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EBOLA AGAIN SHOWS THE INTERNATIONAL HEALTH REGULATIONS ARE BROKEN: WHAT CAN BE DONE DIFFERENTLY TO PREPARE FOR THE NEXT EPIDEMIC?*

Trygve Ottersen,[†] Steven J. Hoffman[††] & Gaëlle Groux[†††]

Epidemics are among the greatest threats to humanity, and the International Health Regulations are the world's key legal instrument for addressing this threat. Since their revision in 2005, the IHR have faced two big tests: the 2009 H1N1 influenza pandemic and the 2014 Ebola epidemic in West Africa. Both exposed major shortcomings of the IHR, and both offered profound lessons for the future.

The objective of this Article is twofold. First, we seek to compare the lessons learned from H1N1 and Ebola for reforming the IHR in order to test the hypothesis

[†] MD PhD, Contact information: Trygve Ottersen, Oslo Group on Global Health Policy, Department of Community Medicine and Global Health, University of Oslo, Oslo, Norway, +47-228-505-37, trygve.ottersen@medisin.uio.no

[††] BHSc JD MA PhD, Contact information: Steven J. Hoffman, Global Strategy Lab, Centre for Health Law, Policy & Ethics, Faculty of Law, University of Ottawa, Ottawa, Ontario, Canada, +1-613-562-5800 ext 8811, steven.hoffman@globalstrategylab.org, @shoffmania

[†††] BSc, Contact information: Gaëlle Groux, Global Strategy Lab, Centre for Health Law, Policy & Ethics, Faculty of Law, University of Ottawa, Ottawa, Ontario, Canada, +1-613-562-5800 ext 3258, gaelle.groux@globalstrategylab.org, @gaellegroux

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that they are similar. Second, we seek to examine the barriers to implementing these lessons and to identify strategies for overcoming those barriers.

We find that the lessons from H1N1 and Ebola are indeed similar, and that opportunities to act on lessons from H1N1 were woefully missed. We identify many political barriers to global collective action and implementation of lessons for the IHR. On that basis, we describe strategies to overcome these barriers, which will hopefully be deployed now to reform the IHR before the policy window following Ebola closes, and before the inevitable next epidemic comes. The emerging threat of the Zika virus underscores that we have no time to waste.

I. INTRODUCTION

Infectious disease outbreaks are among the greatest threats to humanity.[1] Dramatic changes in livestock and agricultural production, population density, mobility, and human-animal interaction are increasing the risk of large-scale epidemics and pandemics.[2] Experts have suggested there is a one percent chance for a severe global

[1] *See* HARVEY RUBIN, ORG. FOR ECON. DEV., FUTURE GLOBAL SHOCKS: PANDEMICS 4 (2011).

[2] *See* THE WORLD BANK, PEOPLE, PATHOGENS AND OUR PLANET: TOWARDS A ONE HEALTH APPROACH FOR CONTROLLING ZOONOTIC DISEASES 7-11 (2010); Stephen S. Morse et al., *Prediction and Prevention of the Next Pandemic Zoonosis*, 380 LANCET 1956, 1956-59 (2012).

pandemic to occur in any given year.[3] This risk is linked to potentially catastrophic consequences. The 1918 influenza pandemic, for example, killed fifty to one hundred million people and caused widespread social and economic disruption.[4] It has been estimated that under today's circumstances, a flu pandemic could cut world economic activity by almost five percent[5] and that the annual expected loss from potential pandemics is more than sixty billion USD.[6] All this makes insurers now see pandemics as the top extreme risk to their industry, above economic depression and terrorism.[7]

Fortunately, the world has the International Health Regulations ("IHR").[8] Revised in 2005, this legally-binding international treaty provides a framework for preventing the cross-border spread of disease. It has the potential to mobilize collective action for reducing the risk of large-scale disease outbreaks and the impact of those that do occur. Yet, the two big tests of the revised IHR have questioned the extent to which this potential has been realized. After the 2009 H1N1 influenza pandemic, it was widely agreed that the IHR had major weaknesses and needed to be strengthened.[9] Now, following the 2014 Ebola epidemic in West Africa, the situation appears very much the same. Again, it seems there is widespread agreement that the IHR suffers from several major shortcomings and that transformative changes are needed.[10] This may all sound reasonable, but there is concern that the lessons from Ebola are similar to the lessons from H1N1, such that we have failed to act on what was previously

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[3] *See* THE WORLD BANK, PEOPLE, PATHOGENS AND OUR PLANET: THE ECONOMICS OF ONE HEALTH 23 (2012) ("A severe pandemic would occur with a probability of 1 percent in any year"); *Transcript - Toward Universal Health Coverage for 2030 - April 11, 2014*, THE WORLD BANK (Apr. 11, 2014), http://www.worldbank.org/en/topic/pandemics/brief/transcript-toward-universal-health-coverage-for-2030 [http://perma.cc/KM2F-NE76] (noting some "optimists" believe the risk of pandemic flu is less than one percent per year).

[4] Niall P. A. S. Johnson & Juergen Mueller, *Updating the Accounts: Global Mortality of the 1918-1920 "Spanish" Influenza Pandemic*, 76 BULL. HIST. MED. 105, 105 (2002).

[5] COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK FOR THE FUTURE & NAT'L ACAD. OF MED., THE NEGLECTED DIMENSION OF GLOBAL SECURITY: A FRAMEWORK TO COUNTER INFECTIOUS DISEASE CRISES 18 (2016).

[6] *Id.*

[7] TOWERS WATSON, EXTREME RISKS – INSURANCE SECTOR SURVEY 2013: RESPONSE ANALYSIS 3 (2013) ("Pandemic, natural catastrophe and food/water/energy crisis are voted by respondents as the three most important extreme risks for the insurance industry to worry about in the long term.").

[8] INTERNATIONAL HEALTH REGULATIONS 2015, WORLD HEALTH ORG. [WHO] (2d ed. 2005), http://apps.who.int/iris/bitstream/10665/43883/1/9789241580410_eng.pdf [http://perma.cc/3UL2-BKNR] [hereinafter IHR].

[9] *See, e.g.*, WHO, STRENGTHENING RESPONSE TO PANDEMICS AND OTHER PUBLIC-HEALTH EMERGENCIES: REPORT OF THE REVIEW COMMITTEE ON THE FUNCTIONING OF THE INTERNATIONAL HEALTH REGULATIONS (2005) AND ON PANDEMIC INFLUENZA (H1N1) 2009 (2011), http://apps.who.int/iris/bitstream/10665/75235/1/9789241564335_eng.pdf [http://perma.cc/C8RB-YM7V] [hereinafter WHO, RESPONSE TO PANDEMICS]; Tim K. Mackey & Bryan A. Liang, *Lessons from SARS and H1N1/A: Employing a WHO–WTO Forum to Promote Optimal Economic-Public Health Pandemic Response*, 33 J. PUB. HEALTH POL'Y 119 (2012); Kumanan Wilson, John S. Brownstein & David P. Fidler, *Strengthening the International Health Regulations: Lessons from the H1N1 Pandemic*, 25 HEALTH POL'Y & PLAN. 505 (2010).

[10] *See, e.g.*, WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL 5 (2015); Editorial, *Ebola: What Lessons for the International Health Regulations?*, 384 LANCET 1321, 1321 (2014); Lawrence O. Gostin & Eric A. Friedman, *A Retrospective and Prospective Analysis of the West African Ebola Virus Disease Epidemic: Robust National Health Systems at the Foundation and an Empowered WHO at the Apex*, 385 LANCET 1902, 1906 (2015); David L. Heymann et al., *Global Health Security: The Wider Lessons from the West African Ebola Virus Disease Epidemic*, 385 LANCET 1884, 1884 (2015); Suerie Moon et al., *Will Ebola Change the Game? Ten Essential Reforms Before the Next Pandemic,* 386 LANCET 2204, 2206 (2015); *see generally* Lawrence O. Gostin, Mary C. DeBartolo & Eric A. Friedman, *The International Health Regulations 10 Years on: The Governing Framework for Global Health Security*, 386 LANCET 2222 (2015).

learned and are now merely restating old lessons. This suggests that to achieve real change, we need to take lessons one step further and ask about the implementation of the lessons themselves; about the political barriers to action and the strategies needed to overcome them. The emerging threat of the Zika virus underscores that we have no time to waste.[11]

The objective of this Article is twofold. First, we seek to compare the lessons from H1N1 and Ebola head on, in order to test the hypothesis that the lessons are similar and to examine the most important similarities and differences. Second, we seek to examine the barriers to implementing these lessons and to identify strategies for overcoming the barriers and effectively implementing IHR reform proposals. Parts II and III introduce the IHR and the H1N1 and Ebola outbreaks, respectively. Part IV analyzes the operation of the IHR during those outbreaks and the lessons learned from each. Part V examines the barriers to implementing lessons learned, and the final section concludes with strategies to overcome them.

II. THE INTERNATIONAL HEALTH REGULATIONS

A. HISTORY

The current IHR has a long pedigree. Travel and trade measures to stop the spread of infectious diseases were imposed as early as in the fourteenth century.[12] At that time, the city of Dubrovnik (then known as Ragusa) required ships coming from infected, or suspected to be infected, sites to stay at anchor for thirty days before docking.[13] The isolation period for land travellers was 40 days, corresponding to the term "quarantine."[14]

More coordinated efforts to stem the international spread of disease began in the mid-1800s, chiefly in the form of international sanitary conferences, with the first one taking place in Paris in 1851.[15] These conferences were held mainly out of fear that diseases from Asia and the Middle East would spread to Europe and North America.[16] Over the next 100 years, several international sanitary conventions were adopted and became part of international law.[17] International institutions were also established, including the Pan-American Sanitary Bureau (1902) and l'Office International d'Hygiène Publique (1907).[18] These agreements and institutions were part of what has

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[11] *See WHO Statement on the First Meeting of the International Health Regulations (2005) (IHR 2005) Emergency Committee on Zika Virus and Observed Increase in Neurological Disorders and Neonatal Malformations*, WHO (Feb. 1, 2016), http://www.who.int/mediacentre/news/statements/2016/1st-emergency-committee-zika/en/ [http://perma.cc/YQN3-4BMG] (discussing how Zika is currently being handled under the IHR).

[12] S. Declich & A. O. Carter, *Public Health Surveillance: Historical Origins, Methods and Evaluation*, 72 BULL. WORLD HEALTH ORG. 285, 285 (1994); Gian Franco Gensini et al., *The Concept of Quarantine in History: From Plague to SARS*, 49 J. INFECTION 257, 258 (2004).

[13] Gensini et al., *supra* note 12, at 258.

[14] *Id.*

[15] *See* SARA E. DAVIES, ADAM KAMRADT-SCOTT & SIMON RUSHTON, DISEASE DIPLOMACY: INTERNATIONAL NORMS AND GLOBAL HEALTH SECURITY (2015); Steven J. Hoffman, *The Evolution, Etiology and Eventualities of the Global Health Security Regime*, 25 HEALTH POL'Y & PLAN. 510, 511-12 (2010).

[16] *See* David P. Fidler, *From International Sanitary Conventions to Global Health Security: The New International Health Regulations*, 4 CHINESE J. INT. L. 325, 331 (2005).

