verification and public health response purposes under the IHR.
Sendai Framework for Disaster Risk Reduction	2015-2030	Related to the purpose and scope of the IHR (2005) "to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade."
The 2030 Agenda for Sustainable Development	2015	Related to the requirement for all States to ensure public health system strengthening, and the collaboration between States to achieve this. Member States are urged to (1) to build, strengthen and maintain the capacities required under the International Health Regulations (2005), and to mobilize the resources necessary for that purpose; (2) to collaborate actively with each other and WHO in accordance with the relevant provisions of the International Health Regulations (2005), so as to ensure their effective implementation; (3) to provide support to developing countries and countries with economies in transition if they so request in the building, strengthening and maintenance of the public health capacities required under the International Health Regulations (2005).
Paris Agreement under the UN Framework Convention on Climate Change	2016	Builds on the purpose of IHR and the Sendai framework to strengthen public health systems for prevention of public health emergencies that may be caused or exacerbated by climate change.
Grand Bargain on humanitarian financing	2016	Relates to the call for Member states to provide support to developing countries and countries with economies in transition if requested, in the building, strengthening and maintenance of the public health capacities, and the mobilization of financial resources to facilitate this.

The Sendai Framework for Disaster Risk Reduction is particularly notable as it outlines the vital 'all-hazards' approach, working at the intersection of disaster risk reduction, sustainable development and climate change. The Sendai Framework comprises a commitment to health systems strengthening initiatives including the implementation of the IHR, building and improving resilient systems and enhancing cooperation between health authorities and other relevant stakeholders. Further work is required to provide clarity to the

DRAFT

role of the Sendai Framework in contributing to preparedness in global health security by understanding the health hazards better, and no efforts to better connect and integrate the IHR with the Framework have been established as yet.

In 2019, WHO published the Health in Emergencies and Disaster Risk Management Framework and launched a thematic platform and research network, further linking Health and the IHR with disaster risk reduction.

The collaboration between the FAO, OIE and WHO, known as the Tripartite, is another notable high-level initiative (Box 6) and significant efforts are being made to harmonise the governance and regulatory frameworks across the public health and animal health sectors. The WHO and OIE facilitate three-day National Bridging Workshops, specifically between the IHR and the OIE's Performance of Veterinary Services (PVS) Pathway, to analyse and improve the collaboration between the two sectors in preventing, detecting and responding to zoonotic diseases and other risks at the animal-human interface. Preliminary findings from the NBWs show a strong need for better coordination at the local level; many countries have set up a One Health supra- or inter-ministerial committee, but the effects may not cascade down to the technical and local levels. In-depth analyses of the Workshops are underway.

Box 6: One Health and the Tripartite collaboration

In recognition of the fundamental links between human health, animal health and the state of the environment, the concept of 'One Health' emerged and has fostered greater collaboration at the human-animal-ecosystems interface over the past 15 years. The Tripartite collaboration is evidence of this movement: the collaboration expressed their collective commitment to strengthen multi-sectoral collaboration and coordination in 2010 in the Tripartite Concept Note. The collaboration has evolved significantly since 2010, from exchanging ideas to sharing a common vision for a healthy and sustainable future. The three lead technical agencies have established global norms and standards for operating under the One Health ethos, produced guidelines, work plans and publications on numerous disease threats—the latest on *Taking a Multisectoral, One Health Approach: Tripartite Guide to Addressing Zoonotic Disease in Countries* released in early 2019. Although being a higher-level structure, the Tripartite has several operational mechanisms, for example the OIE/FAO global network of expertise on animal influenza (OFFLU) in close collaboration with the WHO.

In May 2018, the Tripartite reaffirmed and formalised their commitment in a Memorandum of Understanding, focusing on One Health, health systems strengthening, forecasting information systems, emergency response and AMR. Beyond their core focus areas, the Tripartite has achieved inter-institutional trust and support, built and maintained strong working relationships, and shared expertise in ways that were previously more siloed, for example through secondments between different organizations and regional offices. In terms of preparedness, one interviewee observed a focus on WHO and human health, in part due to different stakeholders involved, understandings of preparedness and technical requirements, for example marketplaces, value chains and transport require specialised knowledge and expertise. Where the Tripartite converge however, and encourage collaboration across government structures and sectors, is on the importance

PRE-PEER-REVIEW DRAFT

of information sharing.

To expand funding, the Tripartite has set up a multi-partner trust fund to pool funds and resources. In recognising their own limitations, the Tripartite set up the "Tripartite Plus", to extend the collaboration to key institutions, such as the WTO, the UN Environment Programme and UNICEF, when a gap in capacity and expertise is identified for a particular issue. There is a need to improve relations with environmental counterparts and ensure coordination is always trilateral, rather than bilateral, but as one interviewee states, "*we're all believers in the Tripartite Plus, and that's half the battle*".

Regional development banks have been developing innovative ways to encourage countries to invest in health infrastructure. The Asian Development Bank has found success in providing large loans for health infrastructure alongside smaller grants that cover the interest of those loans.[71] The European Bank for Reconstruction and Development (EBRD) undertakes an environmental and social due diligence process for each project. The guidelines for this process were recently updated to include considerations of antimicrobial resistance (AMR), although official metrics for success on AMR are needed.[72] The EBRD also provides technical support to healthcare infrastructure projects in the form of foreign IPC experts to assist hospitals in developing and maintaining appropriate infection prevention and control measures. The EBRD is already in regular communications with AMR counterparts at the World Bank, and conversations with the Asian Development Bank have recently been initiated. One interviewee spoke of the global challenge presented by AMR, but also opportunity to develop new technologies, build and strengthen cross-sectoral, regional and global networks, and improve best practices, presented by a problem the scale of AMR.[73]

In the meantime, other global networks and institutions have at various times prioritised health emergency preparedness. These include the G7 and G20 which have both included health security issues in their agendas: at the 2016 G7 Summit, for example, G7 countries agreed to use the WHO Strategic Partnerships (SPH) Portal to track G7 IHR investments in 76 countries.[74] These efforts, and those of the international financial institutions should be sustained through greater engagement of these groups by WHO and the GPMB.

PRE-PEER-REVIEW DRAFT

[71] Reported by Patrick Osewe speaking on behalf of the Asian Development Bank at the 2019 Global Health Security Conference in Sydney, Australia

[72] European Bank for Reconstruction and Development, "Environmental and Social Policy," accessed September 13, 2019, //www.ebrd.com/news/publications/policies/environmental-and-social-policy-esp.html.

[73] This interviewee highlighted the work of Farm Animal Investment Return Risk (FAIRR) in influencing institutional investments into transnational restaurants that are actively addressing the issue of AMR in their protein supply chains. The EU also recently legislated that antibiotic use in animals requires a veterinarian's prescription – a further indication that there is a significant role for regional bodies to play in preparedness activities and many are currently being supported by WHO.

[74] Ilona Kickbusch et al., "Germany's Expanding Role in Global Health," *The Lancet* 390, no. 10097 (2017).; World Health Organization, "SPH Country Planning," accessed September 13, 2019, https://extranet.who.int/sph/country-planning.; Organisation for Economic Cooperation and Development, "G20 Health Ministerial Meetings - OECD," accessed September 13, 2019, https://www.oecd.org/health/health-systems/g20-health-ministerial-meetings.htm.; Global Health Security Initiative, "About GHSI," accessed September 13, 2019, http://www.ghsi.ca/english/index.asp.

Working across the analogous objectives of these frameworks with stakeholders and like-minded partners both within and outside of the health sector is crucial for delivering effective health emergency preparedness and response through these frameworks. As the global convener on health, WHO should be at the forefront of recognising overlapping priorities and bringing in networks and institutions that work across these objectives. WHO's leadership through its preparedness Strategic Partnerships Portal through which it facilitates the development of strategic cooperation and partnership between and within countries in partnership with regional and internationals partners, donors and networks and on the Global Action Plan for Healthy Lives and Well-Being for All, bringing together institutions and networks working on SDG 3, healthy lives and well-being, is an excellent example of its cross-sectoral convening efforts and further potential.[75]

PRE-PEER-REVIEW DRAFT

[75] World Health Organization, "Upcoming Non-State Actor Consultation on the Global Action Plan for Healthy Lives and Well-Being," accessed September 13, 2019, https://www.who.int/sdg/global-action-plan/upcoming-non-state-actor-consultation-on-the-global-action-plan-for-healthy-lives-and-well-being.

6. Transforming the political economy for health and well-being

Summary

- Increased funding is needed to finance health emergency preparedness and response activities but financing under the current political economy.
- Transformation is required to overcome the neoliberal political economy that consistently undermines the objectives of the IHR by prioritising economic growth and profit over the equitable distribution of wealth and the provision of public goods and services.
- Gross Domestic Product (GDP) is a flawed system for measuring a successful economy, yet the national and global emphasis on GDP growth has facilitated the expansion of neoliberal capitalist policies, including the privatisation of healthcare and other public goods. A growing number of trade agreements are further entrenching these principles.
- An economic case for increased investment in health emergency preparedness and response must also include adequate support and recognition for the people who are expected to deliver those activities as part of the healthcare system. This economic case must therefore be made in parallel with the long-term drive for an economy that cares for and values the work of all its people: an economy that prioritises public good over profit, and the improved health and gender equality outcomes that will flow from it.
- Without a definitive change in how we view a successful economy, the economic case for investing in health outcomes will continue to be driven by the impact of health on the economy, and not the impact of the economy on health. This will leave those who offer little to the formal economy most vulnerable.
- A caring economy for health and well-being is needed to build a world that is free of health inequalities, where all people can receive both coverage and security through a readily accessible and affordable healthcare system.

PEER-REVIEW DRAFT

Unfortunately, the goals of the IHR and many of the complementary treaties and frameworks highlighted in the previous section are consistently undermined by the prevailing international political economy and the way we as a global community define economic success. Most interviewees highlighted the need for strategic use of existing data, such as historical IHR annual self-reporting forms, plus increased monitoring and coordination of investments and their outcomes to create a stronger economic case for preparedness and response financing. There are also important lessons to be learnt from non-health sectors and stakeholders who are increasingly investing in health and health infrastructure. However, for longer term sustainability of healthcare and good health outcomes, including the prevention and detection of, and effective response to, health emergencies, another conversation is needed: it is beholden on the global health community to work with like-minded partners on re-orienting global and national discussions about what strong and successful economies are for, in order to transform the focus of national economies from profit to the provision of public goods. A successful economy should be measured by the number of healthy lives it supports free from poverty and discrimination.

Defining a successful economy

In today's political economy, a successful economy is not one that shares resources equitably and provides affordable public goods and services to its population. Instead, a successful economy is defined as one that increases GDP *ad infinitum*. Instead, a successful economy is defined as one that increases GDP *ad infinitum*. This idea stems from the assumption that an increase in GDP necessarily increases livelihoods and general welfare.[76] However, the flaws of GDP as a measurement of a successful economy have been well asserted.[77] Prioritizing efficiency over equity, and profit over public good has seen exponential increases in global GDP: wealth that has been collected by the few, to the detriment of the many.[78]

There are number of reasons why lionising GDP increases undermines the delivery of health coverage and security. First and foremost, a focus on GDP prioritizes economic growth as an end in and of itself, rather than as a means for improving well-being and livelihoods.[79] Under these conditions, what is measured by GDP forms what is prioritised by national governments. Developed during the Second World War as an accounting system for a war economy, GDP covers the formal sector, and excludes informal sector and unpaid care work – the latter two are predominantly performed by women. As such, the current calculation of GDP is not just an inaccurate form of measuring the totality of a country's economic activities (that is, "the production, distribution, and consumption of goods and services"[80]) but is inherently biased towards male-dominated work in the formal sector.

The utilisation of GDP as the primary economic accounting measure has also facilitated the prevailing neoliberal capitalist political economy.[81] The impact and implications of neoliberal globalization on global and country efforts to achieve health security and health equity are described in Box 7.

The Sustainable Development Goals (SDGs), and the Millennium Development Goals (MDGs) before it, have in some way attempted to shift the metrics used to define success. So too have alternative indices, such as the UN Human Development Report, the Happy Planet Index, and the World Happiness Report.[82] International institutions like the OECD and the World

PRE-PEER REVIEW DRAFT

[76] Thomas Piketty, *Capital in the Twenty-First Century* (Cambridge Massachusetts: The Belknap Press of Harvard University Press, 2014); Joseph E Stiglitz, Amartya Sen, and Jean-Paul Fitoussi, *Mismeasuring Our Lives: Why Gdp Doesn't Add Up* (The New Press, 2010).
[77] Marilyn Waring and Gloria Steinem, *If Women Counted: A New Feminist Economics* (Harper & Row San Francisco, 1988); Stiglitz, Sen, and Fitoussi, *Mismeasuring Our Lives: Why Gdp Doesn't Add Up*; BF Giannetti et al., "A Review of Limitations of Gdp and Alternative Indices to Monitor Human Wellbeing and to Manage Eco-System Functionality," *Journal of Cleaner Production* 87 (2015); Joseph E. Stiglitz, Jean-Paul Fitoussi, and Martine Durand, Beyond Gdp: Measuring What Counts for Economic and Social Performance, (OECD, 2018), https://www.oecd-ilibrary.org/content/publication/9789264307292-en.
[78] Piketty, *Capital in the Twenty-First Century*.
[79] Amartya K Sen, *Development as Freedom* (Oxford University Press, 2001).
[80] Merriam-Webster, "Economic," accessed September 13, 2019, https://www.merriam-webster.com/dictionary/economic.
[81] Lorenzo Fioramonti, "Why Capitalism Wins. And How a Simple Accounting Move Can Defeat It," The Conversation, accessed September 17, 2019, http://theconversation.com/why-capitalism-wins-and-how-a-simple-accounting-move-can-defeat-it-83821.
[82] Happy Planet Index, "Happy Planet Index," Happy Planet Index, accessed September 13, 2019, http://happyplanetindex.org; Canadian Institute for Advanced Research, "World Happiness Report 2019," accessed September 13, 2019, http://worldhappiness.report/; United Nations Development

Economic Forum are increasingly producing research and focusing on the need to move beyond GDP.[83] And yet, these practices have rarely shifted the way national budgets are prioritised or measured by national finance ministries.[84] In a world first, the New Zealand government has recently published its new "well-being budget", which prioritizes health and well-being outcomes over GDP.[85] Its successes and challenges will be closely monitored.

Box 7: Neoliberal globalization, free trade and health

Neoliberal globalization is the "process of rapid economic integration between countries"[86] under pro-business principles that seek to privatize public services, decrease government regulation of the economy and allow supply and demand to set market prices.[87] Since the 1980s, globalization has created a unified global market. The neoliberal principles underpinning globalization have led to the preferential treatment of those few with capital, in both high- and low-income countries, and their objective to maximize profit, often to the detriment of public good.[88]

The 32-year period of neoliberalism between 1980 and 2012 saw the income of the bottom 90% of the global population decrease by 6%, the average income increase by 24% and the top 0.1% of the global population increased by a colossal 312%.[89] During this same period, average North American and European national incomes were three and two times the global average, while average sub-Saharan Africa and Latin American incomes fell further below the global average.[90] Thus the negative impacts of globalization have been most readily felt in low-income countries, of which most are previously

UNDER-PEER-REVIEW DRAFT

Programme, "Human Development Index (HDI) | Human Development Reports," accessed September 13, 2019, http://hdr.undp.org/en/content/human-development-index-hdi.

[83] Stiglitz, Fitoussi, and Durand, *Beyond Gdp: Measuring What Counts for Economic and Social Performance*., "Beyond GDP," World Economic Forum, accessed September 17, 2019, https://www.weforum.org/focus/beyond-gdp/.

[84] Government corruption, and corruption within the healthcare sector, also plays a significant role in the state's ability to provide public services and the peoples' ability to access affordable healthcare, but this is outside the scope of this report. On state corruption see David Hall, "Corruption and Public Services," Public Services International, accessed September 17, 2019, https://www.psiru.org/reports/corruption-and-public-services.html. On corruption in the healthcare sector see Transparency International UK, "Diagnosing Corruption in Healthcare," Transparency International UK, accessed September 17, 2019, https://www.transparency.org.uk/publications/diagnosing-corruption-in-healthcare/.

[85] Joan C. Tronto, *Who Cares? How to Reshape a Democratic Politics* (Ithaca, NY: Cornell University Press, 2015).

[86] International Labour Organization, *A simple definition of globalization,* http://www.ilo.org/public/english/standards/relm/gb/docs/gb276/sdl-1.htm#A%20simple%20definition%20of%20globalization

[87] Andrew Glyn, *Capitalism Unleashed: Finance, Globalization, and Welfare* (Oxford University Press, 2007).

[88] International Labour Organization, *A Fair Globalization: Creating Opportunities for All*, 2004, http://www.ilo.org/global/publications/ilo-bookstore/order-online/books/WCMS_PUBL_9221154262_EN/lang--en/index.htm.

[89] Piketty, *Capital in the Twenty-First Century*.

[90] World Inequality Lab, "World Inequality Report 2018," accessed September 13, 2019, https://wir2018.wid.world/.

colonised countries who attained their independence just as the prevailing ideology of the international political economy was turning towards neoliberalism.[91] The spread of neoliberal policies was aided by the World Bank and International Monetary Fund (IMF) loan conditions requiring the privatisation of healthcare and other public services. The latter actually led to reduced health expenditure in several African countries and is considered by critics to have directly contributed to the magnitude of the 2014-16 West Africa Ebola outbreak.[92]

Neoliberalism has exacerbated existing social inequalities. As public services became privatised, and land, labour and money were commodified in the 1980s, people living in poverty, particularly those in low- and middle-income countries, have been subject to poorer health,[93] land grabs, poor labour conditions and increasing amounts of debt and exclusion from the global market due to high interest rates that make it difficult to borrow money. Furthermore, the realities of neoliberalism are not new to the health community. In 2010, the WHO published its *Conceptual Framework for Action on the Social Determinants of Health*, which highlighted the importance of social and economic structural determinants on health inequalities, and the role of neoliberalism in emphasising efficiency over equity and subsequently reducing access to healthcare services.[94]

While being more responsive to poverty and inequality issues in their rhetoric, the IMF and World Bank continue to lead a global push towards privatisation and deregulation, leading the International Labour Organization (ILO) to coin the current era as 'the age of austerity'.[95] These policies have been further aggravated by the World Bank's adoption of its 'Maximising Finance for Development' approach, which explicitly establishes a private sector-first strategy to crowd private investment into infrastructure and public services provision.[96]

A burgeoning number of bilateral and regional free trade agreements are further perpetuating neoliberal policies that privilege corporations over public good. The UN describes the impacts of free trade as “double-edged”, encapsulating both the opportunities and threats experienced by people living in countries participating in free trade agreements.[97] Increasingly,

PRE-PEER-REVIEW DRAFT

[91] Ha-Joon Chang, “Only Protection Can Build Developing Economies,” accessed September 13, 2019, https://www.globalpolicy.org/component/content/article/162/27898.html.
[92] Bretton Woods Project, “The IMF’s Role in the Ebola Outbreak,” Bretton Woods Project, February 2, 2015, https://www.brettonwoodsproject.org/2015/02/imfs-role-ebola-outbreak/.
[93] Ronald Labonté and David Stuckler, "The Rise of Neoliberalism: How Bad Economics Imperils Health and What to Do About It," *J Epidemiol Community Health* 70, no. 3 (2016).
[94] World Health Organization, “A Conceptual Framework for Action on the Social Determinants of Health,” WHO, accessed September 13, 2019, http://www.who.int/social_determinants/publications/9789241500852/en/.
[95] Isabel Ortiz and Matthew Cummins, "The Age of Austerity: A Review of Public Expenditures and Adjustment Measures in 181 Countries," *Available at SSRN 2260771* (2013).
[96] Bretton Woods Project, “Gender-Just Macroeconomics II: The World Bank’s Privatization Push,” Bretton Woods Project, March 11, 2019, https://www.brettonwoodsproject.org/2019/03/gender-just-macroeconomics-ii/.
[97] UNCTAD (2016) Trade, Gender and Development: advocating inclusive and gender-sensitive development on a global level, http://unctad.org/en/PublicationsLibrary/ditcmisc2016d6_en.pdf

free trade agreements have extended their mandate beyond goods and services, and there are myriad ways in which free trade agreements undermine access to public services such as healthcare, rights at work, and to sustainable livelihoods.[98]

Preventing countries from legislating in favour of health and human rights

Investor-State Dispute Settlement (ISDS) clauses are increasingly being added to free trade agreements. ISDS clauses allow foreign companies to sue governments when they legislate in ways that are perceived to harm company profits. Countries may support ISDS clauses because they are beneficial to their private companies operating overseas. However, ISDS clauses can prevent governments from legislating for public health and affirmative action, or returning private health and transport services to public hands where these actions are considered to infringe on the profits or expected profits of companies.[99] ISDS clauses prioritize investor rights over human rights.[100]

Reducing access to affordable public services and medicines

Free trade agreements aim to reduce tariffs and taxation on foreign companies that depletes state revenue for the provision of public services, infrastructure and social protection. These agreements also require states to be open to all foreign investments, leaving public services available for privatization. In addition to increasing the cost of previously affordable services, privatization incentivizes profit making such that services are targeted towards those that can pay. Women are more reliant on affordable public services than men and thus a lack of public services increases the women's burden of unpaid care. Governments also attempt to make up for the reduced revenue by increasing other types of tax, most commonly value-added or goods and services tax (VAT or GST). VAT revenue generally falls short of overcoming losses through free trade, and tends to be regressive, disproportionately impacting women and people living in poverty.[101]

Free trade agreements can also invoke intellectual property rights that prevent the development of affordable generics and threaten access to medicines.[102]

Limiting economic opportunities for women and other vulnerable groups

At their heart, free trade agreements are designed to take advantage of lower wages through 1) deregulation of the labour market; 2) privatization

PRE-PEER REVIEW DRAFT

[98] Rachel Noble, "From Rights to Rhetoric: Towards Gender-Just Trade," (2018), https://www.actionaid.org.uk/publications/from-rhetoric-to-rights-towards-gender-just-trade.
[99] Ibid.
[100] For example, the Australian government spent AUD$39 million defending tobacco plain packaging laws: https://www.theguardian.com/business/2018/jul/02/revealed-39m-cost-of-defending-australias-tobacco-plain-packaging-laws
[101] United Nations Conference on Trade and Development, "Unfolding the Links," accessed September 13, 2019, https://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=1137.
[102] Clauses on the intellectual property of medicines in the original Trans-Pacific Partnership were suspended following the withdrawal of the US. Centre for Strategic and International Studies, "From TPP to CPTPP," accessed September 13, 2019, https://www.csis.org/analysis/tpp-cptpp.

of the public sector where women are majority employees; 3) driving small and medium enterprises which are often run by women and those living in poverty out of the market when they are forced to compete with large transnational companies. These policies maintain structural inequalities, concentrating women and those living in poverty in jobs with poor working conditions and low wages which contributes to poor health outcomes and increased challenges in accessing healthcare.

Since at least 2002, WHO has encouraged states to address the health implications of bilateral and multilateral trade agreements.[103] Recent trade negotiations, including the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTTP or TPP-11) and the Pacific Agreement on Closer Economic Relations (PACER-Plus), suggest this advice is either not being heeded, or that countries that are most vulnerable to the negative impacts of free trade do not have the political leverage to limit foreign economic investments so as to protect the health of their populations.[104] Neoliberalism presents considerable barriers to the implementation of country commitments to health security and health equity.[105]

Creating an economy for health and well-being

To challenge prevailing neoliberal ideologies, and ensure global policy coherence, a transformational idea is required. In addition to hammering away at individual aspects of neoliberalism – explaining and providing evidence for the detrimental effects of privatisation and the deregulation of corporations, for example – a grand narrative is required that can challenge neoliberalism and the way in which current capitalist economies structure their societies and measure their view of what makes a successful economy. The vision of a global, regional and national economy for health and well-being, herein titled a 'caring economy' per Tronto, provides such a narrative.[106]

A caring economy recognizes that each of us is inherently vulnerable: that we all at one point or another require the care of others, and that we will also be involved in delivering care to others. As such, as economy centred on care can encourage national and global communities to measure success through the provision and receipt of care as a fundamental human need. In the last four decades, capitalist democracies have entrusted neoliberalism to deliver care where it is demanded: this has proven wholly insufficient. Indeed, the successes that have been attributed to neoliberalism have co-existed with the

[103] World Health Organization, "WTO Agreements and Public Health," WHO, accessed September 13, 2019, https://www.who.int/trade/resource/wtoagreements/en/.; World Health Organization, "Trade and Health: Towards Building a National Strategy," WHO, accessed September 13, 2019, https://www.who.int/phi/documents/trade-and-health/en/.

[104] To this end, it is important to note that the two largest economies in the Pacific, Fiji and Papua New Guinea, have not engaged with PACER Plus negotiations with Australia, New Zealand and other Pacific island states: experts have speculated this is because of the unfair trade terms which unfairly prioritise the interests of Australia and New Zealand. https://thediplomat.com/2018/03/pacer-plus-minus-tonga/

[105] World Health Organization, "A Conceptual Framework for Action on the Social Determinants of Health."

[106] Joan C Tronto, *Caring Democracy: Markets, Equality, and Justice* (NYU Press, 2013). A 'wellbeing economy' has also been well articulated by the Wellbeing Economy Alliance: "From the Old Way to the New Way: How a Wellbeing Economy Will Respond to Issues Differently – Wellbeing Economy Alliance," accessed September 17, 2019, https://wellbeingeconomy.org/oldwaynewway.

PRE-PEER REVIEW DRAFT

increase in care work contribution by women – raising the next generation without childcare support; feeding and doing the laundry of the current working generation whilst undertaking their own paid employment; and caring for the elderly and the sick without aged care services or adequately funded public health facilities that were, in the case of many Western democracies, previously provided by the state.[107] Thus, it is care work that supports the economy of every country and yet the vast majority of countries do not recognise, measure or sufficiently support care work nor the people, typically women, who deliver it.[108]

A global conversation and a transformational shift of the international political economy is needed to achieve the goals set within the IHR and throughout the WHO's *Global strategy on human resources for health: Workforce 2030*.[109] As WHO and proponents call upon states to provide Universal Health Coverage and Global Health Security, the gendered dynamics of the healthcare workforce cannot be forgotten: women currently provide the majority of unpaid care and also comprise the majority of the health workforce. As such, increased investment in healthcare needs to occur in parallel with increased support for those who work in healthcare so that they do not bear the double burden of caring at work and the unequal division of care responsibilities at home.

This is largely recognised by the WHO's *Global strategy* and yet, the Strategy's focus remains firmly fixed within the health sector alone: the limitations of the global health community and national health systems to ensure health coverage and security are directly related to the prevailing international political economy. Harman has provided evidence for how the gendered dynamics of care and healthcare contributed to the 2014-16 West Africa Ebola outbreak yet largely went unrecognised.[110] The perception that care giving is natural, and subsequently, that women are natural care-givers, must be challenged by placing care in its societal context and working to recognise it, reduce it through public services and redistribute it through transformative gender policies that also allow and encourage men to contribute more to care work.[111]

Such an economy requires that global bodies, like WHO and the GPMB, work in partnership with international financial institutions, such as the World Bank, and national institutions to champion the redefinition of a successful economy. A caring economy refocuses countries and global institutions on its mandate: not economic growth *ad infinitum* but improving the quality of life of all people. This is echoed through the SDGs, including target 5.2 with its commitment to recognise and value women's unpaid and domestic care work. Private sector investment and infrastructure development too, can be wielded

PRE-PEER-REVIEW DRAFT

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[107] Jacqui True, *The Political Economy of Violence against Women* (New York; Oxford: Oxford University Press, 2012).
[108] In October 2018, the State Government of Victoria in Australia released preliminary findings showing that women are doing more than half of the state's care work unpaid, to a cost of AUD$205 billion (USD$105 billion). In a state of 6.4 million, this is the equivalent of 50% of gross state product as it is currently measured. Premier of Victoria, "Women Doing More Than Half The Work For Free," *Premier of Victoria* (blog), October 13, 2018, https://www.premier.vic.gov.au/women-doing-more-than-half-the-work-for-free/.
[109] World Health Organization, "WHO | Global Strategy on Human Resources for Health."
[110] Sophie Harman, "Ebola, Gender and Conspicuously Invisible Women in Global Health Governance," *Third World Quarterly* 37, no. 3 (2016).
[111] Tronto, *Caring Democracy: Markets, Equality, and Justice.*

with health and human rights in mind. Under a caring economy, infrastructure investment does not just mean bridges, roads and office buildings, but hospitals, childcare centres, schools and aged-care homes.[112] Shifting to focus on a caring economy changes our metrics of success from GDP growth almost exclusively, to the level of care given, provided and received, and the role that GDP plays in the ability of countries to support their people to live healthy lives.