[17] DAVID P. FIDLER, INTERNATIONAL LAW AND INFECTIOUS DISEASES 22-23 (1999).

[18] Hoffman, *supra* note 15, at 512.

been called the "classical regime" governing global disease outbreaks.[19] This regime had two basic components: (1) obligations on state parties to "notify each other about outbreaks of specified infectious diseases in their territories"; and (2) obligations to "limit disease-prevention measures that restricted international travel and trade to those based on scientific evidence and public health principles."[20]

After the establishment of the World Health Organization ("WHO") in 1948, it took only three years before its plenary governing body—the World Health Assembly—adopted the International Sanitary Regulations ("ISR").[21] The ISR were established under the authority of Articles 21 and 22 of the WHO constitution, which allowed the WHO to make regulations on "sanitary and quarantine requirements and other procedures designed to prevent the international spread of disease."[22] The 1951 ISR brought together the pre-existing twelve conventions and related agreements into one binding legal framework overseen by the WHO.[23] In 1969, the ISR changed its name to the International Health Regulations[24] and was narrowed in scope from six to four diseases; a scope that was further narrowed in 1981 to only include cholera, plague, and yellow fever.[25] In the period from 1951 to the outbreak of severe acute respiratory syndrome ("SARS") in 2002, the classical regime became "marginalized" and limitations of the ISR/IHR became increasingly evident.[26] One obvious shortcoming was the exclusive emphasis on three diseases.[27] Another was the lack of accountability and enforcement mechanisms to promote states' compliance with the Regulations.[28] It was also a problem that the IHR only allowed the WHO to act on epidemiological evidence provided by its member states rather than independent scientists, research centers, civil society organizations, or news media.[29]

Ever increasing appreciation of these limitations led the World Health Assembly to formally initiate an IHR revision process in 1995.[30] This decision was motivated by the 1994 plague outbreak in India; the 1995 Ebola outbreak in what was formerly Zaire; and, more fundamentally, an increasing sensitivity to the transnational risks arising from the greater interconnectedness of globalization and to the link between infectious diseases and national security.[31]

Even so, the IHR revision process moved slowly for a long time. It had lasted seven years when an unusual form of respiratory illness started to emerge in the Guangdong Province of China in November, 2002.[32] This was the beginning of the SARS outbreak; an outbreak widely seen as the trigger of the final push towards the

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[19] Fidler, *supra* note 16, at 327-28 (defining the "classical regime" as a period between 1851 and 1951).

[20] *Id.* at 328.

[21] DAVIES, KAMRADT-SCOTT, AND RUSHTON, *supra* note 15, at 5.

[22] Barbara von Tigerstrom, *The Revised International Health Regulations and Restraint of National Health Measures*, 13 HEALTH L. J. 35, 36 (2005).

[23] Fidler, *supra* note 16, at 328-29.

[24] *Id.* at 333.

[25] DAVIES, KAMRADT-SCOTT, AND RUSHTON, *supra* note 15, at 5.

[26] *Id.* at 21; Fidler, *supra* note 16, at 333.

[27] von Tigerstrom, *supra* note 22, at 36 (limiting the focus to plague, cholera, and yellow fever).

[28] *Id.* at 37; Hoffman, *supra* note 15, at 514.

[29] David P. Fidler & Lawrence O. Gostin, *The New International Health Regulations: An Historic Development for International Law and Public Health*, 34 J. L. MED. & ETHICS 85, 90 (2006).

[30] Fidler, *supra* note 16, at 342; Rebecca Katz & Julie Fischer, *The Revised International Health Regulations: A Framework for Global Pandemic Response*, 3 GLOBAL HEALTH GOVERNANCE 1, 2 (2010).

[31] Guénaël Rodier et al., *Global Public Health Security*, 13 EMERGING INFECTIOUS DISEASES 1447, 1448 (2007).

[32] *See* INST. OF MED., LEARNING FROM SARS: PREPARING FOR THE NEXT DISEASE OUTBREAK 4 (Stacey Knobler et al. eds., 2004).

most recent IHR reforms.[33] The SARS outbreak demonstrated to the world the many shortcomings of the old IHR.[34] In particular, SARS was not caused by any of the three pathogens covered by the IHR,[35] and it took months before the full scale of the outbreak was acknowledged because the Chinese government initially refused to cooperate with the WHO.[36]

The new IHR were eventually adopted by the World Health Assembly in 2005. Five key shortcomings of the 1969 IHR had then been addressed**.** First, the scope of the IHR had been expanded from the three pathogens to cover the broader terms of "event," "public health risk," and "public health emergency of international concern" ("PHEIC").[37] Second, the new IHR came with obligations on state parties to develop minimum core public health capacities.[38] Third, the new IHR allowed the WHO to access and use information from non-governmental sources.[39] Fourth, the WHO Director-General was authorized to declare PHEICs and to issue recommendations on how state parties are to address such emergencies.[40] And finally, the new IHR explicitly required States to respect human rights in their implementation of the Regulations.[41]

The IHR entered into force on June 15, 2007, for the 191 states that had not made reservations to them. As of February 2016, there were 196 state parties to the IHR, including all WHO member states**.**[42]

B. STRUCTURE AND CONTENT

The purpose of the IHR is 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."[43] Simply put, the aim is to maximize protection against public health risks while minimizing interference with travel and trade. The components of the IHR can be categorized in several ways.[44] What follows is a simple categorization that is roughly aligned with the chain of events in the case of a PHEIC.

1. National Public Health Capacities

The IHR require state parties to develop, strengthen, and maintain two types of national public health capacities. One is core capacities to detect, notify, and report events.[45] The other is core capacities to respond promptly and effectively to public

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[33] *See* Fidler, *supra* note 16, at 355 ("In May 2003, the [World Health Assembly] supported WHO's responses to SARS and called for the IHR revision process to move forward to completion.").

[34] *See, e.g.*, *id.* at 354; DAVIES, KAMRADT-SCOTT, AND RUSHTON, *supra* note 15, at 44; INST. OF MED., *supra* note 32, at 113-115.

[35] DAVIES, KAMRADT-SCOTT, AND RUSHTON, *supra* note 15, at 44.

[36] *Id.* at 47-48.

[37] *See* Fidler, *supra* note 16, at 361.

[38] *See id* at 358.

[39] *See id.*

[40] *See id.*

[41] *See id.*

[42] *States Parties to the International Health Regulations (2005),* WHO (2016), http://www.who.int/ihr/legal_issues/states_parties/en/ [http://perma.cc/MS5B-S6C7].

[43] IHR, *supra* note 8, at art. 2.

[44] *See, e.g.*, WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 8; Fidler & Gostin, *supra* note 29, at 86-91.

[45] IHR, *supra* note 8. at art. 5.

health risks and PHEICs.[46] These capacities cover a wide range of surveillance, preparedness, and response activities, such as mapping of potential hazards, stockpiling medicines, and establishment of adequate laboratory services.[47]

Under the new IHR, state parties are required to report on their implementation of the IHR to the World Health Assembly,[48] and the Assembly decided in 2008 that this should be done on a yearly basis.[49]

Although the IHR entered into force in 2007, state parties did not have to meet the public health capacity requirements until 2012.[50] The parties could also request two extensions of two years.[51] While the IHR urge state parties to collaborate and provide technical and financial support,[52] they do not specify any enforceable obligations to do so or provide for any pooled financing mechanism to facilitate this kind of support.

2. Notification and Sharing of Information

The IHR require state parties to notify the WHO of all events that may constitute a PHEIC within its territory.[53] A PHEIC is defined as an extraordinary event that is determined to both constitute a "public health risk to other States through the international spread of disease," and "to potentially require a coordinated international response."[54] An "event," more generally, is defined as a "manifestation of disease or an occurrence that creates a potential for disease."[55]

The IHR provide state parties with a decision instrument for assessing whether an event may constitute a PHEIC.[56] Central to this instrument are four questions: (1) is the public health impact of the event serious?; (2) is the event unusual or unexpected?; (3) is there a significant risk of international spread?; and (4) is there a significant risk of international travel and trade restrictions? If a state party identifies an event that may constitute a PHEIC, the State must notify the WHO within twenty-four hours.[57] Moreover, if a state party has evidence of such an event, it is required to provide the WHO with "all relevant public health information."[58]

State parties are also obligated to respond to requests from the WHO seeking to verify the existence of an event that may constitute a PHEIC.[59] Beyond these obligations, the IHR provide an explicit option for consultations between a state party and the WHO in the case of events occurring within its territory that do not require notification.[60]

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[46] *Id.*, at art. 13.

[47] *See* WHO, CHECKLIST AND INDICATORS FOR MONITORING PROGRESS IN THE DEVELOPMENT OF IHR CORE CAPACITIES IN STATES PARTIES 15-17 (2013), http://apps.who.int/iris/bitstream/10665/84933/1/WHO_HSE_GCR_2013.2_eng.pdf [http://perma.cc/YG2N-3XMJ] (explaining the core capacities).

[48] IHR, *supra* note 8, at art. 54.

[49] WORLD HEALTH ASSEMBLY, *Sixty-First World Health Assembly: Resolutions and Decisions Annexes*, at 3-4, WHA61/2008/REC/1 (2008), http://apps.who.int/gb/ebwha/pdf_files/WHA61-REC1/A61_REC1-en.pdf [http://perma.cc/9YUR-E3HL].

[50] IHR, *supra* note 8, at arts. 5, 13.

[51] *Id.*

[52] *Id.* at art. 44.

[53] *Id.* at art. 6.

[54] *Id.* at art. 1.

[55] *Id.*

[56] *Id.* at Annex 2.

[57] *Id.* at art. 6.

[58] *Id.* at art. 7.

[59] *Id.* at art. 10.

[60] *Id.* at art. 8.

3. The WHO's Assessment, Declarations, and Recommendations

According to the IHR, the WHO should verify and assess notifications and other relevant information.[61] The WHO is supposed to primarily act in collaboration with state parties in whose territory the event is occurring.[62]

A new feature of the 2005 IHR is that the WHO may consider information from sources other than state notifications or consultations.[63] This means that the WHO can access and use information from non-governmental sources, including health workers, civil society organizations, and news media. In these cases, the IHR requires that the WHO request verification from the state party in whose territory the event is allegedly occurring.[64] The WHO cannot act on any non-governmental information before it has tried to obtain such verification.

The IHR also authorize the WHO Director-General to declare a PHEIC.[65] Before doing so, the Director-General must consult with the state party in whose territory the event arises[66] and obtain the advice of an Emergency Committee,[67] which is a temporary committee of experts established by the Director-General.