Such an economy is fundamental to the realisation of the WHO's *Global strategy on human resources for health: Workforce 2030*. Working with economists and political scientists will be critical to developing the evidence base necessary to encourage this paradigm shift in the focus of the international political economy. This shift also provides opportunities to work with global, regional, national and local institutions and networks already focused on these issues, such as labour and women's rights organizations, as well as others involved in SDG 5 on gender equality, SDG 8 on decent work and economic growth, SDG 9 on industry, innovation and infrastructure, and SDG 10 on reducing inequalities within and between countries.

A short-term economic case, a long-term economic transformation

The development of a compelling short-term economic case is vitally important for immediately increasing investments in health emergency preparedness and response activities. However, any economic case for increased investment in health emergency preparedness and response must also include adequate support and recognition for the people who are expected to deliver those activities as part of the healthcare system. The health sector must make the case for greater investment in health whilst simultaneously acknowledging and seeking to transform the prevailing political and economic ideologies that undermine health coverage and security. The economic case for preparedness and response must therefore be made in parallel with the longer-term drive for an economy that cares for and values the work of all its people: an economy the prioritises public good over profit, and the improved health and gender equality outcomes that will flow from it.

Without a transformation in how we view a successful economy, the economic case for investing in health outcomes will continue to be driven by the impact of health on the economy, and not the impact of the economy on health. This will leave those who offer little to the formal economy most vulnerable and further entrench health inequities, undermining both Universal Health Coverage and Global Health Security. A caring economy is needed in working towards a world that is free of health inequalities, where all people can receive both coverage and security through a readily accessible and affordable healthcare system, supported by countries, global institutions and a political economy that cares.

PRE-PEER-REVIEW DRAFT

[112] Womens Budget Group, "Investing in the Care Economy to Boost Employment and Gender Equality," *Womens Budget Group* (blog), March 31, 2016, https://wbg.org.uk/analysis/investing-in-the-care-economy-to-boost-employment-and-gender-equality/.

Conclusion and recommendations

"We have improved, but we are not there yet"

The key message from the report is that preparedness for outbreaks of infectious disease has been strengthened since 1995 when the World Health Assembly requested WHO revise the IHRs, and in particular, since the 2014-16 West Africa Ebola outbreak. Nevertheless, many challenges remain, particularly the need for sufficient investments that are appropriately balanced between country preparedness and global readiness to respond.

The implications of this analysis centre on a number of issues: the need for greater financing, and the data to track the spending and outcomes of existing and future financing; the need for increased research on a number of areas; the role of WHO headquarters, regional offices and countries and the relative distribution of funds between them; the role of WHO in coordinating and convening the large number of institutions and networks working in country preparedness and global response; and the great need to ensure that priority issues such as community engagement and empowerment, and gender equality are not present in name only, but are sufficiently resourced, monitored and their impact evaluated, along with overall response evaluations.

While most interviewees noted the lack of over-arching governance and the need for more cohesion, monitoring and evaluating, the IHR already exists as a mechanism for such governance. As such, greater coordination under the framework of the IHR is required by WHO: to strengthen its role of convening and coordinating partners, to ensure stronger, more cohesive support for capacity strengthening in countries and for global readiness to respond, and to limit the implementation of travel and trade restrictions by working with countries to understand their motivations and provide evidence-based guidelines on the health and economic consequences of such restrictions. While our research did not suggest any new entities were required, the development of the Global Preparedness Monitoring Board offers a great opportunity for independent accountability and monitoring of WHO and all other institutions and networks involved in health emergency preparedness and response. The analysis undertaken above has informed the findings and conclusions presented to the GPMB below.

It is important to note the all bar one of the report authors come from Global North countries. We sought to ensure that our interview subjects were representative of the breadth of institutions involved in the governance and coordination of health emergency preparedness and response, while also being representative of the global population that WHO and other global health institutions are mandated to serve. Unfortunately, while we achieved a roughly equitable split across men (44%) and women (56%) among our 43 interview subjects, only 10 (23%) came from low- or middle-income countries, despite 85% of the world's population living in those same countries. This inconsistency is largely due to the limited time frame available for undertaking the research in this report, the network of individuals already known to the authors, and the dominance of individuals and organizations from high-income countries across the global health sector. Future research on this issue should better incorporate the diversity of views of those at the local, national, and regional levels.

PRE-PEER-REVIEW DRAFT

The disproportionate representation of individuals and institutions from the Global North is neither new nor uncommon in global health. Indeed, the three post-2014 Ebola outbreak review panels that informed our analysis had a total of 45 authors (including two who contributed to both the Harvard-LSHTM and Commission reports), of which 38% were women, 24% represented low- and middle-income countries, and only 13% were from West Africa. There were two (4%) contributors from Liberia, one from Sierra Leone, and no contributors from Guinea yet 16 (36%) from the USA alone. This issue was the subject of a commentary by Bernice Dahn, Liberian Minister of Health during the Ebola outbreak: the voices of those most affected by outbreaks, Ebola or otherwise, must be at the forefront of preparedness and response activities and reviews.[113] Many of the priorities highlighted in her commentary are repeated within this report. Future reports and policies must consider and address the implications of the background of its authors and those who are selected for interview to ensure a diversity of views are represented and that the views of those most affected are prioritised.

Finally, the recommendations identified in this report and our linked reports, will mean little if they are not monitored and updated over time. The lack of data available for truly understanding who is acting where, how much funding or in-kind support they are putting into the system, and the outcomes of that work, both successes and failures, is a significant challenge to global, regional and national preparedness and response efforts. Overcoming this challenge requires the motivation and funding to determine which areas require further research, the development of appropriate indicators, and a regular schedule for data collection (quantitative and qualitative) and evaluation. The collection and analysis of data is key to improving the legibility of the system – by identifying gaps and undertaking research to inform potential solutions, and affirming an inclusive, consultative-based, data-driven high-level strategy for health emergency preparedness and response over the next 5-10 years.

Recommendations for the Global Preparedness Monitoring Board

Collect, collate and analyse data to build the economic case for investment

1. Establish, strengthen or integrate a tracking mechanism for financial and in-kind support to country preparedness and global readiness and response, and the coordination of these support activities. This tracking mechanism should include metrics for community engagement and empowerment, gender equality, and the integration of context into preparedness and response activities;
2. Produce an annual report summarising the state of global support for country preparedness and global readiness to respond, including case studies of successes and failures. Reports should be used to inform the development of an economic case to encourage countries and global supporters to invest more in preparedness activities, and track the relative contributions to global, regional, country and local level activities.

[113] Bernice Dahn et al., "Getting Pandemic Prevention Right," *The Lancet*, no. 10075 (2017).

PRE-PEER REVIEW DRAFT

Convene and coordinate

3. Encourage WHO to strengthen its coordination of institutions and networks involved in country preparedness and global readiness to respond through regular convenings at the international, regional and country level, including more cohesive and cross-sectoral engagement in all phases of preparedness planning (e.g. the animal, environmental, economics, educational, political science, and social science aspects as well as the security and private sectors);
4. Encourage WHO to ensure clear roles and responsibilities of all actors and cost-effective coordination of resources at global and local levels;
5. Work with WHO and countries to support the development of costed national action plans, that are prioritised according to country needs and in partnership with communities. WHO should facilitate the streamlining of application and reporting procedures of donors to reduce the administrative burden on countries.

Strengthen, monitor and research preparedness and readiness activities

6. Encourage WHO and other institutions and networks to continue increasing their focus on training, supported by opportunities for employment, to strengthen global and local readiness capacity. Regular top-up training and integrated multi-sectorial simulation exercises are recommended to keep skills up to date;
7. Encourage WHO to employ multidisciplinary and non-health staff to assist in providing interdisciplinary support for countries;
8. Encourage WHO to work with ministries of health and IANPHI to systematically map all healthcare facilities in every country so as to establish a base platform of healthcare provision through which to deliver both coverage and security;
9. Commission the mapping of preparedness and response needs against current capacities to handle multiple, concurrent large-scale outbreaks;
10. Commission research on the shift of response-institutions to local- and national-level readiness, including funding and training provisions, and how these non-state systems align with, strengthen or oppose, state-focused preparedness and response activities;
11. Encourage WHO to integrate new technology for health emergency response, and ensure ready access to available technologies at the point of onset of a health emergency;
12. Monitor the effectiveness of IASC protocols in calling on global support systems and resources for large-scale health emergencies;
13. Commission research on the organisational structures, systems and operational capacity for WHO collaboration and coordination at the global, regional, country and community levels for preparedness and response;
14. Commission research on the work being undertaken by WHO and others on health system strengthening in fragile and conflict-affected contexts with the aim of understanding current activities and gaps to filled.

Prioritise preventing unnecessary travel and trade restrictions

PEER-REVIEW DRAFT

15. Work with Member states to continue to identify a warning system that calls attention to an outbreak with a risk of national or sub-regional spread that does not yet fulfil the requirements of a PHEIC;
16. Encourage WHO to implement a system of publishing online a list of countries and private companies that implement travel and trade restrictions beyond WHO temporary recommendations during health emergencies;
17. Commission research on the decision-making processes of countries and private companies that implement unnecessary travel and trade restrictions and the factors that influence them.

Reconsider the role of WHO

18. Encourage WHO to consider the proposition of further devolvement of human and funding resources from headquarters to country office and regional level;
19. Encourage WHO to continue monitoring the impact of their newly announced HR policies, with particular emphasis on policies that seek to transform gender inequalities and diversify country representation at all levels of WHO;
20. Commission research on the roles, responsibilities, relationships, activities and outcomes of the regional and country offices to support any devolvement process and the best possible re-allocation of resources;
21. Encourage WHO to strengthen the capacity of and relationships with deployable regional and country level partners; and explore how best to provide a surge workforce with a view to developing a business case to finance this workforce in the intervening years until regional response capacities are sufficient to take on this role.

Work to transform the global political economy for health and well-being

22. Work with WHO to strengthen awareness of and attention to health emergency preparedness and response issues at key international events, such as annual G7 and G20 meetings, and among an expanded base of institutions and other support bodies, including international financial institutions;
23. Work with like-minded partners to reimagine the meaning of a successful economy: an economy that prioritises care over profit through the provision of public goods that lead to greater health security and coverage for all;
24. Investigate the necessary research and discussions required to target the international political economy beyond health and work with like-minded, non-health partners to transform current measures of national and global success from economic growth to the equitable provision and receiving of care.

PEER-REVIEW DRAFT

Appendices

Appendix 1: Glossary

Accountability
Obligation to demonstrate that work has been conducted in compliance with agreed rules and standards or to report fairly and accurately on performance result vis-a-vis mandated roles and/or plans. Accountability is the means used to hold persons/entities responsible for their actions.[114]

Coordination
The organization of the different stakeholders so as to enable them to work together effectively, through synchronization and integration of activities, responsibilities, and command and control structures to ensure that the resources are used most efficiently in pursuit of the specified objectives. There can be three levels of coordination: among organisations, among functions, and within programmes. [115]

Global health governance
The use of formal and informal institutions, rules, and processes by states, intergovernmental organizations, and non-state actors to deal with challenges to health that require cross-border collective action to address effectively.[116]

Global Health Security
The activities required to minimize the danger and impact of acute public health events that endanger the collective health of populations living across geographical regions and international boundaries.[117]

Preparedness
The development of national, intermediate and community/primary response level public health emergency response plans for relevant biological, chemical, radiological and nuclear hazards. Other components of preparedness include mapping of potential hazards and hazard sites, the identification of available resources, the development of appropriate national stockpiles of resources and the capacity to support operations at the intermediate and community/primary response levels during a health emergency.[118]

Public health emergency
A public health emergency is "an occurrence or imminent threat of an illness or health condition, caused by bio terrorism, epidemic or pandemic disease, or

PRE-PEER-REVIEW DRAFT

[114] World Health Organization, "Definitions: Emergencies," WHO, accessed September 13, 2019, https://www.who.int/hac/about/definitions/en/.
[115] Ibid.
[116] David P Fidler, *The Challenges of Global Health Governance* (Council on Foreign Relations, Incorporated, 2010).
[117] World Health Organization, "Health Security," WHO, accessed September 13, 2019, http://www.who.int/health-security/en/.
[118] World Health Organization, "Preparedness," WHO, accessed September 13, 2019, http://www.who.int/ihr/preparedness/en/.

(a) novel and highly fatal infectious agent or biological toxin, that poses a substantial risk of a significant number of human facilities or incidents or permanent or long-term disability".[119]

Public Health Emergency of International Concern
A PHEIC is defined in the IHR (2005) as, "an extraordinary event which is determined to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response". This definition implies a situation that is: serious, sudden, unusual or unexpected; carries implications for public health beyond the affected State's national border; and may require immediate international action.

Readiness
The ability to quickly and appropriately respond when required.[120]

Response
Response includes immediate actions to save lives, protect property, and meet basic human needs. Response also includes the execution of emergency operations plans.[121]

PRE-PEER-REVIEW - RAFT

[119] World Health Organization, "WHO | Definitions."
[120] United Nations Office for Disaster Risk Reduction, "Report of the Open-Ended Intergovernmental Expert Working Group on Indicators and Terminology Relating to Disaster Risk Reduction - UNDRR," accessed September 13, 2019, https://www.unisdr.org/we/inform/publications/51748.
[121] Adapted from US Department of Health & Human Services, "Glossary," accessed September 13, 2019, https://www.phe.gov/Preparedness/planning/mscc/handbook/Pages/appendixd.aspx.