For situations in which a PHEIC has been declared, the IHR give the WHO's Director-General the power to issue temporary recommendations.[68] These recommendations may include health measures to be implemented by the state party in whose territory the event is occurring, or by other parties.[69] An equally important class of recommendations includes those advising against specific health measures.[70]

4. Permissible Health Measures

The IHR impose a range of limitations on the health measures state parties can implement.[71] These constraints are primarily motivated by concerns for travel, trade, and human rights. With regard to travelers, state parties cannot generally require invasive medical examination, vaccination, or other prophylaxis as a condition of entry,[72] and state parties are required to respect travelers' dignity, human rights, and fundamental freedoms.[73] In addition, the IHR require that any health measures be applied in a "transparent and non-discriminatory manner."[74]

The IHR also impose restrictions on the "additional health measures" state parties can pursue.[75] For these measures to be permitted, they must meet a number of conditions specified in Article 43. In particular, the additional measures are not to be more restrictive of international traffic nor more invasive or intrusive to persons than reasonably available alternatives that would achieve the appropriate level of health protection. The IHR require state parties to base their determination of whether to

[61] *Id.* at art. 11.
[62] *Id.*
[63] *Id.* at art. 9.
[64] *Id.* at art. 10.
[65] *Id.* at art. 12.
[66] *Id.*
[67] *Id.*
[68] *Id.* at art. 15.
[69] *Id.*
[70] *Id.* at art. 18 (listing recommendations with respect to persons, baggage, cargo, containers, conveyances, goods and postal parcels).
[71] von Tigerstrom, *supra* note 22, at 41-48.
[72] IHR, *supra* note 8, at art. 31.
[73] *Id.* at art. 32.
[74] *Id.* at art. 42.
[75] *Id.* at art. 43.

implement additional health measures upon scientific principles, available evidence and information, and specific guidance or advice from the WHO.[76] A state party implementing an additional measure that significantly interferes with international traffic is required to inform the WHO within forty-eight hours of implementation about this measure and its health rationale, unless covered by a temporary or standing recommendation.[77] The WHO may then request that the state party concerned reconsider the application of the measure,[78] and any state party impacted by an additional measure may request consultation with the implementing state party.[79] However, there are no strong enforcement mechanisms compelling states to actually do so.

III. THE H1N1 AND EBOLA OUTBREAKS

The 2009 H1N1 pandemic was the first influenza pandemic of the twenty-first century and the first major test for the new IHR. The second big test came in 2014, with the largest Ebola outbreak ever recorded. This outbreak is technically not considered a pandemic, as nearly all cases originated in one region of the world.

A. THE 2009 H1N1 PANDEMIC

In February and early March 2009, the first cases of what was to become the 2009 H1N1 pandemic appeared in Mexico.[80] In mid-March, Mexican authorities detected an unusual increase in the number of cases of influenza-like illness,[81] and in early April, enhanced surveillance detected an emerging outbreak in the village of La Gloria, Veracruz.[82] The Pan American Health Organization's ("PAHO") surveillance system identified the associated increase in media attention surrounding the outbreak and requested further information from Mexico's National IHR Focal Point.[83] In response, the Focal Point completed a risk assessment using the IHR decision instrument and "reported that [the La Gloria event] might constitute a Public Health Emergency of International Concern."[84]

By this time, the virus had already spread outside Mexico.[85] On April 23, it was confirmed that viruses found in Mexico and California were "genetically identical," and the Mexican authorities immediately reported this information to the WHO.[86] A

[76] *Id.*
[77] *Id.*
[78] *Id.*
[79] *Id.*
[80] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 29.
[81] *See id.*; *see also* WHO, *New Influenza A(H1N1) Virus Infections: Global Surveillance Summary, May 2009*, 84 WKLY. EPIDEMIOLOGICAL REC. 173, 173 (2009) [hereinafter WHO, *New Influenza*].
[82] *See* DAVIES, KAMRADT-SCOTT, AND RUSHTON, *supra* note 15, at 95; WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 29.
[83] *See* WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 29; *see also The 2009 H1N1 Pandemic*, CTRS. FOR DISEASE CONTROL & PREVENTION [CDC] (Aug. 3, 2010), http://www.cdc.gov/h1n1flu/cdcresponse.htm [http://perma.cc/7D3W-733H] (summarizing key events of the 2009 H1N1 pandemic).
[84] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 29.
[85] *See id.* ("Coincident with the outbreaks in Mexico, at the end of March two children in adjacent counties in southern California in the USA, became ill with acute respiratory illnesses.").
[86] WHO, *New Influenza*, *supra* note 81, at 174.

WHO Emergency Committee convened for the first time on April 25, and later that day, Dr. Margaret Chan, WHO's Director-General, declared a PHEIC.[87]

The virus continued to spread within Mexico, the United States, and beyond. On June 11, 2009, Dr. Chan declared that an influenza pandemic was underway.[88] Over the next year, more than 214 countries and territories reported laboratory-confirmed cases of H1N1.[89] Finally, on August 10, 2010, Dr. Chan announced that the world was moving into H1N1's post-pandemic period.[90] Estimates of total H1N1 cases globally range from several tens of millions to 200 million.[91] While there were around 18,500 laboratory-confirmed deaths worldwide, modeling has suggested overall mortality of more than fifteen times that figure.[92]

B. THE 2014 EBOLA EPIDEMIC

The 2014 Ebola epidemic in West Africa began with a toddler in the remote village of Meliandou in Guinea.[93] The boy developed a fever on December 26, 2013, and died a few days later.[94] For nearly three months, the virus spread as a mysterious disease.[95] While local health officials at first suspected cholera, microscopic examination of patient samples concluded that the unknown disease was different.[96] Further investigations were conducted by the Guinean Ministry of Health, Médecins Sans Frontières ("MSF"), and the WHO.[97] Eventually, the diagnosis of Ebola was confirmed by the Institut Pasteur in France on March 22, 2014.[98] The Guinean government notified the WHO the same day, and the WHO publicly announced the outbreak the day after.[99]

In the following months, the virus spread throughout Guinea, Liberia, and Sierra Leone—the three countries that would become most affected.[100] In this period, there were numerous warnings from early responders. MSF stated in late March that the outbreak was "unprecedented" with a spread "never before seen."[101] On June 21, MSF

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[87] *See id.* (noting that the Director-General declared a PHEIC on April 25, 2009); WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 32 (noting that April 25, 2009 was also the first time the Emergency Committee convened).

[88] Margaret Chan, *World Now at the Start of 2009 Influenza Pandemic*, WHO (June 11, 2009), http://www.who.int/mediacentre/news/statements/2009/h1n1_pandemic_phase6_20090611/en/ [http://perma.cc/WE72-2KRF] (statement to the press by the WHO Director-General).

[89] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 40.

[90] *H1N1 in Post-Pandemic Period*, WHO (Aug. 10, 2010), http://www.who.int/mediacentre/news/statements/2010/h1n1_vpc_20100810/en/ [http://perma.cc/MQ9M-5KRP] (Director-General's opening statement at a virtual press conference).

[91] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 27.

[92] Fatimah S. Dawood et al., *Estimated Global Mortality Associated with the First 12 Months of 2009 Pandemic Influenza A H1N1 Virus Circulation: A Modelling Study*, 12 LANCET INFECTIOUS DISEASES 687, 687 (2012).

[93] *See One Year into the Ebola Epidemic: A Deadly, Tenacious and Unforgiving Virus*, WHO (Jan. 2015), http://www.who.int/csr/disease/ebola/one-year-report/ebola-report-1-year.pdf?ua=1.

[94] *Id.*

[95] *See id.*

[96] *See id.*

[97] *Id.*

[98] *Id.* The Institut confirmed that the causative agent was a filovirus on March 21st, which narrowed the diagnosis to either Ebola or Marburg hemorrhagic fever, but it was not until the next day that the lab was able to confirm it was indeed Ebola.

[99] *Id.*

[100] *Id.*

[101] *Ebola Outbreak in Guinea Unprecedented - MSF*, BBC NEWS, Mar. 31, 2014, http://www.bbc.com/news/world-africa-26825869 [http://perma.cc/9CVS-GL4D].

director of operations called the epidemic "out of control."[102] In July, Ebola spread to neighboring Nigeria, resulting in nineteen confirmed cases.[103] And in early August, a medical missionary who contracted Ebola while working in Liberia was transported back to the United States for treatment.[104] He became the first Ebola patient treated outside Africa.[105] This was the backdrop when the WHO's Director-General declared a PHEIC on August 8, 2014.[106] At that time, Ebola had already claimed at least 932 lives.[107] Following the declaration, the virus continued to spread in Guinea, Liberia, and Sierra Leone, with some new cases also appearing in Italy, Mali, Senegal, Spain, the United Kingdom, and the United States.[108] The national and international response gained momentum in the fall of 2014,[109] and the number of new cases per week increased until October 2014.[110] Since then, transmission has slowly decreased, until West Africa was declared free of Ebola transmission on January 14, 2016.[111] The high risk for flare-ups was also acknowledged, and a new case was confirmed in Sierra Leone just hours after the declaration.[112] Up to that date, more than 11,300 deaths from Ebola had been recorded.[113]

IV. LESSONS FROM H1N1 AND EBOLA FOR THE IHR

After H1N1, the most prominent lessons-learned exercise was conducted by the WHO's Review Committee on the Functioning of the International Health Regulations (2005) and on Pandemic Influenza (H1N1) 2009.[114] Alongside, numerous commentators offered their lessons and recommendations. After Ebola, multiple comprehensive lessons-learned exercises have taken place. Among these are those by the WHO's Ebola Interim Assessment Panel,[115] the Harvard-LSHTM Independent Panel on the Global Response to Ebola,[116] the U.S. National Academy of Medicine's

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[102] *Ebola in West Africa: Epidemic Requires Massive Deployment of Resources*, MÉDECINS SANS FRONTIÈRES (June 21, 2014), http://www.msf.org/article/ebola-west-africa-epidemic-requires-massive-deployment-resources [http://perma.cc/4BCR-3N9Q].

[103] *See* MÉDECINS SANS FRONTIÈRES, PUSHED TO THE LIMIT AND BEYOND: A YEAR INTO THE LARGEST EVER EBOLA OUTBREAK 12 (2015), http://www.msf.org/sites/msf.org/files/msf1yearebolareport_en_230315.pdf [hereinafter MÉDECINS SANS FRONTIÈRES, PUSHED TO THE LIMIT].

[104] *See* David S. Stephens et al., *Ebola Virus Disease: Experience and Decision Making for the First Patients Outside of Africa*, 12 PUB. LIBR. SCI. MED. 1, 1 (2015).

[105] *Id.*

[106] WHO, *Statement on the First meeting of the IHR Emergency Committee on the 2014 Ebola Outbreak in West Africa* (2014), http://www.who.int/mediacentre/news/statements/2014/ebola-20140808/en/.[http://perma.cc/6T2M-WU99] ("It was the unanimous view of the Committee that the conditions for a Public Health Emergency of International Concern (PHEIC) have been met.").

[107] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 4.

[108] *Id.* at 8.

[109] *Id.* at 19; UNITED NATIONS, GLOBAL EBOLA RESPONSE, MAKING A DIFFERENCE: PROGRESS REPORT 2015 9-15 (2015), http://ebolaresponse.un.org/progress-2015 [http://perma.cc/YHJ2-ZW6E].

[110] *Id.* at 14.

[111] *Latest Ebola Outbreak Over in Liberia; West Africa is at Zero, but New Flare-Ups are Likely to Occur*, WHO (Jan. 14, 2016), http://www.who.int/mediacentre/news/releases/2016/ebola-zero-liberia/en/ [http://perma.cc/PZB7-7JVA] [hereinafter WHO, *Latest Ebola Outbreak*].

[112] *See generally* WHO, EBOLA SITUATION REPORT - 30 DECEMBER 2015 (2015); WHO, EBOLA SITUATION REPORT - 20 JANUARY 2016 (2016).

[113] WHO, *Latest Ebola Outbreak Over*, *supra* note 111. West Africa is at zero, but new flare-ups are likely to occur. *Id.*

[114] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 19.

[115] WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 6.

[116] Moon et al., *supra* note 10, at 2204.

Commission on a Global Health Risk Framework for the Future,[117] and the UN Secretary-General's High-level Panel on the Global Response to Health Crises.[118] In addition, the WHO's Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response will provide their final report to the World Health Assembly in May 2016.[119] Many of the recommendations proposed by the various lesson-learned exercises do not require a renegotiation and revision of the IHR provisions. However, these recommendations are usefully seen as one kind of IHR-reform proposal, as they are critical to the effectuation of the IHR.

A. COUNTRIES' PUBLIC HEALTH CAPACITIES

The IHR require that state parties achieve core capacities to detect, assess, notify, and report events and to respond to public health risks and PHEICs.[120] The deadline for achieving these capacities was set to five years from when the Regulations became effective, or June 2012.[121] However, when the WHO conducted a survey prior to this deadline, only sixty-six percent of 194 state parties responded,[122] and only ten percent of reporting states indicated that they had fully implemented the IHR core capacities.[123] H1N1 made these dire statistics clear to the world. While Mexican authorities reacted swiftly to the outbreak, limited surveillance capacities delayed identification of the outbreak in Mexico.[124] Similarly, the low number of cases and fatalities reported by many African countries during the H1N1 pandemic has been attributed to a lack of technical capacity rather than actual lack of cases.[125] Also, outside Africa, many countries were overwhelmed by the WHO's data requests due to limited laboratory capacities.[126]

One of the key recommendations after H1N1, therefore, was to strengthen the core public health capacities required by the IHR.[127] Some proposals focused on new mechanisms for helping countries to monitor their core capacities, on updating the guidelines for national focal points, and on examples of IHR "good practices."[128] It was noted that detailed guidelines for assessment, planning, and capacity building

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[117] COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK , *supra* note 5, at 2.

[118] PROTECTING HUMANITY FROM FUTURE HEALTH CRISES: REPORT OF THE HIGH-LEVEL PANEL ON THE GLOBAL RESPONSE TO HEALTH CRISES 11 (Advanced Unedited Copy 2016).

[119] WHO, EB138/20: IMPLEMENTATION OF THE INTERNATIONAL HEALTH REGULATIONS (2005): PROGRESS REPORT OF THE REVIEW COMMITTEE ON THE ROLE OF THE INTERNATIONAL HEALTH REGULATIONS (2005) IN THE EBOLA OUTBREAK AND RESPONSE 20 (2016) [hereinafter WHO, IMPLEMENTATION OF THE IHR].

[120] IHR, *supra* note 8, at arts. 5, 13.

[121] *Id.*

[122] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 112.

[123] *Id.*

[124] Wilson, Brownstein, & Fidler, *supra* note 9, at 506; James Osborne, *Mexico Criticized for Slow Response to Swine Flu*, FOX NEWS (Apr. 28, 2009), http://www.foxnews.com/story/2009/04/28/mexico-criticized-for-slow-response-to-swine-flu.html [http://perma.cc/TEV4-DSDD].

[125] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 113; DAVIES, KAMRADT-SCOTT, & RUSHTON, *supra* note 15, at 100.

[126] Harvey V. Fineberg, *Pandemic Preparedness and Response — Lessons from the H1N1 Influenza of 2009*, 370 NEW ENG. J. MED. 1335, 1339 (2014).

[127] *See, e.g.*, WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 112; DAVIES, KAMRADT-SCOTT, & RUSHTON, *supra* note 15, at 136; PREVENT Project, BEYOND PANDEMICS: A WHOLE-OF-SOCIETY APPROACH TO DISASTER PREPAREDNESS 69-102 (2011), http://photos.state.gov/libraries/usun-rome/164264/PDF/tasw.pdf; Fineberg, *supra* note 126, at 1341; Wilson, Brownstein, & Fidler, *supra* note 9, at 506; Lawrence O. Gostin, *Influenza A(H1N1) and Pandemic Preparedness Under the Rule of International Law*, 301 JAMA 2376, 2376-78 (2009).

[128] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at xviii.

were absent until the spring of 2010.[129] Others called for stronger external support for capacity building, recommending that mechanisms be developed to facilitate richer countries' support for poorer countries.[130] There were also proposals for changing the way development assistance is administered[131] and for linking external support to countries' demonstrated improvements in public health capacities.[132]

The lessons from H1N1 were generally not acted upon.[133] Dr. Chan blamed this inaction on the global financial crisis and a lack of resources.[134] Whatever was to blame, very few countries had reached full implementation of the IHR by 2013, just prior to the outbreak of Ebola.[135] Also, for each of the specific public health capacities, only a limited number of countries had fulfilled IHR requirements, and many countries had not even reported their status.[136] Among those countries that failed to fully achieve the IHR-related capacities was Sierra Leone, and among those that failed to report any data in 2013 were Guinea and Liberia.[137]

[129] Katz & Fischer, *supra* note 30, at 13.

[130] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 112; Gostin, *supra* note 127, at 2377; Wilson, Brownstein, & Fidler, *supra* note 9, at 508.

[131] Tiffany L. Bogich et al., *Preventing Pandemics Via International Development: A Systems Approach*, 9 PUB. LIBR. SCI. MED 1, 2 (2012); Katz & Fischer, *supra* note 30, at 14-15.

[132] Wilson, Brownstein, & Fidler, *supra* note 9, at 508.

[133] *See, e.g.*, WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 5; Heymann et al., *supra* note 10, at 1888; Adam Kamradt-Scott, *WHO's to Blame? The World Health Organization and the 2014 Ebola Outbreak in West Africa*, 37 THIRD WORLD Q. 401, 404 (2016).

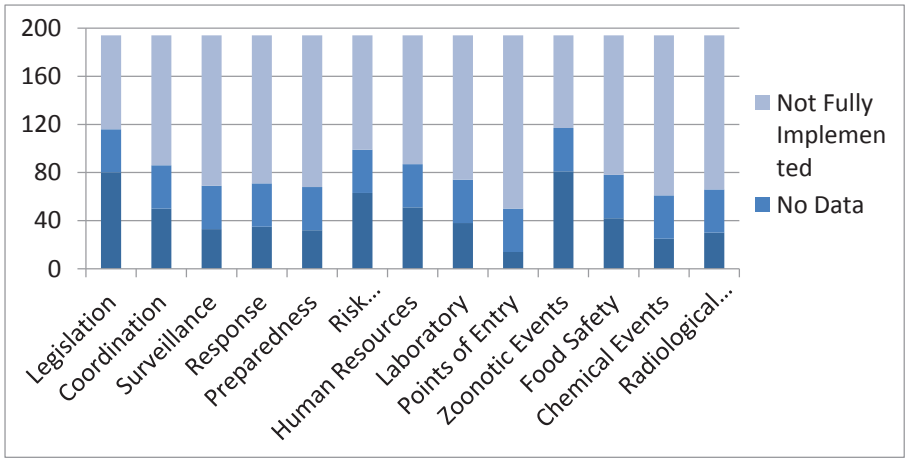
[134] Kai Kupferschmidt, *In Wake of Ebola Epidemic, Margaret Chan Wants Countries to Put Their Money Where Their Mouth Is*, SCIENCE (Oct. 14, 2015, 3:30 PM), http://news.sciencemag.org/health/2015/10/wake-ebola-epidemic-margaret-chan-wants-countries-put-their-money-where-their-mouth [http://perma.cc/8CP2-573F].

[135] *Global Health Observatory (GHO) Data: International Health Regulations (2005) Monitoring Framework*, WHO (2016), http://www.who.int/gho/ihr/en/ [http://perma.cc/A8N6-SZVN].

[136] *Id.*

[137] *Global Health Observatory Data Repository: Legislation Data by Country*, WHO (2016), http://apps.who.int/gho/data/view.main.IHRCTRY01v?lang=en [http://perma.cc/E6R7-GRTQ].

FIGURE 1. COUNTRY IMPLEMENTATION OF IHR-RELATED CAPACITIES BY 2013[138]



Legislation: Legislation, regulations, administrative requirements, or other government instruments, sufficient for implementation of the IHR. **Coordination:** Coordination mechanism between relevant sectors implementing the IHR. **Surveillance**: Early warning function for detection of public health events in indicator-based (routine) surveillance (IBS). **Response**: Public health emergency response mechanisms. **Preparedness:** Multi-hazard national public health emergency preparedness and response plan. **Risk Communication:** Mechanisms for effective risk communication during a public health emergency. **Human Resources:** Human resources available to implement IHR core capacity requirements. **Laboratory:** Laboratory services to test for priority health threats. **Points of Entry**: General obligations required at points of entry. **Zoonotic Events:** Mechanisms for detecting and responding to zoonoses and potential zoonoses. **Food Safety**: Detecting and responding to foodborne disease and food contamination. **Chemical Events:** Detection, alert, and response to chemical emergencies. **Radiological Events:** Detecting and responding to radiological and nuclear emergencies.

Then Ebola broke out. Three months passed from the time when patient zero developed symptoms on December 26, 2013, to when the diagnosis of Ebola was confirmed, and some of this delay has been attributed to limited core capacities in Guinea.[139] In Sierra Leone, Ebola spread undetected until late May 2014.[140]

[138] For the Table above, the number of countries are represented by the Y-axis, and the various capacities are represented on the X-axis. *See Global Health Observatory Data Repository: All Capacities Data by Country*, WHO, http://apps.who.int/gho/data/node.main.IHR00ALLN?lang=en [http://perma.cc/28RQ-5K2G]; *Summary of States Parties 2013 Report on IHR Core Capacity Implementation: Regional Profiles*, WHO (2005), http://www.who.int/ihr/publications/WHO_HSE_GCR_2014.10/en/ [http://perma.cc/6JAE-PDSB].

[139] *See, e.g.*, Laurie Garrett, *Ebola's Lessons: How the WHO Mishandled the Crisis*, 94 FOREIGN AFF. 80, 89-90 (2015) (noting that Guinean authorities made no attempts to notify their Sierra Leonean

Broadly strengthening public health capacities and health systems was persistently recommended in the wake of Ebola.[141] The proposals for these changes were similar to those following H1N1, pertaining primarily to the assessment of core capacities and external support for their strengthening. Many have argued for supplementing country reporting with independent and more transparent assessments.[142] Many have also stressed the need to develop mechanisms that can facilitate richer countries' support of capacity building in poorer countries.[143] This might be done through a donor conference,[144] through devising a prioritized and costed plan involving multiple stakeholders,[145] or through the establishment of an international fund.[146]

Cutting across these suggestions, an accountability commission for disease outbreak and response has been proposed to monitor both investments and results in core capacity building.[147] Another proposal was to make external support for health system strengthening conditional upon a country's participation in an external assessment process.[148] Further, like after the H1N1 pandemic, some suggested that the IHR should be revised to include more concrete steps for building health systems capacities (see Table 1).[149]

B. NOTIFICATION AND INFORMATION SHARING

The IHR require state parties to notify the WHO of all events that may constitute a PHEIC within its territory.[150] State parties are also required to respond to WHO

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counterparts when the disease first emerged); Gostin & Friedman, *supra* note 10, at 1903-1906; Moon et al., *supra* note 10, at 3.