Appendix 2: Implementation status of recommendations

Implementation status of 26 governance and coordination recommendations from UN High Level Panel on Global Response to Health Crises (UNHLP), the Harvard-London School of Hygiene and Tropical Medicine Panel (HLSHTM) and the Commission on a Global Health Risk Framework (CGHRF).
Colour of status column indicates whether the recommendation was considered implemented (green), implemented in part or requiring ongoing implementation (orange), or not implemented (red).

Recommendation	Status	National or Global IHR relevance
EVOLUTION OF THE GLOBAL HEALTH ARCHITECTURE		
1. By the end of 2016, WHO and national governments should enhance means of cooperation with non-state actors, including local and international civil society organizations, the private sector, and the media. (GHRFC)	**Ongoing implementation: WHO emphasises partnerships with other multilateral and technical organizations, civil society and other clusters at the country level.[122] WHO Framework on Engagement with Non-State Actors: WHO official relationships with 217 non-state actors, including industry-wide bodies and global federations, and organizations in the humanitarian response, development, health research, and philanthropy sectors.[123]**	**National and global**
1.1 Build on Framework of Engagement with Non-State Actors and develop protocols and build relationships with local and international civil society organizations	WHO non-state actor consultation on Global Action Plan for Healthy Lives and Well-Being for All.[124]	Global
1.2 Build relationships with private companies, including airline and trade industries to be aligned with IHR	Engagement with the WEF Epidemic Readiness Accelerator.	Global
1.3 WHE has anthropological, social media and crisis communications staff to work with media agencies	WHE*: Community engagement integrated horizontally across all sectors of preparedness and response activities.*	Global
WHO REFORM		
2. Decisive, timebound governance reforms will be needed to rebuild trust in WHO in view of its failings during the Ebola epidemic. With respect to outbreak response, WHO should focus on four core functions: supporting national capacity building through technical advice; rapid early response and assessment of outbreaks (including potential emergency declarations); establishing technical norms, standards, and guidance; and convening the global community to set goals, mobilize resources, and negotiate rules. Beyond outbreaks, WHO should maintain its broad definition of health but substantially scale back its expansive	**Ongoing implementation; some recommended duties taken up as below:**	**Global**

[122] World Health Organization, "Emergency Response Framework (ERF)."
[123] World Health Organization, "Non-State Actors in Official Relations with WHO."
[124] World Health Organization, "Global Action Plan," accessed September 13, 2019, https://www.who.int/sdg/global-action-plan.

PRE-PEER REVIEW DRAFT

Recommendation	Status	National or Global IHR relevance
range of activities to focus on core functions (to be defined through a process launched by the WHO Executive Board). (HLSHTM)		
2.1 Executive Board review of WHO constitution and mandate to define its core functions.	The consolidation of WHO's work under four new pillars: programmes, emergencies, external relations and governance, and business operations, announced March 2019. [125]	Global
2.2 Scale back WHO activities according to core functions identified by Executive Board.	Organization-wide consultation process to inform the reforms announced, March 2019; Updated HR processes to link staff objectives to the 13th General Programme of Work.[126] *Gaps identified: WHO staff continue to be over stretched, with insufficient capacity for preparedness and operational response activities; Insufficient resources for effective coordination of institutions and activities at and between global, regional and local level; Better coordination to optimise resources and outcomes needed; Additional scale back suggested, and for WHO to focus on normative preparedness work.*	Global
2.3 A new financing model for assessed contributions focused on core functions and a transparently implemented policy for accepting/rejecting voluntary contributions at country, regional and country offices.	WHO Investment Case, with expected country costs for its 'triple billion' targets, launched 2018;[127] WHO resource mobilization strategy, 2019; WHO Foundation for developing innovative financing opportunities from novel sources, 2019;[128] WHO's first Partners Forum, Sweden,2019.[129] *Gaps identified: Need for additional funding from domestic and global resource; Need for a transparent funding tracking tool to track and coordinate funding; Need to strengthen collaborations with private investors to identify additional sustained funding sources; Need to build the investment case for investing in prevention and preparedness at domestic and global level.*	Global
2.4 Supporting national capacity building through technical advice	WHE's Country Health Emergency Preparedness & IHR unit; WHO normative guidelines and standards; See linked report on country preparedness for further information.	National
2.5 Rapid early response and assessment of outbreaks (including potential emergency declarations)	Implemented	Global
2.6 Establishing technical norms, standards, and guidance for outbreak response.	This is a core part of the WHO's normative activities; the WHO R&D Blueprint; additional support provided by GOARN and other partners; processes for assessing events established; WHO wide grading system linked to operational response. *Gaps identified: staff resource limitations, staff deployment delays normative*	Global

PRE-PEER

[125] World Health Organization, "Transforming for Impact."
[126] Ibid.
[127] World Health Organization, "WHO Launches First Investment Case to Save up to 30 Million Lives," accessed September 13, 2019, https://www.who.int/news-room/detail/19-09-2018-who-launches-first-investment-case-to-save-up-to-30-million-lives.
[128] World Health Organization, "Transforming for Impact."
[129] World Health Organization, "About the Forum," accessed September 13, 2019, https://www.who.int/news-room/events/inaugural-partners-forum/about-the-forum.

Recommendation	Status	National or Global IHR relevance
	work.	
2.7 Convening the global community to set goals, mobilise resources, and negotiate rules.	Core part of WHOs work. *Consensus amongst stakeholders that WHO should continue to lead and coordinate preparedness and response activities and act as the normative body.*	Global
3. The Executive Board to mandate good governance reforms, including a Freedom of information (FOI) policy, an Inspector General's office, and Human resource (HR) management reform, to be implemented by an Interim Deputy for Managerial Reform by July 2017. (HLSHTM)	**Not established; some recommended duties taken up as per sub-recommendations below.**	**Global**
3.1 Member states should insist on a Director-General with the character and capacity to challenge even the most powerful governments.	The WHO DG has the authority to confront Member states and has shown strong, exemplar leadership; Member states have responsibilities to support the WHO DG and can independently add technical and political pressure on states that are contravening the IHR.	National
3.2 FOI policy, with appropriate safeguards, and a permanent Inspector General's office to monitor performance of the organization and its entities, reporting to the Board.	No evidence of implementation.	Global
3.3 Continue work on Framework of Engagement with Non-State Actors.	Framework on Engagement with Non-State Actors adopted at the 69th World Health Assembly, 2016.[130]	Global
3.4 Revise HR policies to attract and retain qualified staff, while letting go of chronic underperformers.	HR reform policies, March 2019: new WHO performance management system with links to objectives, outputs and the 13th General Programme of Work strategy; monthly staff performance reporting and six-monthly reviews; updated headquarter (HQ) recruitment process to cut recruitment time to 80 days; a new career track for senior scientists; a new Global Leadership and Management training initiative; a new WHO Academy; new opportunities for National Professional Officers; revamped internship programme; a diversity and inclusion strategy due by 2019.[131] *Gaps identified: continued slow recruitment processes and recruitment freeze at WHO contributes to existing staff working substantial overtime and on prolonged deployment and the temporary staff compulsory one-month employment gap between contracts; staff turnover leading to loss of knowledge and expertise.*	Global
4. By 2017, the WHO should work with existing formal and informal regional and sub-regional networks to strengthen linkages and coordination to enhance mutual support and trust, sharing of information and laboratory resources, and joint outbreak investigations amongst neighbouring	**Ongoing implementation: WHO organizational structure transformation, from HQ to regional and country office, under four pillars, with a separate preparedness department, March 2019.** ***Stakeholder interviews indicated that the coordination of institutions involved in response has improved in recent years,***	**National**

[130] World Health Organization, "WHO's Engagement with Non-State Actors."
[131] World Health Organization, "Transforming for Impact."

PRE-PEER

Recommendation	Status	National or Global IHR relevance
countries. (GHRFC)	***especially at global level, but it needs strengthening at local level; coordination of country preparedness activities needs strengthening at all levels; indications that the connection between regional offices and headquarters has considerably improved following the establishment of WHE; there is still a need for a shift from vertical, silo working to a horizontal, integrated coordination across all pillars and health systems for optimising resources, outcomes and sustainability.***	
5. The WHO Member states increase their assessed contributions to the WHO budget by at least 10 per cent. (UNHLP)	**Not established: Director-General proposed at 10% increase in assessed contributions in 2016, (USD$93 million addition);[132] WHA Member states agreed to a 3% increase in 2018-19 (USD$28 million),[133] leaving a substantial funding gap. See the linked report on pandemic preparedness financing for more information.**	**Global**
6. Ten per cent of voluntary contributions to WHO, beyond programme support costs earmarked for the centre for emergency preparedness and response. (UNHLP)	**Not established: Earmarking of voluntary contributions not considered desirable by WHO, as it limits flexibility.[134] See our linked report on pandemic preparedness financing for more information.**	**Global**
7. WHO immediately strengthen its leadership and establish a unified, effective operational capacity. (UNHLP)	**Ongoing implementation: WHO positioned as a front-line agency, leading the field operations while providing technical guidance to partners and is "now perceived as a more reliable and credible partner with strong technical expertise and operational capacities, and able to facilitate communications with government during emergencies", IOAC 2019 [135] *Gaps identified: insufficient staff capacity at HQ for sufficient operational capacity; staff too often being deployed to play act in one or two roles in the response while also maintaining their responsibilities back at headquarters; staff deployed for a prolonged length of time;* additional challenges identified by the IOAC.[136]**	**Global**
7.1 The WHE should become a Centre with command and control authority.	WHE, via its Executive Director, has command and control authority for health emergencies (WHO	Global

PRE-PEER

[132] World Health Organization, "WHO's Financing Dialogue 2016," WHO, accessed September 13, 2019, http://www.who.int/about/finances-accountability/funding/financing-dialogue/en/.
[133] World Health Organization, "Seventieth World Health Assembly Update, 24 May," accessed September 13, 2019, https://www.who.int/news-room/detail/24-05-2017-seventieth-world-health-assembly-update-24-may.; World Health Organization, "Assessed Contributions," WHO, accessed September 13, 2019, http://www.who.int/about/finances-accountability/funding/assessed-contributions/en/.
[134] Global Health Crises Task Force, "Annex to the Final Report. Progress on 27 Recommendations of the High-Level Panel," June 22, 2017, https://www.un.org/en/pdfs/Annex%20to%20the%20Final%20Report.Progress%20on%2027%20recommendations%20of%20the%20High-Level%20Panel.pdf.
[135] Independent Oversight and Advisory Committee, "Public Health Preparedness and Response: Report of the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme," May 1, 2018, http://apps.who.int/gb/ebwha/pdf_files/WHA72/A72_6-en.pdf.
[136] Independent Oversight and Advisory Committee.

Recommendation	Status	National or Global IHR relevance
	Emergency Response Framework); on advice from the WHE, the WHO DG is responsible for alerting the UNSG and the Inter-Agency Standing Committee (IASC) where events require escalation beyond WHO;[137] WHO feeds into the World Bank's Pandemic Emergency Financing Facility (PEF) via the WHO Strategic & Technical Advisory Group for Infectious Hazards (STAG-IH).	
7.2 Centre should be adequately funded and staffed.	84% of the USD$526 million WHE core budget funded or pledged for 2018-19, as of March 2019;[138] Concerns raised to the WHA in 2019 re. the impact of a USD$39 million reduction in WHO core flexible funding on the WHE Country Business Model; [139] *Gaps identified: the staffing capacity is not matched to expectations and WHO must increase its capacity and strengthen partnerships with other deployable organizations, with a focus on local agencies, to enable WHO HQ staff to focus on normative work, country capacity strengthening and coordination of responses.*	Global
7.3 Standing advisory board with representation from UN bodies, national governments, NGO's and institutional partners.	The IOAC's seven members act as the WHE's standing management advisory board.	Global
7.4 Workforce deployment management unit, including GOARN and Foreign Medical Team programmes.	The WHO Global Health Emergency Workforce (GOARN, the Global Health Cluster, the Standby Partnership Programme, the Emerging Diseases Clinical Assessment and Response Network (EDCARN), EMTs).[140]	Global
7.5 Protocol to activate immediate response to outbreaks and call on political action over obstacles	WHO's Emergency Response Framework (ERF), [141] includes the Incident Management System (IMS)[142] and Contingency Fund for Emergencies (CFE)[143]. The emergency business processes allowed the rapid deployment of staff and provision of supplies in response to the Ebola outbreak in 2018, IOAC.[144]	Global
7.6 Open data platform providing publicly available real-time data	WHO Epidemic Intelligence from Open Sources (EIOS) event-based surveillance initiative 2017;[145] status of the project and accessibility of the data unclear.[146] A new WHO Emergency Dashboard	Global

PRE-PEER

[137] Inter-Agency Standing Committee, "Level 3 (L3) Activation Procedures for Infectious Disease Events," (2016).; World Health Organization, "Emergency Response Framework (ERF)."
[138] Independent Oversight and Advisory Committee, "Public Health Preparedness and Response: Report of the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme," May 1, 2018.
[139] Ibid.
[140] Lawrence O Gostin, "The Future of the World Health Organization: Lessons Learned from Ebola," *The Milbank Quarterly* 93, no. 3 (2015).
[141] World Health Organization. Emergency Response Framework Second Edition. Accessed 2019 March 9. Available from URL
[142] Open WHO. Incident Management System (Tier 1). Accessed 2019 March 9. Available from URL: https://openwho.org/courses/incident-management-system
[143] World Health Organization. Contingency Fund for Emergencies. Report of the WHO Health Emergencies Programme. April 2017. Available from URL: https://www.who.int/emergencies/funding/contingency-fund/CFE_Impact_2017.pdf?ua=1
[144] Harvey F, Ammar W, Endo H, Gupta GR, Konyndyk J, Matsoso P, Tam T. Public health preparedness and response: Report of the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme. 21 December 2018. Available from: https://www.who.int/about/who_reform/emergency-capacities/oversight-committee/EB144-8.pdf?ua=1
[145] Open WHO. Health emergency information and risk assessment: Summary of achievements. Accessed 2019 March 9. Available from URL: http://open.who.int/2016-17/our-work/category/12/programme/12.003/eba
[146] Barboza P. Epidemic Intelligence from Open Sources. Conference presentation at 2nd OIE Global Conference on Biological Threat Reduction. Ottawa, Canada: 2017, November. Available from URL:

Recommendation	Status	National or Global IHR relevance
	confirmed by the IOAC, Dec. 2018; the relationship with the EIOS and data access unclear;[147] The Event Management System has been implemented in all WHO regions.[148]	
7.7 Has a WHO contingency fund and access to the pandemic emergency financing facility (PEF).	WHE Contingency Fund for Emergencies (CFE), has rapidly released a majority of smaller funding requests; 14 /17 (82%) under US$500 000 requests approved and funds made available ≤24 hours.[149] Gaps: the CFE has only received US$70.7 /100 million (71%) of requested contributions, as of March 2019 and replenishment is difficult;[150] risk of fundraising and donor fatigue.[151]	Global
7.8 Collaborates with WHO Health Systems and Innovation department for R&D in crises.	R&D in health crises close collaboration between WHE and WHO Health systems and Innovation Dept; WHO innovation hub, 2018; WHO digital technology platform, 2019.	Global
7.9 Develop SOPs for humanitarian actors in health crises.	WHO's ERF SOPs covers health and inter-sectoral coordination;[152] IASC 'Saving Lives Together' framework 2015, covers security arrangements.[153]	Global
8. A dedicated center for outbreak response with strong technical capacity, a protected budget and clear lines of accountability to be created at WHO, governed by a separate Board. (HLSHTM)	**Established:** **WHE was established in 2016, focused on strong technical capacity and clear lines of accountability with oversight by the IOAC. In 2019, it was announced that WHE would transition to become one of four pillars of WHO's new structure.**	**Global**
8.1 Merge GOARN and WHO humanitarian teams and build virtual global health workforce with surge capacity.	The humanitarian and outbreak teams have not been merged. *Gaps identified: indications that they have been brought closer together by the WHE, but that teams are still working in silos with insufficient communication and coordination between teams/agencies.*	Global
8.2 The Centre should have powerful analytical, data processing, and advisory capacity.	New surveillance and outbreak response tools including: EWARS; EpiBrain; GoData. However, the tools are not integrated and currently act independently.	Global
8.3 Develops protocol and agreements with governments, multilaterals, NGOs, private firms, others	See recommendation 16.	Global
8.4 Ensure access to sensitive outbreak information and government-to-government information sharing during multi-country	Member states required to share information on notifiable disease with WHO, per the IHR. There are reports of delays in reporting from some	Global

PRE PEER

http://www.oie.int/eng/BIOTHREAT2017/Presentations/6.2_BARBOZA-presentation.pdf

[147] Harvey F, Ammar W, Endo H, Gupta GR, Konyndyk J, Matsoso P, Tam T. Public health preparedness and response: Report of the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme. 21 December 2018. Available from: https://www.who.int/about/who_reform/emergency-capacities/oversight-committee/EB144-8.pdf?ua=1

[148] World Health Organization, "Summary of Achievements," accessed September 13, 2019, http://open.who.int/2016-17/our-work/category/12/programme/12.003/eba.

[149] World Health Organization. Emergency Medical Teams. Accessed 2019 March 09. Available from URL: https://www.who.int/hac/techguidance/preparedness/emergency_medical_teams/en/

[150] Independent Oversight and Advisory Committee, "Public Health Preparedness and Response: Report of the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme," May 1, 2018.

[151] S. J. Ravi, M. R. Snyder, and C. Rivers, "Review of International Efforts to Strengthen the Global Outbreak Response System since the 2014-16 West Africa Ebola Epidemic," *Health Policy Plan* (2019).

[152] World Health Organization. Emergency Medical Teams. Accessed 2019 March 09. Available from URL: https://www.who.int/hac/techguidance/preparedness/emergency_medical_teams/en/

[153] Interagency Standing Committee. Saving Lives Together. 2015. Available from URL: https://interagencystandingcommittee.org/system/files/saving_lives_together_a_framework_for_improving_security_arrangements_among_igos_ngos_and_un_in_the_field_october_2015.pdf

Recommendation	Status	National or Global IHR relevance
outbreak	countries and need for strengthening of global frameworks/ platforms for timely data and information sharing.	
8.5 Executive Director is accountable to Board of Directors and to the WHO Director-General, and works closely with them.	The Executive Director reports to the IOAC and the WHO Director-General, and works closely with them.[154]	Global
8.6 Multi-stakeholder board comprising: regional representation; scientific expertise including animal health; operation responders from all sectors; funders.	See Recommendation 11.3.	Global
8.7 Protected and adequately resourced budget through a dedicated revolving fund that can immediately disburse money, and be replenished with funds raised for that crisis, in preparation for the next crisis	See Recommendation 11.2.	Global
8.8 UNOCHA to develop in-house health response capacity	Implementation of this recommendation has not yet been evaluated.	Global
8.9 Broad coordination framework with health sector	Global Action Plan for Healthy Lives and Well-Being for All, 2018; aims to address health-related targets across 14 SDGs through multi-sectorial collaboration; seven areas for promoting action identified; sustainable financing; frontline health systems; community and civil society engagement; determinants of health; R&D, innovation and access; data and digital health; innovative programming in fragile and vulnerable states and for disease outbreak responses, plans due Sept. 2019.[155]	Global
9. The WHO should create a Center for Health Emergency Preparedness and Response by 2016; to lead the global outbreak preparedness and response efforts; to be governed by an independent Technical Governing Board. (GHRFC)	**Established: WHE created, 2016; five departments integrated across HQ, regional and country offices; accountable to the independent IOAC board.**	**Global**
9.1 Coordinates operational information and resources for outbreaks and other health emergencies. The Centre should be led by Executive Director at Deputy Director-General level, overseen by Technical Governing Board. Regional and national coordination structures should be incorporated	WHE coordinates operational information and resources for health emergencies; the WHE Executive Director sits at the level of Deputy Director-General and reports to the WHO DG and the IOA; its five units flow from headquarters to regional and country-level offices.[156]	Global
9.2 Manages surveillance, risk assessment, response, IHR assessment, coordination, risk communications, quality assurance, and monitoring.	WHE undertakes all these activities.	Global
9.3 Coordinates the global health emergency workforce.	See Recommendation 11.4.	Global
9.4 Merit-based, multidisciplinary board, with representatives from the UN; World Bank; working groups for IHR and research.	See Recommendation 11.3.	Global
SUPPORT FOR COUNTRY		

[154] World Health Organization, "WHO's New Health Emergencies Programme," WHO, accessed September 13, 2019, http://www.who.int/features/qa/health-emergencies-programme/en/.
[155] World Health Organization, "Global Action Plan."
[156] World Health Organization, "Reform of WHO's Work in Health Emergency Management: WHO Health Emergencies Programme: Report by the Director-General," accessed September 13, 2019, https://apps.who.int/iris/handle/10665/252688.

Recommendation	Status	National or Global IHR relevance
PREPAREDNESS		
10. Fulfilment of the SDG commitments, with emphasis on health-sector goals (UNHLP)	**Ongoing implementation; IHR core capacity is an indicator for SDG 3; Global Action Plan for Healthy Lives and Well-Being for All - health-related targets across 14 SDGs,**	**National and global**
11. The WHO strengthens its periodic review of compliance with the IHR Core Capacity requirements. (UNHLP)	**IHR Monitoring and Evaluation Framework 2018. The State Party Self-Assessment Annual Reporting Tool replaced the IHR Monitoring Questionnaire in 2018; compliance monitored by the WHE Country Preparedness and IHR unit.**	**National and global**
11.1 States provide WHO with annual written assessment; four-year periodic review.	External evaluation process recommends voluntary five-year updates.	National
11.2 Costed action plans.	95/191 (49.7%) countries have undertaken the voluntary external evaluations of country preparedness; 52 (54.7%) countries have costed National Action Plans published, as of March 2019.[157]	National
GLOBAL READINESS TO RESPOND		
12. The UN Secretary-General, WHO and UN to develop strategies for sustaining health system capabilities and infrastructure in fragile, failed states and warzones. (GHRFC)	**Ongoing implementation; Deliver Accelerated Results Effectively and Sustainably (DARES), 2017 operational framework for collaboration in fragile, conflict and vulnerable settings; Global Action Plan for Healthy Lives and Well-Being for All acceleration 7 focused on "innovative programming in fragile and vulnerable states and for disease outbreak responses", due Sept. 2019.[158]**	**National and global**
13. WHO should establish a mechanism to generate a daily high-priority "watch list" of outbreaks with potential to become a PHEIC; communicate the list to national focal points daily; a weekly public summary; WHO to normalize the process of country outbreak reporting; encourage preparedness activities. (GHRFC)	**Established:** **The WHO system for detecting, sharing and responding to potential emergencies includes alerts from formal sources; government reporting; web-based surveillance; EIOS. Country IHR focal points have access to a closed outbreak management system; the public have access to Weekly Epidemiological Record and Disease Outbreak News.**	**Global**
14. By 2016, the UN and WHO should establish clear mechanisms for coordination and escalation in health crises, including those that become or are part of broader humanitarian crises requiring mobilization of the entire UN system. (GHRFC)	**Established: IASC L3 protocol published in 2016[159] was replaced with two new protocols, 2019: the *Scale-up protocol for control of infectious disease events*, activated for the first time in late May 2019 for the DRC Ebola outbreak; and the *scale-up protocol of humanitarian crises*; other protocols include the *Empowered leadership in a scale-up crisis protocol*; the *Emergency response preparedness protocol*; the *humanitarian programme cycle reference protocol;* the *cluster coordination reference module; o*ngoing monitoring is needed. The IASC has its own monitoring system automatically triggered**	**Global**

PRE-PEER

[157] World Health Organization, "SPH Country Planning."
[158] World Health Organization, "Global Action Plan."
[159] Committee, "Level 3 (L3) Activation Procedures for Infectious Disease Events."

Recommendation	Status	National or Global IHR relevance
	when a protocol is activated.	
15. In the event of a Grade 2 or Grade 3 outbreak that is not already classified as a humanitarian emergency, a clear line of command will be activated throughout the UN system. (UNHLP)	**Per recommendation 14.**	**Global**
15.1 Regional director reports to the WHE Executive Director, who reports to the WHO Director-General, who reports to the UN Secretary-General. The Executive Director of the centre will be the Secretary-General's Emergency Coordinator, who will be tasked with leading an inter-agency response, if needed.	WHO Director-General reports to UN Secretary-General. During 2017, 113 rapid risk assessments were conducted, and very high-risk events were reported to the UN Secretary-General's Office.[160] The Executive Director has been tasked with leading an interagency response, if needed, as detailed in the Director General's report on the reform of WHO's work in health emergency management.[161]	Global
15.2 IASC remit to be reviewed for greater robustness, timeliness, coordination, and capacity	IASC work plan for 2019-2020 includes a strategic priority on Operational Response, with actions to: revise humanitarian system-wide emergency activation and deactivation to ensure an appropriate, effective and efficient response in all contexts; review coordination structures, particularly in protracted crisis situations, to ensure that they are relevant, effective and inclusive; ensure that adequate and appropriate leadership is in place to coordinate the community's response to humanitarian crises; strengthen joint IASC early warning and readiness analysis to support system-wide preparedness and early action.[162] See also recommendation 22.	Global
16. The Secretary-General initiates the integration of health and humanitarian crisis trigger systems. (UNHLP)	**See recommendation 14.**	**Global**
TRAVEL, TRADE AND DECLARING A PHEIC		
17. A transparent and politically protected WHO Standing Emergency Committee (SEC) should be delegated with the responsibility for declaring public health emergencies. (HLSHTM)	**The IHR Emergency Committee gives advice on the determination of the event as a PHEIC in circumstances where there is inconsistency in assessments of the event between the Director-General and affected country/countries; advice on recommended emergency measures or 'temporary measures' (which automatically expire three months after their issue); and advice throughout the duration of the PHEIC.[163] WHO has recently received criticism over its decision not to declare a PHEIC with regard to the DRC Ebola outbreak and academics continue to call for greater transparency of this decision-making process.[164]**	**Global**

[160] World Health Organization, "Summary of Achievements."
[161] World Health Organization, "Reform of WHO's Work in Health Emergency Management: WHO Health Emergencies Programme: Report by the Director-General."
[162] Inter-Agency Standing Committee, "IASC Work Plan 2019-2020," accessed September 13, 2019, https://interagencystandingcommittee.org/content/iasc-work-plan-2019-2020.
[163] World Health Organization. IHR Procedures concerning public health emergencies of international concern (PHEIC). Accessed 2019 March 3rd. Available from URL: https://www.who.int/ihr/procedures/pheic/en/
[164] Eccleston-Turner and Kamradt-Scott, "Transparency in Ihr Emergency Committee Decision Making: The Case for Reform."