[140] *See* Gostin & Friedman, *supra* note 10, at 1902; Kevin Sack et al., *How Ebola Roared Back*, N.Y. TIMES (Dec. 29, 2014), http://www.nytimes.com/2014/12/30/health/how-ebola-roared-back.html.

[141] *See, e.g.*, COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 3; WHO, IMPLEMENTATION OF THE IHR, *supra* note 118, at 6; WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 2, 10-11; SIMON WRIGHT ET AL., A WAKE UP CALL: LESSONS FROM EBOLA FOR THE WORLD'S HEALTH SYSTEMS 1–50 (2015); PROTECTING HUMANITY FROM FUTURE HEALTH CRISES, *supra* note 118, at 32; Gostin, DeBartolo & Friedman, *supra* note 10, at 3; Gostin & Friedman, *supra* note 10, at 1906; Moon et al., *supra* note 10, at 1; Mark J. Siedner et al., *Strengthening the Detection of and Early Response to Public Health Emergencies: Lessons from the West African Ebola Epidemic*, 12 PUB. LIBR. SCI. MED 1, 6 (2015); The Lancet, *supra* note 10, at 1321.

[142] *See* source cited *supra* note 141.

[143] *See e.g.*, COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 4; PROTECTING HUMANITY FROM FUTURE HEALTH CRISES, *supra* note 118, at 63-64; WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 11, 20; WRIGHT ET AL., *supra* note 141; Bill Gates, *The Next Epidemic — Lessons from Ebola*, 372 NEW ENG. J. MED. 1381, 1381-84 (2015); Lawrence O. Gostin, *Ebola: Towards an International Health Systems Fund*, 384 LANCET e49, e50 (2014); Gostin, DeBartolo, & Friedman, *supra* note 10, at 3; Gostin & Friedman, *supra* note 10, at 1907; Rebecca Katz & Scott F. Dowell, *Revising the International Health Regulations: Call for a 2017 Review Conference*, 3 LANCET GLOB. HEALTH e352, e353 (2015); Moon et al., *supra* note 10, at 1; The Lancet, *supra* note 10, at 1321.

[144] *See, e.g.*, COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 4; Gostin & Friedman, *supra* note 10, at 1906; Katz & Dowell, *supra* note 143, at 21; Moon et al., *supra* note 10, at 5; The Lancet, *supra* note 10, at 1321.

[145] *See, e.g.*, WHO, IMPLEMENTATION OF THE IHR, *supra* note 119, at 6; WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 6; Gostin, DeBartolo, & Friedman, *supra* note 10, at 3; Moon et al., *supra* note 10, at 5-6.

[146] *See, e.g.*, Gostin, *Ebola*, *supra* note 143, at e50; Gostin, DeBartolo, & Friedman, *supra* note 10, at 3.

[147] Moon et al., *supra* note 10, at 1.

[148] COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 3.

[149] Gostin & Friedman, *supra* note 10, at 1906.

[150] IHR, *supra* note 8, at art. 6.

requests to verify the existence of an event that may constitute a PHEIC,[151] and the IHR encourages sharing of information more generally.[152]

The Mexican government is widely believed to have performed well during the H1N1 pandemic with regard to notification and information sharing—that is, once H1N1 was identified and its diagnosis was confirmed.[153] While it took more time than needed before the Mexican authorities notified PAHO and the WHO, this has mostly been attributed to limitations in surveillance capacities rather than lack of will or intention.[154] When the Mexican National IHR Focal Point received a verification request from PAHO on April 11, 2009, he confirmed the existence of acute respiratory infections within twenty-four hours, assessed the outbreak to be a potential PHEIC, and notified PAHO accordingly.[155] Mexico also shared information with Canada and the United States, in line with their tri-national public health collaboration agreements and as encouraged under the IHR.[156]

While Mexico may be lauded for their reporting and notification, this was not the case for all other countries during the H1N1 pandemic. Following the pandemic, several commentators stressed the importance of greater information sharing among countries,[157] as well as better communication between national authorities and the WHO.[158] Commentators agreed that national authorities often had strong incentives to not report and notify about emerging threats.[159] It was suggested that notifying countries could get privileged access to benefits and compensation.[160] A more indirect strategy proposed was to strengthen compliance among non-affected countries.[161] As further discussed below, the link between obligations to notify and obligations to refrain from undue restrictions on travel and trade is at the heart of the IHR, and better compliance among non-affected countries would reduce disincentives for affected countries to notify.[162] Among the other proposals following H1N1 were to increase knowledge about the IHR among decision makers[163] and to clarify the decision instrument for helping determine whether an event constitutes a PHEIC.[164]

In the case of Ebola, there were significant delays in notification and information sharing from the outset. It took the Guinean authorities more than two months from

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[151] *Id.* at art. 12.

[152] *Id.* at art. 44.

[153] DAVIES, KAMRADT-SCOTT & RUSHTON, *supra* note 15, at 102; LAWRENCE O. GOSTIN, GLOBAL HEALTH LAW 202 (2014); Katz & Fischer, *supra* note 30, at 5.

[154] Wilson, Brownstein, & Fidler, *supra* note 9, at 506.

[155] *See* Ying Zhang et al., *Did Advances in Global Surveillance and Notification Systems Make a Difference in the 2009 H1N1 Pandemic?— A Retrospective Analysis*, 8 PUB. LIBR. SCI. ONE 1, 5 (2013).

[156] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 29.

[157] *See id.* at 54; *see also* Peter Piot et al., *Ensuring Health for All: Towards a New Paradigm for Health for All* (2010), http://www3.weforum.org/docs/WEF_HE_EnsuringHealthForAll_2010.pdf [http://perma.cc/8MK5-QWZE].

[158] *See* Ann C. Keller et al., *Improving Pandemic Response: A Sensemaking Perspective on the Spring 2009 H1N1 Pandemic*, 3 RISK HAZARDS CRISIS PUB. POL'Y 1, 15-16 (2012).

[159] *See, e.g.*, Mackey & Liang, *supra* note 9, at 125; Jennifer B. Nuzzo & Gigi Kwik Gronvall, *Global Health Security: Closing the Gaps in Responding to Infectious Disease Emergencies*, 4 GLOBAL HEALTH GOV. 1, 10 (2011); Wilson, Brownstein, & Fidler, *supra* note 9, at 507.

[160] *See* Nuzzo & Gronvall, *supra* note 159, at 11.

[161] *See id.* at 10; Mackey & Liang, *supra* note 9, at 128-37.

[162] *See* Mackey & Liang, *supra* note 9, at 124; Nuzzo & Gronvall, *supra* note 159, at 10; von Tigerstrom, *supra* note 22, at 42; Wilson, Brownstein, & Fidler, *supra* note 9, at 507.

[163] *See* Maxwell Charles Hardiman, *World Health Organization Perspective on Implementation of International Health Regulations*, 18 EMERGING INFECTIOUS DISEASES 1041, 1042 (2012).

[164] *See* Aranka Anema et al., *Descriptive Review and Evaluation of the Functioning of the International Health Regulations (IHR) Annex 2*, 8 GLOBALIZATION & HEALTH 1, 7 (2012); Nuzzo & Gronvall, *supra* note 159, at 5-6.

when the first person developed Ebola symptoms to when they notified the WHO on March 13, 2014.[165] It seems to be a widely held view that the situation in Guinea was known to represent an event that "may constitute" a PHEIC long before that date. It has also been noted that while the Guinean authorities were aware of a large number of deaths from an unknown disease near and across the border with Sierra Leone, they failed to convey this information to the authorities there.[166]

Beyond these shortcomings in the early phase, the Guinean authorities—alongside their Sierra Leonean and Liberian counterparts—have been repeatedly accused of trying to downplay the true severity of the outbreak.[167] The Guinean government allegedly focused on positive communication to avoid scaring away airlines and mining companies.[168] Similarly, MSF has reported that the Guinean and Sierra Leonean governments actively worked against the humanitarian organization in sounding the alarm.[169] In Sierra Leone, for example, the government instructed only laboratory-confirmed deaths to be reported, and the Ministry of Health refused to share data, such as lists of contacts, with MSF.[170]

Many reasons have been suggested for the unwillingness to share information. Most pertain to the expected decrease in travel and trade and the accompanying economic and political repercussions.[171] The WHO apparently feared that declaring a PHEIC could hurt West Africa's economy and unnecessarily interfere with the Muslim pilgrimage to Mecca.[172] History had indeed provided reasons to worry. The most affected countries and areas in both the SARS and the H1N1 outbreaks experienced significant economic burdens because of unnecessary travel and trade restrictions unilaterally imposed by other countries.[173]

Following the Ebola outbreak, many commentators have therefore stressed the need to reduce disincentives for notifying public health risks to the WHO and for information sharing more generally.[174] Essentially four kinds of strategies have been

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[165] *See, e.g.*, WHO, REPORT OF THE SECRETARIAT: EBOLA VIRUS DISEASE EPIDEMIC IN WEST AFRICA 2 (Nov. 5, 2014), http://www.afro.who.int/index.php?option=com_docman&task=doc_download&gid=9385&Itemid=2593; Daniel Flynn & Stephanie Nebehay, *Aid Workers Ask Where Was WHO in Ebola Outbreak?*, REUTERS (Oct. 15, 2014), http://uk.reuters.com/article/2014/10/05/us-health-ebola-who-idUKKCN0HU03Q20141005 [http://perma.cc/5GFR-UEH9].

[166] *See generally* Sack et al., *supra* note 140; Garrett, *supra* note 139.

[167] *See* MÉDECINS SANS FRONTIÈRES, PUSHED TO THE LIMIT, *supra* note 101, at 8; *The Politics Behind the Ebola Crisis*, INT'L CRISIS GRP. (Oct. 28, 2015), http://www.crisisgroup.org/en/regions/africa/west-africa/232-the-politics-behind-the-ebola-crisis.aspx.

[168] *See* Sack et al., *supra* note 140.

[169] MÉDECINS SANS FRONTIÈRES, PUSHED TO THE LIMIT, *supra* note 101, at 8.

[170] *Id.* at 7-8.

[171] *See* WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 13; Maria Cheng & Raphael Satter, *Emails Show the World Health Organization Intentionally Delayed Calling Ebola A Public Health Emergency,* BUSINESS INSIDER (Mar. 20, 2015, 12:21 AM), http://www.businessinsider.com/report-the-world-health-organization-resisted-declaring-ebola-an-international-emergency-for-economic-reasons-2015-3 [http://perma.cc/W3WS-YWEA].

[172] *See* Cheng & Satter, *supra* note 171.

[173] *See* Katz & Fischer, *supra* note 30, at 5 (describing travel and trade restrictions in Mexico in response to H1N1, as well as the economic cost of the epidemic response); Marcus Richard Keogh-Brown & Richard David Smith, *The Economic Impact of SARS: How Does the Reality Match the Predictions?*, 88 HEALTH POL'Y 110, 117-19 (2008) (quantifying the economic decline in countries affected by the SARS outbreak to certain sectors of the economy and discussing the implications); Dunia Rassy & Richard D. Smith, *The Economic Impact of H1N1 on Mexico's Tourist and Pork Sectors*, 22 HEALTH ECON. 824, 831 (2013) ("The repercussions of H1N1 influenza on the tourism and pork industry coincide with the economic effects experienced by Southeast Asian nations following SARS . . . .").

[174] *See* WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 12 ("[I]ncentives are needed to encourage notification of health threats."); PROTECTING HUMANITY FROM FUTURE HEALTH

proposed. One suggests that the WHO establish a daily high-priority watch list of outbreaks with potential to become a PHEIC.[175] This may encourage countries to report events on a regular basis and make reporting less extraordinary. Another strategy is to make budgetary support available for governments making alerts, or to promise compensation for economic losses resulting from notification, possibly through a new insurance scheme.[176] A third strategy is to publish lists of countries that delay reporting, while commending countries that rapidly share information.[177] Finally, a fourth strategy is to strengthen compliance among non-affected countries.[178] Beyond these incentive-based strategies, it has been recommended that the WHO take a more active role in coordinating information sharing among countries.[179] Promoting general knowledge about the IHR and revising the IHR decision instrument to reduce state parties' discretion in reporting events has also been recommended.[180]

C. WHO'S ASSESSMENT, DECLARATIONS, AND RECOMMENDATIONS

According to the IHR, the WHO should assess and verify notifications and other relevant information, including from non-governmental sources.[181] On this basis, the WHO Director-General can declare a PHEIC and issue temporary recommendations for how state parties should address the emergency.[182]

The WHO is often considered to have performed relatively well in the early stages of the 2009 H1N1 pandemic.[183] The WHO's declaration of a PHEIC was certainly quick[184]—so quick, in fact, that other commentators complain about the speed of this declaration.[185] Following the H1N1 pandemic, one issue of discussion was the

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CRISES, *supra* note 118, at 67; Moon et al., *supra* note 10, at 1 (recommending different ways in which governments and the WHO should better respond to disease outbreaks).

[175] COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 56.

[176] *See, e.g.*, COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 6, 56-60; PROTECTING HUMANITY FROM FUTURE HEALTH CRISES, *supra* note 118, at 65; WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 11-12; Moon et al., *supra* note 10, at 6.

[177] Moon et al., *supra* note 10, at 6; *see also* COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 6, 57 (recommending establishing "protocols for avoiding suppression or delays in data and alerts").

[178] *See* COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 57 (recommending that a new mechanism should hold governments accountable for performance during a global health risk); WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 11-12 ("[M]ore than 40 countries implemented additional measures that significantly interfered with international traffic," which increased the burden on affected countries); Moon et al., *supra* note 10, at 6-7 (suggesting that "alternate governance mechanisms are needed to prevent isolating countries when outbreaks strike").

[179] COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 53-54.

[180] *See* Gostin, DeBartolo & Friedman, *supra* note 10, at 3 ("The World Health Assembly could amend the decision instrument to reduce States Parties' reporting discretion, avoiding delayed notification or verification."); Kamradt-Scott, *supra* note 133, at 12-13 (concluding that intergovernmental organizations are "ultimately the creations of governments" that are subject to poor political leadership with respect to international health regulation).

[181] IHR, *supra* note 8, at art. 11.

[182] *Id.* at arts. 12, 15.

[183] *See* WHO, RESPONSE TO PANDEMICS, *supra* note 9, at xix ("WHO performed well in many ways during the pandemic, confronted systemic difficulties and demonstrated some shortcomings."); Katz & Fischer, *supra* note 30, at 8-9 ("The IHR (2005) provided a functional framework for communications and the dissemination of informed guidance to coordinate responses throughout the 2009 pandemic.").

[184] *Id.*; *see also* DAVIES, KAMRADT-SCOTT & RUSHTON, *supra* note 15, at 96.

[185] *See* WHO, RESPONSE TO PANDEMICS *supra* note 9, at 116; Imogen Foulkes, *World Health Organization to Review Swine Flu Response*, BBC, Jan. 12, 2010, http://news.bbc.co.uk/2/hi/health/8455035.stm [http://perma.cc/YS6J-UJUK]; Eben Harrell, *Was the Threat of H1N1 Flu Exaggerated?*, TIME, Jan. 26, 2010, http://content.time.com/time/health/article/0,8599,1956608-2,00.html.

relationship between the IHR and WHO's pandemic alert system.[186] Another much debated topic during and after the H1N1 pandemic was the anonymity of the members of the Emergency Committee that advised the declaration of a PHEIC.[187] This fueled distrust and suspicion about links between committee members and the pharmaceutical industry, which stood to gain from declaration of a PHEIC and the resulting increase in drug sales it would cause.[188] The H1N1 pandemic was therefore followed by a call for greater transparency about the Emergency Committee, and the WHO has disclosed members' names for all subsequent Emergency and Review Committees.[189] Following H1N1, it was also recommended that the WHO better align the IHR with other disaster management and emergency response frameworks,[190] and that it enhance cooperation with actors in sectors other than health.[191] Finally, it was recommended that member states ensure more stable funding for the WHO[192] and set up a contingency fund.[193]

However, the Ebola outbreak proved more challenging for the WHO and its responsibilities as defined by the IHR. It took nearly three months from the time that the first patient developed symptoms until the diagnosis of Ebola was confirmed.[194] It has been suggested that the length of this period highlights the WHO's inadequate arrangements for validating and responding to information on outbreaks in resource-poor settings.[195] It took an additional four months before the Director-General declared the Ebola outbreak to be a PHEIC on August 8, 2014.[196] The WHO has been heavily

[186] Wilson, Brownstein & Fidler, *supra* note 9, at 507.

[187] *See* Paul Flynn, Rapporteur, COUNCIL OF EUROPE PARLIAMENTARY ASSEMBLY, *The Handling of the H1N1 Pandemic: More Transparency Needed* (Provisional Version), at 17 (2010) ("For the rapporteur, the main concerns regarding the current H1N1 influenza include . . . the transparency of relevant decision-making processes, including the possibility of undue influence by the pharmaceutical industry . . . ."); WHO, RESPONSE TO PANDEMICS, *supra* note 9, at xx, 116 ("Although confidentiality represented an understandable effort to protect the members from external pressures, this paradoxically fed suspicions that the Organization had something to hide."); Deborah Cohen & Philip Carter, *WHO and The Pandemic Flu "Conspiracies,"* 340 BRIT. MED. J. 1274, 1274 (2010) (questioning "why the composition of the emergency committee . . . remain[s] a secret known only to those within WHO").

[188] *See supra* text accompanying note 193.

[189] *See* WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 127-45 (listing members and their disclosures); *List of Members of, and Advisers to, the International Health Regulations (2005) Emergency Committee Regarding Ebola*, WHO, http://www.who.int/ihr/procedures/emerg_comm_members_20140806/en/ [http://perma.cc/LF7W-6UZR]; *Biographies of the Members of, and Advisers to, the IHR Emergency Committee Regarding the Ebola Outbreak in West Africa*, WHO, http://www.who.int/ihr/procedures/biographies_ebola_review_committee/en/ [http://perma.cc/F37L-37HU]; *see also* Gostin, DeBartolo & Friedman, *supra* note 10, at 3 (indicating that WHO's decision to release member names and conflicts improved public trust, but WHO could also "publish full meeting minutes, provide web access to documents, and offer live updates through social media platforms").

[190] *See* BEYOND PANDEMICS, *supra* note 123, at 14, 41 (recommending harmonizing the measures in the report with the IHR (2005) and other WHO guidance relating to pandemic response in order to strengthen overall preparedness).

[191] *See id.* at 18, 33, 103 (showing how the interconnectedness of pandemic threat requires a coordinated response).

[192] Flynn, *supra* note 187, at 2; *see also* Adam Kamradt-Scott, *Strengthening Multisectoral Preparedness in Asia: Report on High-Level ASEAN Consultation Meeting*, 4 HEALTH DIPL. MONITOR 14, 15 (2013).

[193] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 120.

[194] *See generally One Year into the Ebola Epidemic*, *supra* note 93.

[195] *See* Moon et al., *supra* note 10, at 3 ("This phase underscored the problem of inadequate investments in health infrastructure, despite national governments' formal commitments to do so under the International Health Regulations (2005) . . . ."); Sack et al., *supra* note 140 (citing a WHO official saying "modest further intervention efforts at that point could have achieved control").

[196] Moon et al., supra note 10, at 3.

criticized for waiting this long.[197] The WHO Ebola Interim Assessment Panel—a committee of independent experts tasked with reviewing the WHO's response to the Ebola outbreak—has judged the delays in declaring a PHEIC to be "significant and unjustifiable."[198] Dr. Chan herself acknowledged that at least some delays were unnecessary.[199] Suggested reasons for delays include the WHO's organizational culture, problems with information flow, regional decision-making structures within the WHO, and difficulties in negotiating with affected countries.[200] Irrespective of the reasons, numerous early warnings from MSF and others did not reach senior WHO leaders, or senior WHO leaders did not recognize their significance.[201] Around the time of the declaration of a PHEIC, the international response gained traction.[202] Yet, the WHO has been criticized for a slow and inadequate response in this phase of the outbreak as well.[203]

Against this background, many have now called for WHO reforms.[204] For example, it has been recommended that the WHO improve its surveillance based on non-governmental sources,[205] further increase transparency of the work of its Emergency Committees,[206] create a standing Emergency Committee instead of temporary ad-hoc committees specific to each outbreak,[207] introduce an intermediate event category between a PHEIC and no PHEIC,[208] create a clearer mechanism for coordination and escalation in health crises,[209] enhance the means of cooperation with non-state actors,[210] and better integrate the IHR framework with other emergency response and humanitarian frameworks.[211] It has also been recommended that the

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[197] *See generally id.*; MÉDECINS SANS FRONTIÈRES, PUSHED TO THE LIMIT, *supra* note 103; WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10.

[198] WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 5.

[199] *See* Sheri Fink, *W.H.O. Leader Describes the Agency's Ebola Operations*, N.Y. TIMES, Sept. 4, 2014, http://www.nytimes.com/2014/09/04/world/africa/who-leader-describes-the-agencys-ebola-operations.html.

[200] WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 12-13.

[201] *Id.* at 12.

[202] *See generally* UNITED NATIONS, GLOBAL EBOLA RESPONSE, *supra* note 109 (documenting the progress of the disease response as of May 2015); WHO, *One Year into the Ebola Epidemic*, *supra* note 93 (summarizing disease response efforts after one year in a series of papers); Moon et al., supra note 10, at 4 (describing the third and fourth phases of the epidemic response).

[203] *See* Moon et al., *supra* note 10, at 3-4.

[204] *See generally* COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5; WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10; Garrett, *supra* note 139; Gostin & Friedman, *supra* note 136; Gostin, DeBartolo, & Friedman, *supra* note 10; Moon et al., *supra* note 10.

[205] *See* Gostin, DeBartolo & Friedman, *supra* note 10, at 3.