Recommendation	Status	National or Global IHR relevance
17.1 Broaden the responsibility of declaring a PHEIC and protect from political pressure that might interfere with its judgement	Responsibility for declaring a PHEIC remains with the WHO DG, with advice provided by the IHR Emergency Committee.	Global
17.2 Director-General chairs, communicates and explains the SEC's decisions; minutes and votes published immediately following the meeting and publish an annual report detailing activities	IHR Emergency Committee is not chaired by the WHO DG, but by an expert selected by the DG. Summary statements are released on the WHO website following each meeting of the IHR Emergency Committee. Votes are not included in the summary statement and the annual reports are not published due to the ad hoc nature of the Committee.	Global
17.3 Director-General appoints first members, then SEC votes in new members. Members should have high-level public health and economic expertise and the SEC should be financed through assessed contributions to protect against undue donor influence	WHO DG selects members of the IHR Emergency Committee from the IHR Experts Roster.[165] The Emergency Committee is convened as events of concern arise and is not a standing committee. Committee members are volunteers (?) and the IHR Emergency Committee is financed by WHO. Since 2011, the names and positions of Committee members have been published on the WHO website.[166]	Global
17.4 PHEIC declaration triggers financial disbursements, emergency data and specimen sharing rules, and regulatory procedures for medicines	A PHEIC declaration does not trigger any financial disbursements, data and specimen sharing rules, or regulatory processes. A PHEIC declaration is primarily to garner greater international attention to encourage unaffected Member states to revise their response plans and prepare for a potential cross-border event, and to stimulate extra resources.	Global
17.5 Replace binary PHEIC system with graded warnings	Current binary PHEIC system has not been updated with graded warnings.	Global
18. The IHR Review Committee considers developing mechanisms to rapidly address unilateral action by states and others contravening temporary recommendations issued by the WHO as part of a PHEIC announcement. (UNHLP)	**Not established: The IHR Review Committee declined the recommendation. Institutions and networks within and outside of WHO continue to work on this issue through dialogue. The World Economic Forum (WEF) Epidemic Readiness Accelerator platform aims to facilitate communication and collaboration between private and public sector, to be launched in Jan. 2020.**	**National and global**
19. The WTO and WHO convene an informal joint Commission of Experts to study measures to strengthen coherence between the IHR and the WTO legal frameworks regarding trade restrictions for public health reasons. (UNHLP)	**Not established: active dialogue but no official collaboration between WHO and WTO; new voluntary WTO mediation system under its Agreement on the Application of Sanitary and Phytosanitary Measures considered important for bridging the gap between raising concerns in committee and full-scale dispute settlement by the Global Heath Crises Task Force.**	**Global**
20. Strengthen incentives for early reporting of outbreaks and science-based justifications for trade and travel restrictions. (UNHLP)	**Not established: incentives for early reporting partly met by the PEF and WHE. Gaps identified: the WHE is under-resourced; PEF limitations (see financing**	**National and global**

PRE-PEER

[165] World Health Organization, "International Health Regulations and Emergency Committees," WHO, accessed September 13, 2019, http://www.who.int/features/qa/emergency-committees/en/.
[166] Eccleston-Turner and Kamradt-Scott, "Transparency in Ihr Emergency Committee Decision Making: The Case for Reform."

Recommendation	Status	National or Global IHR relevance
	chapter); no incentives for science-based justification for travel and trade restrictions.	
20.1 Incentives for reporting early, including emergency fund distribution; disincentives for delayed reporting; WHO to assess triggers for reimbursement.	CFE and PEF economic incentives triggered by country requests; the WHO STAG-IH reviews the requests to inform the PEF Steering Body decision.[167] Gaps: PEF funds not released early enough; and its insurance window has yet to release funds.	National and global
20.2 Disincentives for trade and travel restrictions, including publishing the list of countries that implement trade and travel restrictions.	WHO maintains a private list of countries who have implemented trade and travel restrictions, unwarranted or otherwise, but this list is not publicly available.	National and global
20.3 UN Security Council to convene OCHA, WHO, ICAO, IMO and others to identify crucial service providers and develop plans for continuation of services during emergencies. May include the designation of a UN focal point for the private sector during outbreaks.	The UN Security Council has not convened stakeholders on the issue of service provision during emergencies. At present, the Chief of the Aviation Medicine Section of the International Civil Aviation Organizations (ICAO) is a member of the IHR Emergency Committee for the DRC Ebola outbreak.[168] The WEF Epidemic Readiness Accelerator has brought many of these organizations together with over 100 companies, with the aim of encouraging those companies to develop their own preparedness plans. The Accelerator is due to be launched in January 2020, as such this recommendation is yet to be implemented.	Global
21. By 2016, the WHA should agree on new mechanisms for holding governments publicly accountable for IHR performance and broader global health risk framework. (GHRFC)	**Not established:** **See recommendation 17.**	**National and global**
21.1 Protocols to avoid suppression or delays in data and alerts.	As per recommendation 17.	National and global
21.2 Protocols to dissuade states and private sector on trade and travel restrictions including the public naming of countries that delay reporting and lauding countries that do not, in weekly epidemiological report	As per recommendation 17.	National and global
21.3 Engage with IATA and WTO.	WHO has ongoing engagement with IATA; IATA are observers on the WHO guideline development committee. For WTO, see recommendation 18.	Global
GENDER		
22. Outbreak preparedness and response efforts should take into account and address the gender dimension. (UNHLP)	**Not established: Department of Gender, Equity and Rights to be moved into the Director-General's office to ensure mainstreaming across the organization, March 2019.[169]** ***Gaps identified: gender imbalance an ongoing issue with regard to employment and organizational culture; part of wider***	**National and global**

PRE-PEER

[167] World Bank. Pandemic Emergency Financing Facility: Frequently Asked Questions. 2017 May 9. Available from URL: http://www.worldbank.org/en/topic/pandemics/brief/pandemic-emergency-facility-frequently-asked-questions

[168] **World Health Organization, "List of Members of, and Advisers to the Meeting of the International Health Regulations (IHR) Emergency Committee for Ebola Viral Disease in the Democratic Republic of the Congo on 12 April 2019," WHO, accessed September 13, 2019, http://www.who.int/ihr/procedures/ebola-2019-april-ec-members/en/.**

[169] World Health Organization, "Transforming for Impact."

Recommendation	Status	National or Global IHR relevance
	leadership issues of engagement with staff, agencies and communities in decision-making.	
22.1 Gender must be considered in outbreak preparedness and response.	"Gender, age, and vulnerability sensitivity" is included as one of eight WHO principles for emergency response but has not been adequately integrated into preparedness and response activities.[170]	National and global
22.2 Women must be included at all levels of planning and operations.	Increase in number of women in leadership roles at the global level, but the organization, particularly response activities, are still largely male, and medic dominated. When women are employed they often perceive not being listened to, reflecting wider leadership issues of not engaging with and listening to all staff, agencies and communities, to inform preparedness and response decisions; highlighting a need for further training and professional development of decision makers for effective coordination and leadership.	National and global
POLITICAL WILL AND GLOBAL ACCOUNTABILITY		
23. Independent UN accountability commission for systematic system-wide assessment of response (HLSHTM)	**Not established; some recommended duties taken up as below**	**Global**
23.1 permanent, independent body of civil society, academia, and independent experts	Not established	Global
23.2 track and analyse financial or in kind (operational) contributions and non-sharing of information	Global Health Security Tracking Dashboard (Georgetown University): tracks flow of financial and in-kind support for funding flows to JEE/national plans[171]	National and global
23.3 provide forum for community representatives	Several community-level for a set up (e.g. Anthrologica, Social Science in Action)	National
23.4 monitor efforts to build and sustain national core capacities	WHE Emergency Preparedness unit; JEE Alliance	National
23.5 publish findings during and after each PHEIC	Regional offices in external situation reports; occasional journal publications; online platforms[172]	Global
24. UNGA Council on Global Public Health Crises (UNHLP)	**Not established; some recommended duties taken up as below**	**Global**
24.1 monitor and report on the implementation of the UNHLP recommendations	One-year UN Global Health Crises Task Force reported on High Level Panel actions.[173]; IOAC established and reports to UN Secretary-General and Inter-Agency Standing Committee.[174] Academics have reviewed/published recommendations of HLSHTM and CGHRF panels.[175]	Global
24.2 Council composed of 45 - 50-member state representatives	Task Force comprised 12 members: 9 countries were represented on the Task Force, 2 from low- or middle-income countries/7 from Western Europe and USA.[176]	Global

PRE-PEER

[170] World Health Organization, "Emergency Response Framework (ERF)."
[171] Rebecca Katz et al., "Tracking the Flow of Funds in Global Health Security," *Ecohealth* (2019).
[172] The Global Health Network, "Home - Zika Infection," accessed September 13, 2019, https://zikainfection.tghn.org/.
[173] United Nations, "Global Health Crises Task Force," November 21, 2016, https://www.un.org/en/global-health-crises-task-force/.
[174] World Health Organization, "Reform of WHO's Work in Health Emergency Management: WHO Health Emergencies Programme: Report by the Director-General."
[175] Jennifer Leigh et al., "Global Epidemics: How Well Can We Cope?," *Bmj* 362 (2018).
[176] United Nations, "Global Health Crises Task Force."

Recommendation	Status	National or Global IHR relevance
25. Global Health Committee as part of UN Security Council (HLSHTM)	**Not established; some recommended duties taken up as below**	**Global**
25.1 Monitor and publish annual report on progress to building a strong and effective global health security system	IOAC oversight of WHE but not broader whole-system analysis[177]	Global
25.2 Address non-compliance with IHR on trade and travel	WHO temporary travel recommendations under IHR[178]; WEF private-public partnership platform for travel (expected launch, Jan. 2020); WHO evidence-based guidelines on travel and trade restrictions due 2019.	Global
26. Summit on Global Public Health crises with a focus on preparedness and response in 2018 (UNHLP)	**Not established; first Global Health Security Conference in Australia, June 2019; UN High-Level Meeting on Universal Health Coverage, Sept. 2019.**	**Global**

PRE-PEER-REVIEW DRAFT

[177] World Health Organization, "Reform of WHO's Work in Health Emergency Management: WHO Health Emergencies Programme: Report by the Director-General."
[178] World Health Organization, "The Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response," WHO, accessed September 13, 2019, http://www.who.int/ihr/review-committee-2016/en/.

Appendix 3: Methodology

In the absence of quantitative data, the research methods for this report took a mixed-methods approach:

- a review of the literature and publicly available information
- semi-structured stakeholder interviews
- consultation and iterative feedback on drafts, together with stakeholder engagement, consultation and feedback on chapter drafts

Relevant recommendations from the following post-West Africa Ebola reviews were collated (see Appendix 1):

1. the UN High-Level Panel on the Global Response to Health Crises on regional and sub-regional level organizations, and international system for responding to health crises;
2. Harvard-LSHTM Independent Panel on the Global Response to Ebola on governing the global system for preventing and responding to outbreaks; the Commission on a Global Health Risk Framework for the Future on strengthening global coordination and capabilities;

Other published and unpublished literature on health emergency governance and coordination, including reports from the UN Global Health Crisis Task Force were used to review the implementation status of these recommendations. Recent outbreak responses to Ebola in the DRC, and Diphtheria in Bangladesh were investigated to understand the practical implications of changes to governance and coordination structures and to assess their successes, challenges and opportunities for improvement. Reviews of the published and unpublished literature were supplemented by 36 semi-structured key informant interviews with global-level stakeholders and surveys of regional governance mechanisms.

Actionable recommendations were developed from the analysis and in consultation with interviewed stakeholders.

Mapping
Methods for mapping global architecture of actors

Key institutions, agencies and networks involved in emergency preparedness and response, have been identified through a combination of website searches and snowballing, literature review and triangulation with data from key informant interviews. Taking the United Nations system as a starting point, the structure of the UN and WHO were reviewed, and agencies involved in the field added to the map.[179] The structure of the new WHE programme was also reviewed and partners identified.[180] The membership of WHO Standby Partners, the Global Health Cluster, Emergency Medical Teams, and GOARN

[179] United Nations, "Funds, Programmes, Specialized Agencies and Others," November 18, 2014, https://www.un.org/en/sections/about-un/funds-programmes-specialized-agencies-and-others/index.html.
[180] World Health Organization, "WHO's New Health Emergencies Programme."

PRE-PEER-REVIEW DRAFT

was next explored to identify the categories of actor/networks involved.[181] Together this comprises more than 250 actors. These could be broadly categorised into specialist networks, academic institutions, National Public Health Institutes, Field Epidemiology Training Programmes, civil society organisations/NGO's, governmental organisations and different types of donor. Given the bias towards agencies or institutions with emergency response functions, to identify partners with preparedness roles, the membership of the WHO Strategic Partners for IHR preparedness[182] and JEE Alliance[183] was also reviewed. Funders of WHO and WHE were further explored using the WHO budget portal.[184] The role of private sector actors and public-private partnerships was explored through Gavi[185] and Foundation for Innovative New Diagnostics (FIND)[186] as examples. Further support groups were identified through stakeholder interviews and publications and documents cited in the main text of this report. Published examples of similar mapping were also used to compare categorisation themes and to inform the mapping process.[187]

Stakeholder identification

Stakeholder selection criteria were as follows:

- Current role as department manager or above at relevant multilateral and regional institution, and global health emergency response organizations OR
- Current or recent role in global, regional and national outbreak response and coordination OR
- Substantial experience in research and analysis of global health emergency governance and coordination, including lead authors of high-level post-Ebola review reports.

Participants were selected based on the recommendations of research leads, and a review of the published and unpublished literature, including publicly available institutional organizational structures. A snowballing method was used to identify additional stakeholders. Diversity in regional and gender representation was a priority for each criterion.