[206] *See id.* at 3 (noting that "[t]ransparent Emergency Committee deliberations showing independence would build public trust"); Moon et al., *supra* note 10, at 9 (recommending that the Emergency Committee issues an annual report describing its activities and be free from financial conflicts).

[207] Moon et al., *supra* note 10, at 9 (recommending a standing committee with a clear mandate to declare public health emergencies).

[208] WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 13; WHO, IMPLEMENTATION OF THE IHR *supra* note 119, at 6; Gostin, DeBartolo & Friedman, *supra* note 10, at 4;

[209] COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 5; WHO, ADVISORY GROUP ON REFORM OF WHO'S WORK IN OUTBREAKS AND EMERGENCIES: FIRST REPORT, 4, 10 (2015), http://www.who.int/about/who_reform/emergency-capacities/advisory-group/first-report.pdf?ua=1 [http://perma.cc/6QV9-EVUJ] [hereinafter WHO, ADVISORY GROUP ON REFORM, FIRST REPORT]; WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 7, 25; Moon et al., *supra* note 10, at 7-8;

[210] COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 55.

[211] WHO, ADVISORY GROUP ON REFORM OF WHO'S WORK IN OUTBREAKS AND EMERGENCIES: SECOND REPORT 10, 14 (2016), http://www.who.int/about/who_reform/emergency-capacities/advisory-group/second-report.pdf?ua=1 [http://perma.cc/FQ62-4MPX] [hereinafter WHO, ADVISORY GROUP ON REFORM, SECOND REPORT]; WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at

WHO establish a Center for Emergency Preparedness and Response,[212] as well as a contingency fund to support emergency response.[213] Many more general reform proposals have also been put forward,[214] including proposals for increased and sustained funding of WHO's core functions[215] and for member states to relinquish more of their control of WHO.[216] Many of these recommendations are reminiscent of those following the H1N1 pandemic.

While most or all of the reform proposals appear reasonable, it is worth mentioning that some of the criticism of the WHO lack nuance. The WHO took action also before it declared a PHEIC, for example, by sending 113 technical experts to West Africa by April 2014.[217] The outbreak was novel, and many experts outside the WHO also misjudged the situation.[218] Evidence available in mid-May seemed to suggest that the epidemic was already coming under control and petering out.[219] The affected countries did not cooperate optimally,[220] and the WHO was dealing with several other challenges at the time the Ebola outbreak escalated, including humanitarian crises in the Central African Republic, South Sudan, and Syria, and the spread of the MERS and H7N9 viruses.[221] Moreover, even the legitimate blame attributed to the WHO overall cannot fully be directed to its secretariat: it is the member states that refused to give up more control and refused to increase the WHO's assessed budgetary contributions, while approving budget cuts for emergency response.[222] In fact, only three years after the H1N1 pandemic, the budget for "Outbreak and Emergency Response" was cut by thirty-five percent.[223]

23; WHO, IMPLEMENTATION OF THE IHR, *supra* note 119, at 7; PROTECTING HUMANITY FROM FUTURE HEALTH CRISES, *supra* note 118, at 53-54; Gostin, DeBartolo & Friedman, *supra* note 10, at 4.

[212] *See, e.g.*, COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 66; WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 16; PROTECTING HUMANITY FROM FUTURE HEALTH CRISES, *supra* note 118, at 50-51; Moon et al., *supra* note 10, at 1.

[213] *See, e.g.*, COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 53; WHO, ADVISORY GROUP ON REFORM, FIRST REPORT, *supra* note 209, at 3, 12; WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 6; PROTECTING HUMANITY FROM FUTURE HEALTH CRISES, *supra* note 118, at 65; Gostin, *supra* note 139, at e50; Gostin, DeBartolo & Friedman, *supra* note 10, at 4; *Report by the Director-General to the Special Session of the Executive Board on Ebola,* WHO (Jan. 25, 2015), http://www.who.int/dg/speeches/2015/executive-board-ebola/en/ [http://perma.cc/D4KQ-QCR2].

[214] *See generally* WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10 at 16; Gostin & Friedman, *supra* note 140; Gostin, DeBartolo & Friedman, *supra* note 10; Moon et al., *supra* note 10.

[215] *See* sources cited *supra* note 214; *see also* COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 5, 52; Kamradt-Scott, *supra* note 133, at 410.

[216] *See* PROTECTING HUMANITY FROM FUTURE HEALTH CRISES, *supra* note 118, at 64; Kamradt-Scott, *supra* note 133, at 411.

[217] *See* Kamradt-Scott, *supra* note 133, at 403-04; WHO, *One Year into the Ebola Epidemic*, *supra* note 90.

[218] *See* Garrett, *supra* note 139, at 97.

[219] *See* Kamradt-Scott, *supra* note 133, at 405.

[220] *See* MÉDECINS SANS FRONTIÈRES, PUSHED TO THE LIMIT, *supra* note 103, at 1, 7; Garrett, *supra* note 139, at 90; Kamradt-Scott, *supra* note 133, at 404; Moon et al., *supra* note 10, at 3.

[221] *See* Garrett, *supra* note 139, at 94; Kamradt-Scott, *supra* note 133, at 404, 407.

[222] Kamradt-Scott, *supra* note 133, at 406-07.

[223] WHO, PROGRAMME BUDGET PERFORMANCE ASSESSMENT REPORT 2010-2011, http://www.who.int/about/resources_planning/performance_assessment-report_2010_2011.pdf?ua=1 [http://perma.cc/LZT5-A494] (allocating 350 million for "Outbreak and Crisis Response"); WHO, *Programme Budget 2014-2015,* http://www.who.int/about/resources_planning/PB14-15_en.pdf?ua=1 [http://perma.cc/S6PC-K6EE] (proposing 228 million for "Outbreak and Crisis Response").

D. PERMISSIBLE HEALTH MEASURES

According to the IHR, state parties are not to implement measures that unnecessarily restrict travel, trade, or human rights.[224] Two days after declaring the H1N1 outbreak a PHEIC on April 25, 2009,[225] Dr. Chan stressed that all measures should conform to the purpose and scope of the IHR.[226] More specifically, Dr. Chan recommended "not to close borders and not to restrict international travel,"[227] a temporary recommendation that remained unchanged until the pandemic was declared over in August 2010.[228]

Despite this plea, many state parties did impose travel and trade restrictions that seemed to contravene the IHR.[229] According to one estimate, fifteen percent of state parties did so.[230] Some countries, including Argentina, China, Cuba, and Peru, suspended flights to and from Mexico.[231] Other countries went further and banned any person arriving directly from Mexico from entering their territory.[232] Some countries quarantined travelers coming from Mexico, Canada, and the United States, and some quarantined Mexican, Canadian, and American nationals irrespective of their potential exposure to the H1N1 influenza virus.[233] Many countries also imposed trade restrictions that contravened WHO recommendations.[234] In particular, several countries banned meat from Mexico, Canada, and the United States.[235] This happened despite the WHO's general recommendation against trade restrictions and repeated confirmations that the consumption of pork was safe.[236]

For state parties that implemented additional measures during H1N1 that interfered with international traffic, the IHR required those States to proactively inform the WHO and to provide a rationale for their measures.[237] None of the parties implementing these measures did so, and not all parties bothered to provide a rationale upon the WHO's request.[238]

A prevailing recommendation after the H1N1 pandemic, therefore, was to strengthen compliance with the IHR's provisions on travel and trade restrictions. The

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[224] IHR, *supra* note 8, at art. 43.

[225] *Swine Influenza: Statement by WHO Director-General, Dr. Margaret Chan*, WHO (Apr. 25, 2009), http://www.who.int/mediacentre/news/statements/2009/h1n1_20090425/en/ [http://perma.cc/P273-PMSA].

[226] *Swine Influenza Statement by WHO Director-General, Dr. Margaret Chan* (Apr. 27, 2009), http://www.who.int/mediacentre/news/statements/2009/h1n1_20090427/en/ [http://perma.cc/QH2W-9DCL].

[227] *Id.*

[228] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 62.

[229] Katz & Fischer, *supra* note 30, at 5.

[230] DAVIES, KAMRADT-SCOTT & RUSHTON, *supra* note 15, at 103.

[231] Andrew Browne, *China Forces Dozens of Mexican Travelers Into Quarantine*, WALL ST. J. (May 4, 2009), http://www.wsj.com/articles/SB124137876507580987 [http://perma.cc/9ZLY-2QRN].

[232] *See* WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 62; *The World Response to Flu Crisis*, BBC (May 5, 2009), http://news.bbc.co.uk/2/hi/americas/8022516.stm [http://perma.cc/Z7HP-W6BJ].

[233] *See The World Response to Flu Crisis*, *supra* note 232.

[234] Gostin, *supra* note 127, at 2377-78; James G. Hodge, Jr., *Global Legal Triage in Response to the 2009 H1N1 Outbreak*, 11 MINN. L. J. SCI. & TECH. 599, 607 (2010); Katz & Fischer, *supra* note 30, at 6.

[235] *The World Response to Flu Crisis*, *supra* note 232.

[236] *Joint FAO/WHO/OIE/WTO Statement on influenza A(H1N1) and the Safety of Pork*, WHO (May 2, 2009), http://www.who.int/mediacentre/news/statements/2009/h1n1_20090502/en/ [http://perma.cc/4J86-VH8Z]; *Swine Influenza – Update 3*, WHO (Apr. 27, 2009), http://www.who.int/csr/don/2009_04_27/en/ [http://perma.cc/FN43-GE2B]. The H1N1 virus was commonly referred to as "swine flu" given it resembled a virus found in pigs, which facilitated the spread of an unfortunate myth that linked the virus to pork consumption—thereby resulting in unnecessary culling of pigs and unjustifiable bans on pork importation. *See Origins of 2009 H1N1 Flu (Swine Flu): Questions and Answers*, CDC (Nov. 25, 2009), http://www.cdc.gov/h1n1flu/information_h1n1_virus_qa.htm [http://perma.cc/YSN9-5WEB].

[237] IHR, *supra* note 8, at art. 43.

[238] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 62.

post-H1N1 Review Committee on the Functioning of the International Health Regulations stated that the most important structural shortcoming of the IHR is "the lack of enforceable sanction."[239] Many commentators suggested that the WHO could more energetically and proactively seek state parties' rationales for restrictive measures, assess the rationale provided, and, when appropriate, publicly ask parties to reconsider.[240] Additionally, it was proposed to increase transparency and to make readily available information about what measures countries were taking, whether the WHO has requested a rationale, whether the country in question has provided a rationale, and, in that case, information about the rationale.[241] Beyond this form of "naming and shaming," it was recommended that governments should exert more peer pressure[242] and that the WHO or others should strengthen the dispute resolution mechanisms associated with the IHR.[243] In the wake of the H1N1 pandemic, it was also suggested to build and strengthen enforcement mechanisms, through the World Trade Organization ("WTO")[244] or through the possibility of revoking States' privileges at the World Health Assembly.[245]

These recommendations had not been implemented to any significant degree when the WHO declared the Ebola outbreak a PHEIC on August 8, 2014.[246] With that declaration, Dr. Chan stated that there should be "no general ban on international travel or trade,"[247] and this recommendation was restated throughout 2014 and 2015.[248]

Despite WHO's guidance, more than forty countries implemented additional measures that significantly interfered with international traffic—outside the scope of the temporary recommendations—over the course of the Ebola outbreak.[249] Multiple countries closed their borders and banned travelers coming from the most affected countries. Senegal, for example, closed its border with Guinea, issued a travel ban, and prohibited flights and ships from Guinea, Liberia, and Sierra Leone.[250] Some countries, including Australia and Canada, suspended the processing of travel visas for persons from the most affected countries.[251] Few of these countries informed the WHO about the additional measures they were taking.[252]

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[239] *Id.* at 112.