PRE-PEER-REVIEW DRAFT

[181] "WHO | Partners," WHO, accessed September 13, 2019, http://www.who.int/health-cluster/partners/en/.; World Health Organization, "Welcome to GOARN," accessed September 13, 2019, https://extranet.who.int/goarn/.; World Health Organization, "Classified Teams," Text, EMT, January 23, 2019, https://extranet.who.int/emt/content/classified-teams.
[182] World Health Organization, "SPH Partners," accessed September 13, 2019, https://extranet.who.int/sph/partners.
[183] JEE Alliance, "Members," JEE Alliance, accessed September 13, 2019, https://www.jeealliance.org/members/.
[184] World Health Organization, "Programme Budget Web Portal," accessed September 13, 2019, https://open.who.int/2018-19/home.
[185] Global Vaccine Alliance, "About Gavi, the Vaccine Alliance," accessed September 13, 2019, https://www.gavi.org/about/.
[186] FIND, "Pandemic Preparedness," *FIND* (blog), accessed September 13, 2019, https://www.finddx.org/pan-prep/.
[187] Defining the global health system and systematically mapping its network of actors; Szlezák NA, Bloom BR, Jamison DT, Keusch GT, Michaud CM, Moon S, et al. (2010) The Global Health System: Actors, Norms, and Expectations in Transition. PLoS Med 7(1): e1000183. https://doi.org/10.1371/journal.pmed.1000183; Frenk J1, Moon S. Governance challenges in global health. N Engl J Med. 2013 Mar 7;368(10):936-42. doi: 10.1056/NEJMra1109339

Interviews and surveys

A standardised questionnaire was designed, however due to the scope of the topics covered in this reports and sheer number of questions to be answered, the questionnaire was adapted according to the expertise of the interviewee (i.e. focused on country preparedness, response or both) and any relevant specialist questions from the recommendations under review were also added. The interviews were also semi-structured, and not all questions developed for each interviewee were asked. While this meant that not all topics were raised with each interviewee, there was consistency with a number of broader questions related to governance more broadly and priorities for strengthening health emergency preparedness and response, allowing for comparison and analysis of common themes. We began to reach exhaustion of new topics and ideas in the final interviews. Consent was taken and most wished not to be named or for their institution to be named. These are held by the interview team. A breakdown of interviewees by sector is available in the table below:

Sector	**Interviewees (%)**
WHO headquarters	10 (23.3)
Other multilateral organization	8 (18.6)
Global CSO	5 (11.6)
Academia	5 (11.6)
National representative (high-income country)	5 (11.6)
Local CSO	2 (4.7)
International financial institution	2 (4.7)
WHO regional offices	2 (4.7)
Media	2 (4.7)
National government representative (low-income country)	1 (2.3)
Private sector	1 (2.3)
Total	43 (100)

PRE-PEER-REVIEW DRAFT

References

Alberici. “What If the Economic Cost of Unpaid Work Was Tallied up? A New Report Has Done Just That.” Text. ABC News, July 8, 2019. https://www.abc.net.au/news/2019-07-08/value-of-unpaid-work-to-the-economy/11282840.

Beirman, David. "A Travel Industry Perspective on Government Travel Advisories." *Tourism in turbulent times towards safe experiences for visitors* (2006): 309-22.

Boseley, Sarah. “Ebola: Government Cuts to the WHO Aided Delays in Dealing with Outbreak.” *The Guardian*, October 9, 2014, sec. World news. https://www.theguardian.com/world/2014/oct/09/ebola-who-government-cuts-delays-in-dealing-with-outbreak.

Bretton Woods Project. “Gender-Just Macroeconomics II: The World Bank’s Privatization Push.” Bretton Woods Project, March 11, 2019. https://www.brettonwoodsproject.org/2019/03/gender-just-macroeconomics-ii/.

———. “The IMF’s Role in the Ebola Outbreak.” Bretton Woods Project, February 2, 2015. https://www.brettonwoodsproject.org/2015/02/imfs-role-ebola-outbreak/.

Brussels Airlines. "Brussels Airlines Doubles Flight Frequencies to Freetown and Monrovia." *Brussels Airlines*. https://www.brusselsairlines.com/it-it/corporate/press-room/detail.aspx?PRID=tcm:313-36056-16.

Canadian Institute for Advanced Research. “World Happiness Report 2019.” Accessed September 13, 2019. http://worldhappiness.report/.

Centre for Strategic and International Studies. “From TPP to CPTPP.” Accessed September 13, 2019. https://www.csis.org/analysis/tpp-cptpp.

Chang, Ha-Joon. “Only Protection Can Build Developing Economies.” Accessed September 13, 2019. https://www.globalpolicy.org/component/content/article/162/27898.html.

Dahn, Bernice, Mosoka P. Fallah, James Platts, Suerie Moon, and Ann M. Kimball. "Getting Pandemic Prevention Right." *The Lancet*, no. 10075 (2017).

Dubois, Marc, and Caitlin Wake. "The Ebola Response in West Africa: Exposing the Politics and Culture of International Aid." (2015). https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9903.pdf.

Eccleston-Turner, Mark, and Adam Kamradt-Scott. "Transparency in Ihr Emergency Committee Decision Making: The Case for Reform." *BMJ Global Health* 4, no. 2 (2019): e001618.

European Bank for Reconstruction and Development. “Environmental and Social Policy.” Accessed September 13, 2019. //www.ebrd.com/news/publications/policies/environmental-and-social-policy-esp.html.

Fidler, David P. *The Challenges of Global Health Governance*. Council on Foreign Relations, Incorporated, 2010.

FIND. “Pandemic Preparedness.” *FIND* (blog). Accessed September 13, 2019. https://www.finddx.org/pan-prep/.

Fink, Sheri. "Cuts at W.H.O. Hurt Response to Ebola Crisis.". *New York Times* 163, no. 56614 (2014): A1-A6.

PRE-PEER-REVIEW DRAFT

Giannetti, BF, Feni Agostinho, CMVB Almeida, and Donald Huisingh. "A Review of Limitations of Gdp and Alternative Indices to Monitor Human Wellbeing and to Manage Eco-System Functionality." *Journal of Cleaner Production* 87 (2015): 11-25.

Global Health Crises Task Force. "Annex to the Final Report. Progress on 27 Recommendations of the High-Level Panel," June 22, 2017. https://www.un.org/en/pdfs/Annex%20to%20the%20Final%20Report.Progress%20on%2027%20recommendations%20of%20the%20High-Level%20Panel.pdf.

Global Health Security Initiative. "About GHSI." Accessed September 13, 2019. http://www.ghsi.ca/english/index.asp.

Global Vaccine Alliance. "About Gavi, the Vaccine Alliance." Accessed September 13, 2019. https://www.gavi.org/about/.

Glyn, Andrew. *Capitalism Unleashed: Finance, Globalization, and Welfare*. Oxford University Press, 2007.

Gostin, L. O., and R. Katz. "The International Health Regulations: The Governing Framework for Global Health Security." *Milbank Q* 94, no. 2 (Jun 2016): 264-313.

Gostin, Lawrence O. "The Future of the World Health Organization: Lessons Learned from Ebola." *The Milbank Quarterly* 93, no. 3 (2015): 475.

Happy Planet Index. "Happy Planet Index." Happy Planet Index. Accessed September 13, 2019. http://happyplanetindex.org.

Harman, Sophie. "Ebola, Gender and Conspicuously Invisible Women in Global Health Governance." *Third World Quarterly* 37, no. 3 (2016): 524-41.

Held, David, Ilona Kickbusch, Kyle McNally, Dario Piselli, and Michaela Told. "Gridlock, Innovation and Resilience in Global Health Governance." *Global Policy* (2019).

Herten-Crabb, A., and S. Moon. "Outbreak-Related Travel Restrictions: Health & Economic Consequences." Geneva and London: Global Health Centre, the Graduate Institute of International and Development Studies and Centre on Global Health Security, Chatham House., 2017.

Herten-Crabb, A., R. Vaidya, J. Spencer, S. Moon, and L. Lillywhite. "Background Paper: Infectious Disease Outbreaks, Travel and Tourism: Monitoring for Preparedness." London: Chatham House, 2017.

IHR Review Committee. "Implementation of the International Health Regulations (2005): Report of the Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response." Geneva: World Health Organization, 2016.

Independent Oversight and Advisory Committee. "Public Health Preparedness and Response: Report of the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme," May 1, 2018. http://apps.who.int/gb/ebwha/pdf_files/WHA72/A72_6-en.pdf.

———. "Public Health Preparedness and Response: Report of the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme," May 1, 2019. https://apps.who.int/gb/ebwha/pdf_files/WHA72/A72_6-en.pdf.

———. "Special Report to the Director-General of World Health Organization." (2019). https://www.who.int/about/who_reform/emergency-capacities/oversight-committee/ioac-special-report.pdf.

———. "Uganda Mission Report: 15-19 October 2019." (2019). https://www.who.int/about/who_reform/emergency-capacities/oversight-committee/uganda-mission-report-2018.pdf.

PRE-PEER-REVIEW DRAFT

International Labour Organization. *A Fair Globalization: Creating Opportunities for All*, 2004. http://www.ilo.org/global/publications/ilo-bookstore/order-online/books/WCMS_PUBL_9221154262_EN/lang--en/index.htm.
Inter-Agency Standing Committee. "Level 3 (L3) Activation Procedures for Infectious Disease Events." 2016.
———. "IASC Humanitarian System-Wide Scale-Up Protocols Released." Accessed September 13, 2019. https://interagencystandingcommittee.org/iasc-transformative-agenda/content/iasc-humanitarian-system-wide-scale-protocols-released.
———. "IASC Work Plan 2019-2020." Accessed September 13, 2019. https://interagencystandingcommittee.org/content/iasc-work-plan-2019-2020.
———. "Scale-Up Protocol for the Control of Infectious Disease Events Endorsed by the IASC Principals | IASC." Accessed September 13, 2019. https://interagencystandingcommittee.org/iasc-transformative-agenda/content/scale-protocol-control-infectious-disease-events-endorsed-iasc.
JEE Alliance. "Members." JEE Alliance. Accessed September 13, 2019. https://www.jeealliance.org/members/.
Katz, Rebecca, Ellie Graeden, Justin Kerr, and Stephanie Eaneff. "Tracking the Flow of Funds in Global Health Security." *Ecohealth* (2019).
Kickbusch, Ilona, Christian Franz, Anna Holzscheiter, Iris Hunger, Albrecht Jahn, Carsten Köhler, Oliver Razum, and Jean-Olivier Schmidt. "Germany's Expanding Role in Global Health." *The Lancet* 390, no. 10097 (2017): 898-912.
Kikwete, Jakaya, Celso Amorim, Micheline Calmy-Rey, Marty Natalegawa, Joy Phumaphi, and Rajiv Shah. "Protecting Humanity from Future Health Crises: Report of the High-Level Panel on the Global Response to Health Crises." New York: United Nations, 2016.
Kitzinger, Jenny. "Researching Risk and the Media." *Health, risk & society* 1, no. 1 (1999): 55-69.
Kozak, Metin, John C Crotts, and Rob Law. "The Impact of the Perception of Risk on International Travellers." *International Journal of Tourism Research* 9, no. 4 (2007): 233-42.
Labonté, Ronald, and David Stuckler. "The Rise of Neoliberalism: How Bad Economics Imperils Health and What to Do About It." *J Epidemiol Community Health* 70, no. 3 (2016): 312-18.
Leigh, Jennifer, Gabrielle Fitzgerald, Elvis Garcia, and Suerie Moon. "Global Epidemics: How Well Can We Cope?". *Bmj* 362 (2018): k3254.
Mansfeld, Yoel, and Abraham Pizam. *Tourism, Security and Safety*. Routledge, 2006.
Mason, Peter, Peter Grabowski, and Wei Du. "Severe Acute Respiratory Syndrome, Tourism and the Media." *International Journal of Tourism Research* 7, no. 1 (2005): 11-21.
Merriam-Webster. "Economic." Accessed September 13, 2019. https://www.merriam-webster.com/dictionary/economic.
Moeller, Susan D. *Compassion Fatigue: How the Media Sell Disease, Famine, War and Death*. Routledge, 2002.
Moon, S., J. Leigh, L. Woskie, F. Checchi, V. Dzau, M. Fallah, G. Fitzgerald, *et al.* "Post-Ebola Reforms: Ample Analysis, Inadequate Action." *BMJ* 356 (Jan 23 2017): j280.
Moon, S., D. Sridhar, M. A. Pate, A. K. Jha, C. Clinton, S. Delaunay, V. Edwin, *et al.* "Will Ebola Change the Game? Ten Essential Reforms before the Next Pandemic. The Report of the Harvard-Lshtm Independent Panel on the Global Response to Ebola." *Lancet* 386, no. 10009 (Nov 28 2015): 2204-21.
Morrison, Stephen J. *Global Health Policy in the Second Obama Term*. Center for Strategic & International Studies, 2013.

PRE-PEER REVIEW DRAFT

National Research Council. "The Neglected Dimension of Global Security: A Framework for Countering Infectious Disease Crises." Washington, DC: National Academics Press, 2016.
Nebehay, Stephanie, and Barbara Lewis. "WHO Slashes Budget, Jobs in New Era of Austerity." *Reuters*, May 19, 2011. https://www.reuters.com/article/us-who-idUSTRE74I5I320110519.
New Zealand Ministry of Foreign Affairs and Trade. "CPTPP vs TPP." Accessed September 13, 2019. https://www.mfat.govt.nz/en/trade/free-trade-agreements/free-trade-agreements-in-force/cptpp/understanding-cptpp/tpp-and-cptpp-the-differences-explained#targetText=What%20is%20a%20suspension%20or,take%20effect%20in%20the%20future.#what.
Noble, Rachel. "From Rights to Rhetoric: Towards Gender-Just Trade." (2018). https://www.actionaid.org.uk/publications/from-rhetoric-to-rights-towards-gender-just-trade.
Nuclear Threats Inititative. "A Spreading Plague: Lessons and Recommendations for Responding to a Deliberate Biological Event | Analysis | NTI." Accessed September 13, 2019. https://www.nti.org/analysis/reports/spreading-plague-lessons-and-recommendations-responding-deliberate-biological-event/.
Olu, Olushayo Oluseun. "The Ebola Virus Disease Outbreak in West Africa: A Wake-up Call to Revitalize Implementation of the International Health Regulations." [In eng]. *Frontiers in public health* 4 (2016): 120-20.
Organisation for Economic Cooperation and Development. "G20 Health Ministerial Meetings - OECD." Accessed September 13, 2019. https://www.oecd.org/health/health-systems/g20-health-ministerial-meetings.htm.
Ortiz, Isabel, and Matthew Cummins. "The Age of Austerity: A Review of Public Expenditures and Adjustment Measures in 181 Countries." *Available at SSRN 2260771* (2013).
Piketty, Thomas. *Capital in the Twenty-First Century*. [in English] Cambridge Massachusetts: The Belknap Press of Harvard University Press, 2014.
Premier of Victoria. "Women Doing More Than Half The Work For Free." *Premier of Victoria* (blog), October 13, 2018. https://www.premier.vic.gov.au/women-doing-more-than-half-the-work-for-free/.
Ravi, S. J., M. R. Snyder, and C. Rivers. "Review of International Efforts to Strengthen the Global Outbreak Response System since the 2014-16 West Africa Ebola Epidemic." *Health Policy Plan* (Jan 8 2019).
Rittichainuwat, Bongkosh Ngamsom, and Goutam Chakraborty. "Perceived Travel Risks Regarding Terrorism and Disease: The Case of Thailand." *Tourism Management* 30, no. 3 (2009): 410-18.
Sands, P. "The Neglected Dimension of Global Security: A Framework for Countering Infectious Disease Crises." *N Engl J Med* 374, no. 13 (Mar 31 2016): 1281-7.
Scheffler, Richard M., James Campbell, Giorgio Cometto, Akiko Maeda, Jenny Liu, Tim A. Bruckner, Daniel R. Arnold, and Tim Evans. "Forecasting Imbalances in the Global Health Labor Market and Devising Policy Responses." *Human Resources for Health* 16, no. 1 (January 11, 2018): 5. https://doi.org/10.1186/s12960-017-0264-6.
Schmidt, Charles W. "Trending Now: Using Social Media to Predict and Track Disease Outbreaks." National Institute of Environmental Health Sciences, 2012.
Sen, Amartya K. *Development as Freedom*. Oxford University Press, 2001.
Smith, Richard, and Kelley Lee. "Global Health Governance: We Need Innovation Not Renovation." *BMJ global health* 2, no. 2 (2017): e000275.

PRE-PEER-REVIEW DRAFT

Spiegel, Paul B, Phuoc Le, Mija-Tesse Ververs, and Peter Salama. "Occurrence and Overlap of Natural Disasters, Complex Emergencies and Epidemics During the Past Decade (1995–2004)." *Conflict and health* 1, no. 1 (2007): 2.
Stiglitz, Joseph E, Amartya Sen, and Jean-Paul Fitoussi. *Mismeasuring Our Lives: Why Gdp Doesn't Add Up*. The New Press, 2010.
Stiglitz, Joseph E., Jean-Paul Fitoussi, and Martine Durand. *Beyond Gdp: Measuring What Counts for Economic and Social Performance*. OECD, 2018. https://www.oecd-ilibrary.org/content/publication/9789264307292-en.
The Global Health Network. "Home - Zika Infection." Accessed September 13, 2019. https://zikainfection.tghn.org/.
Tronto, Joan C. *Caring Democracy: Markets, Equality, and Justice*. NYU Press, 2013.
Tronto, Joan C. *Who Cares? How to Reshape a Democratic Politics*. Ithaca, NY: Cornell University Press, 2015.
True, Jacqui. *The Political Economy of Violence against Women*. New York; Oxford: Oxford University Press, 2012.
United Nations. "Funds, Programmes, Specialized Agencies and Others," November 18, 2014. https://www.un.org/en/sections/about-un/funds-programmes-specialized-agencies-and-others/index.html.
———. "Global Health Crises Task Force," November 21, 2016. https://www.un.org/en/global-health-crises-task-force/.
United Nations Conference on Trade and Development. "Unfolding the Links." Accessed September 13, 2019. https://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=1137.
United Nations Development Programme. "Human Development Index (HDI) | Human Development Reports." Accessed September 13, 2019. http://hdr.undp.org/en/content/human-development-index-hdi.
United Nations Economic Commission for Africa. "Socio-Economic Impacts of Ebola on Africa." Addis Abbab: United Nations Economic Commission for Africa, 2005.
United Nations High Commissioner for Refugees. "Situation Refugee Response in Bangladesh." Accessed September 13, 2019. https://data2.unhcr.org/en/situations/myanmar_refugees.
United Nations Office for Disaster Risk Reduction. "Report of the Open-Ended Intergovernmental Expert Working Group on Indicators and Terminology Relating to Disaster Risk Reduction - UNDRR." Accessed September 13, 2019. https://www.unisdr.org/we/inform/publications/51748.
US Department of Health & Human Services. "Glossary." Accessed September 13, 2019. https://www.phe.gov/Preparedness/planning/mscc/handbook/Pages/appendixd.aspx.
Van Belle, Sara, Remco van de Pas, and Bruno Marchal. "Queen Bee in a Beehive: Who as Meta-Governor in Global Health Governance." [In eng]. *BMJ global health* 3, no. 1 (2018): e000448-e48.
Walker, K. "Brussels Airlines Launches "Africa If Not Ebola" Campaign and Maintains Proud Airline Tradition." *Air Transport World* (12 February 2015). https://atwonline.com/blog/brussels-airlines-launches-africa-not-ebola-campaign-and-maintains-proud-airline-tradition.
———. "For All of 2014's Heartbreaks, Brussels Airlines Made Brave Call on Ebola." *Air Transport World* (31 December 2014). https://atwonline.com/blog/all-2014-s-heartbreaks-brussels-airlines-made-brave-call-ebola.

PRE-PEER-REVIEW DRAFT

Waring, Marilyn, and Gloria Steinem. *If Women Counted: A New Feminist Economics*. Harper & Row San Francisco, 1988.
Wenham, Clare, Rebecca Katz, Charles Birungi, Lisa Boden, Mark Eccleston-Turner, Lawrence Gostin, Renzo Guinto, *et al.* "Global Health Security and Universal Health Coverage: From a Marriage of Convenience to a Strategic, Effective Partnership." *BMJ Global Health* 4, no. 1 (2019): e001145.
Wilks, Jeff, Donna Pendergast, and Peter Leggat. *Tourism in Turbulent Times*. Routledge, 2006.
Womens Budget Group. "Investing in the Care Economy to Boost Employment and Gender Equality." *Womens Budget Group* (blog), March 31, 2016. https://wbg.org.uk/analysis/investing-in-the-care-economy-to-boost-employment-and-gender-equality/.
Worland, J. "Why One Airline Flies to West Africa Despite Ebola." *Time* (10 October 2014). http://time.com/3490961/brussels-airlines-ebola/.
World Health Organization. "Workshop on Prioritization, Resource Mapping and Multisectoral Partnership Collaboration for the Implementation of the National Action Plan for Health Security." (2018). https://apps.who.int/iris/bitstream/handle/10665/326579/WHO-WHE-CPI-2019.19-eng.pdf.
World Health Organization. "A Conceptual Framework for Action on the Social Determinants of Health." WHO. Accessed September 13, 2019. http://www.who.int/social_determinants/publications/9789241500852/en/.
———. "A Strategic Framework for Emergency Preparedness." WHO. Accessed September 13, 2019. http://www.who.int/ihr/publications/9789241511827/en/.
———. "About the Forum." Accessed September 13, 2019. https://www.who.int/news-room/events/inaugural-partners-forum/about-the-forum.
———. "Assessed Contributions." WHO. Accessed September 13, 2019. http://www.who.int/about/finances-accountability/funding/assessed-contributions/en/.
———. "Classified Teams." Text. EMT, January 23, 2019. https://extranet.who.int/emt/content/classified-teams.
———. "DARES Operational Framework," November 2017. https://www.who.int/emergencies/partners/dares-operational-framework-nov17.pdf.
———. "Definitions: Emergencies." WHO. Accessed September 13, 2019. https://www.who.int/hac/about/definitions/en/.
———. "Diphtheria – Cox's Bazar in Bangladesh." WHO. Accessed September 13, 2019. http://www.who.int/csr/don/13-december-2017-diphtheria-bangladesh/en/.
———. "Ebola Outbreak in the Democratic Republic of the Congo - 6 June 2019." Accessed September 13, 2019. https://www.who.int/news-room/detail/06-06-2019-ebola-outbreak-in-the-democratic-republic-of-the-congo---6-june-2019.
———. "Emergency Response Framework (ERF)." WHO. Accessed September 13, 2019. http://www.who.int/hac/about/erf/en/.
———. "Framework for a Public Health Emergency Operations Centre." WHO. Accessed September 13, 2019. http://www.who.int/ihr/publications/9789241565134_eng/en/.
———. "Global Action Plan." Accessed September 13, 2019. https://www.who.int/sdg/global-action-plan.

PRE-PEER-REVIEW DRAFT

———. “Global Strategy on Human Resources for Health: Workforce 2030.” WHO. Accessed September 13, 2019. http://www.who.int/hrh/resources/globstrathrh-2030/en/.
———. “Health Emergency and Disaster Risk Management.” WHO. Accessed September 13, 2019. http://www.who.int/hac/techguidance/preparedness/policy_and_strategies/en/.
———. “Health Security.” WHO. Accessed September 13, 2019. http://www.who.int/health-security/en/.
———. “Health Worker Ebola Infections in Guinea, Liberia and Sierra Leone.” WHO. Accessed September 13, 2019. http://www.who.int/csr/resources/publications/ebola/health-worker-infections/en/.
———. “High-Level Meeting on the Ebola Outbreak in the Democratic Republic of the Congo Affirms Support for Government-Led Response and UN System-Wide Approach.” Accessed September 13, 2019. https://www.who.int/news-room/detail/15-07-2019-high-level-meeting-on-the-ebola-outbreak-in-the-democratic-republic-of-the-congo-affirms-support-for-government-led-response-and-un-system-wide-approach.
———. “IHR Monitoring and Evaluation Framework.” WHO. Accessed September 13, 2019. http://www.who.int/ihr/publications/WHO-WHE-CPI-2018.51/en/.
———. “International Health Regulations and Emergency Committees.” WHO. Accessed September 13, 2019. http://www.who.int/features/qa/emergency-committees/en/.
———. “List of Members of, and Advisers to the Meeting of the International Health Regulations (IHR) Emergency Committee for Ebola Viral Disease in the Democratic Republic of the Congo on 12 April 2019.” WHO. Accessed September 13, 2019. http://www.who.int/ihr/procedures/ebola-2019-april-ec-members/en/.
———. “Non-State Actors in Official Relations with WHO.” Accessed September 13, 2019. https://www.who.int/about/collaborations-and-partnerships/who-s-engagement-with-non-state-actors/non-state-actors-in-official-relations-with-who.
———. “Partners.” WHO. Accessed September 13, 2019. http://www.who.int/health-cluster/partners/en/.
———. “Preparedness.” WHO. Accessed September 13, 2019. http://www.who.int/ihr/preparedness/en/.
———. “Programme Budget Web Portal.” Accessed September 13, 2019. https://open.who.int/2018-19/home.
———. “Reform of WHO’s Work in Health Emergency Management: WHO Health Emergencies Programme: Report by the Director-General.” Accessed September 13, 2019. https://apps.who.int/iris/handle/10665/252688.
———. “Seventieth World Health Assembly Update, 24 May.” Accessed September 13, 2019. https://www.who.int/news-room/detail/24-05-2017-seventieth-world-health-assembly-update-24-may.
———. “SPH Country Planning.” Accessed September 13, 2019. https://extranet.who.int/sph/country-planning.
———. “SPH Leadership.” Accessed September 13, 2019. https://extranet.who.int/sph/leadership.
———. “SPH Partners.” Accessed September 13, 2019. https://extranet.who.int/sph/partners.

PRE-PEER-REVIEW DRAFT

———. “Strategic Framework.” WHO. Accessed September 13, 2019. http://www.who.int/health-cluster/about/work/strategic-framework/en/.
———. “Summary of Achievements.” Accessed September 13, 2019. http://open.who.int/2016-17/our-work/category/12/programme/12.003/eba.
———. “The Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response.” WHO. Accessed September 13, 2019. http://www.who.int/ihr/review-committee-2016/en/.
———. “Thirteenth General Programme of Work 2019−2023.” Accessed September 13, 2019. https://www.who.int/about/what-we-do/thirteenth-general-programme-of-work-2019-2023.
———. “Trade and Health: Towards Building a National Strategy.” WHO. Accessed September 13, 2019. https://www.who.int/phi/documents/trade-and-health/en/.
———. “Transforming for Impact.” Accessed September 13, 2019. https://www.who.int/dg/speeches/detail/transforming-for-impact.
———. “Upcoming Non-State Actor Consultation on the Global Action Plan for Healthy Lives and Well-Being.” Accessed September 13, 2019. https://www.who.int/sdg/global-action-plan/upcoming-non-state-actor-consultation-on-the-global-action-plan-for-healthy-lives-and-well-being.
———. “Welcome to GOARN.” Accessed September 13, 2019. https://extranet.who.int/goarn/.
———. “WHE Learning Strategy.” WHO. Accessed September 13, 2019. http://www.who.int/emergencies/publications-resources/training/tools/en/.
———. “WHO HQ Structure March 2019.” Accessed September 13, 2019. https://pages.devex.com/rs/685-KBL-765/images/WHO-HQ-Structure-20190306.pdf.
———. “WHO Launches First Investment Case to Save up to 30 Million Lives.” Accessed September 13, 2019. https://www.who.int/news-room/detail/19-09-2018-who-launches-first-investment-case-to-save-up-to-30-million-lives.
———. “WHO Outbreak Communication Planning Guide.” WHO. Accessed September 13, 2019. http://www.who.int/ihr/publications/outbreak-communication-guide/en/.
———. “WHO Strategic Communications Framework.” WHO. Accessed September 13, 2019. http://www.who.int/communicating-for-health/en/.
———. “WHO’s Engagement with Non-State Actors.” Accessed September 13, 2019. https://www.who.int/about/collaborations-and-partnerships/who-s-engagement-with-non-state-actors.
———. “WHO’s Financing Dialogue 2016.” WHO. Accessed September 13, 2019. http://www.who.int/about/finances-accountability/funding/financing-dialogue/en/.
———. “WHO’s New Health Emergencies Programme.” WHO. Accessed September 13, 2019. http://www.who.int/features/qa/health-emergencies-programme/en/.
———. “WTO Agreements and Public Health.” WHO. Accessed September 13, 2019. https://www.who.int/trade/resource/wtoagreements/en/.
World Inequality Lab. “World Inequality Report 2018.” Accessed September 13, 2019. https://wir2018.wid.world/.
World Trade Organization. “WTO | Sanitary and Phytosanitary Measures - Text of the Agreement.” Accessed September 13, 2019. https://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm.

PRE-PEER-REVIEW DRAFT