[240] *Id.* at 113; Wilson, Brownstein & Fidler, *supra* note 9, at 508.

[241] WHO, RESPONSE TO PANDEMICS, *supra* note 9, at 63.

[242] Nuzzo & Gronvall, *supra* note 159, at 10.

[243] *See, e.g.*, Steven J. Hoffman, *Making the International Health Regulations Matter: Promoting Universal Compliance through Effective Dispute Resolution*, *in* ROUTLEDGE HANDBOOK ON HEALTH SECURITY 239, 248 (Simon Rushton & Jeremy Youde eds., 2015); Mackey & Liang, *supra* note 9, at 120; Wilson, Brownstein & Fidler, *supra* note 9, at 508.; Nuzzo and Gronvall, *supra* note 159, at 10.

[244] Mackey & Liang, *supra* note 9, at 126.

[245] Nuzzo & Gronvall, *supra* note 159, at 10.

[246] *Statement on the 1st meeting of the IHR Emergency Committee on the 2014 Ebola Outbreak in West Africa*, WHO (Aug. 8, 2015), http://www.who.int/mediacentre/news/statements/2014/ebola-20140808/en/ [http://perma.cc/8CX3-BVZN].

[247] *Id.*

[248] See *IHR Emergency Committee Regarding Ebola*, WHO, http://www.who.int/ihr/ihr_ec_ebola/en/ for a compilation of the WHO's published statements.

[249] WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 11.

[250] Nick Thompson & Inez Torre, *Ebola Virus: Countries with Travel Restrictions in Place*, CNN (Dec. 2, 2014), http://www.cnn.com/2014/11/04/world/ebola-virus-restrictions-map/ [http://perma.cc/C6WE-XNFK].

[251] Nicholas Keung & Jennifer Yang, *Canada Won't Issue Visas to Residents of Ebola-Affected Countries*, TORONTO STAR (Oct. 31, 2014), http://www.thestar.com/news/canada/2014/10/31/canada_wont_issue_visas_to_residents_of_ebolaaffected_countries.html; Euan McKirdy, *Australia Instigates Ebola-Prompted Ban on Travel from West Africa*, CNN (Oct. 28, 2014), http://edition.cnn.com/2014/10/28/world/asia/australia-immigration-policy-ebola/.

[252] *See* WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 12.

Unsurprisingly, one of the most pervasive recommendations after the Ebola outbreak has been to strengthen compliance with the IHR's provisions on travel and trade restrictions—just as after H1N1. Specifically, it has been suggested that the WHO be empowered to more forcefully request justification of any additional measures.[253] It has also been recommended that WHO publicly name state parties that impose unnecessary restrictions,[254] and that the dispute resolution mechanisms associated with the IHR be strengthened.[255] It has also been argued that the IHR must be linked to effective enforcement mechanisms; for example, by involving the WTO or the UN Security Council.[256] This includes a proposal to establish a Global Health Committee of the UN Security Council that would be partly tasked with addressing alleged non-compliance with the IHR provisions on travel and trade.[257] Several of these proposals seek to exploit the WTO's particularly strong dispute resolution and enforcement mechanisms[258] or the legally-binding nature of UN Security Council resolutions.[259] Finally, it has been proposed to revise the IHR to make temporary recommendations legally obligatory.[260]

Non-compliance is a general and well-known challenge for international law.[261] Compliance with IHR provisions on travel and trade restrictions is also closely linked to compliance with its other provisions. The fear of travel and trade restrictions makes countries hesitate to notify and share information about public health risks.[262] And conversely, it has been argued that the behavior of the affected West African countries and the WHO gave non-affected states reasons to ignore their part of the deal, thus resulting in illegal restrictions on travel and trade.[263]

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[253] *See id.* at 12; Gostin, DeBartolo & Friedman, *supra* note 10, at 4.

[254] *See* COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 6, 57; Gostin, DeBartolo & Friedman, *supra* note 10, at 4; Moon et al., *supra* note 10, at 6.

[255] *See* Gostin, DeBartolo & Friedman, *supra* note 10, at 2.

[256] *See id.* at 3-4; WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 12; DAVIES, KAMRADT-SCOTT & RUSHTON, *supra* note 15, at 125; PROTECTING HUMANITY FROM FUTURE HEALTH CRISES, *supra* note 118, at 68. Lane Feler, *Ebola Postmortem: Treating the World Health Organization's Regulatory Maladies*, 13 COLUM. J. TRANSNAT'L L. BULL. 13, 28 (2015); Moon et al., *supra* note 9, at 6-7.

[257] *See* Moon et al., *supra* note 10, at 2, 12-13.

[258] *See* Steven J. Hoffman & Trygve Ottersen, *Addressing Antibiotic Resistance Requires Robust International Accountability Mechanisms*, 43 J. L. MED. & ETHICS 53, 56 (2015).

[259] UNITED NATIONS, CHARTER OF THE UNITED NATIONS, ARTICLE 25 (1945).

[260] *See* Gostin, DeBartolo & Friedman, *supra* note 10, at 4.

[261] *See generally* Steven J. Hoffman & John-Arne Røttingen, *Assessing the Expected Impact of Global Health Treaties: Evidence From 90 Quantitative Evaluations*, 105 AM. J. PUB. HEALTH 26 (2015).

[262] WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 11; von Tigerstrom, *supra* note 22, at 42.

[263] David P. Fidler, *Ebola Report Misses the Mark on International Health Regulations,* CHATHAM HOUSE (July 17, 2015), http://www.chathamhouse.org/expert/comment/ebola-report-misses-mark-international-health-regulations [http://perma.cc/Z7P7-Y7HY].

TABLE 1. COMPARING RECOMMENDATIONS FOLLOWING THE H1N1 AND EBOLA OUTBREAKS

IHR OBLIGATIONS	POST-H1N1 RECOMMENDATIONS	POST-EBOLA RECOMMENDATIONS
National Health Capacities: State parties are to achieve core capacities to detect, assess, notify, and report events and to respond to public health risks and PHEICs	1. Create better mechanisms to monitor core capacities 2. Create better mechanisms facilitating rich countries' support of capacity building in LMICs 3. Specify capacities and steps in capacity building 4. Link external support to demonstrated improvements in core capacities	1. Create independent and transparent mechanisms to assess core capacities 2. Create better mechanisms facilitating rich countries' support of capacity building in LMICs 3. Specify capacities and steps in capacity building 4. Make external support conditional on participation in external assessment
Notification and Information Sharing: State parties are to notify the WHO of all events that may constitute a PHEIC within 24 hours of identification and respond to the WHO's information requests on potential PHEICs. The IHR also mandates information sharing more generally.	1. Ensure more information sharing among countries 2. Ensure more information sharing between countries and the WHO 3. Offer benefits and compensation to notifying countries 4. Strengthen non-affected state parties' compliance with restrictions on health measures affecting travel and trade 5. Promote general knowledge about the IHR 6. Clarify IHR decision instrument	1. Establish new watch list of outbreaks 2. Offer economic support to notifying countries 3. Publish lists of state parties that delay reporting 4. Strengthen non-affected state parties' compliance with restrictions on health measures affecting travel and trade 5. Promote general knowledge about the IHR 6. Reduce room for a country's discretion in IHR decision instrument
WHO's Assessment, Declarations, and Recommendations: The WHO is to verify and assess notifications, seeking collaboration with affected states. The Director-General can declare PHEICs and issue temporary recommendations following that declaration	1. Improve transparency about the members and decision-making process of the Emergency Committee 2. Align the IHR framework with other emergency and response and trade frameworks. 3. Make WHO funding more stable 4. Establish a contingency fund	1. Improve the WHO's surveillance based on non-governmental sources 2. Increase transparency about the Emergency Committee 3. Convert the Emergency Committee from a temporary to a standing committee 4. Introduce an intermediate category between PHEIC and no PHEIC 5. Align the IHR framework with other emergency

		response and humanitarian frameworks. 6. Establish a dedicated WHO center for emergency preparedness and response 7. Increase funding of the WHO's core functions 8. Establish a contingency fund
Permissible Health Measures: State parties are not to implement measures that unnecessarily restrict travel and trade or infringe upon human rights	1. The WHO more actively seeks state parties' justification for restrictive measures 2. The WHO makes public the measures adopted by countries and WHO's management of these 3. Governments exert peer pressure on non-compliant state parties 4. Strengthen dispute resolution and enforcement mechanisms, such as by linking IHR compliance to WTO or WHA privileges	1. Empower the WHO to more actively request justification of additional health measures 2. Publicly name state parties that impose unnecessary restrictions 3. Strengthen dispute resolution and enforcement mechanisms, possibly by linking IHR compliance to WTO or UN Security Council

IHR: International Health Regulations. LMIC: Low- and middle-income countries. PHEIC: Public Health Emergency of International Concern. UN: United Nations. WHA: World Health Assembly. WHO: World Health Organization. WTO: World Trade Organization.

V. THE POLITICS OF INACTION

Perhaps the most tragic part of the recent Ebola epidemic is that much of the human suffering and costs could have been avoided had proposed changes to the WHO and the IHR been implemented after the H1N1 pandemic. Opportunities for strengthening global pandemic governance were known but never acted on. Among the few exceptions are the proposals for improving transparency about the members and decision-making process of the Emergency Committee. Many other post-H1N1 recommendations could also have been implemented rather quickly, but by the time Ebola broke out, little change and few processes promising change came about. As a result, lessons learned following the Ebola epidemic have overlapped significantly with the old lessons from the H1N1 pandemic that occurred five years earlier.

This raises at least two important questions. First, why were lessons from the H1N1 pandemic largely ignored? Second, what is needed to ensure Ebola's lessons result in meaningful changes to the IHR that will help us better prevent and respond to future epidemics?

Fortunately, to answer these questions, we are able to benefit from the work of political scientists who frequently study the processes through which topics become

objects of discussion (i.e., agenda setting),[264] issues change in perceived importance (i.e., prioritization),[265] and policy options are considered and chosen for implementation (i.e., decision making).[266] In this case, IHR reform was clearly on the agenda after the H1N1 pandemic; the problem is that it was never perceived to be sufficiently important by key decision makers, such that no major reforms were considered or chosen for implementation. This means we can draw on political prioritization frameworks to help answer the two questions.

One such framework was developed by Jeremy Shiffman and Stephanie Smith specifically to analyze the determinants of political priority for global health initiatives and understand an issue's place on the global health agenda.[267] This framework focuses on four categories of determinants of political prioritization: (1) actor power (i.e., the strength of the individuals and organizations concerned with the issue); (2) ideas (i.e., the ways in which those involved with the issue understand and portray it); (3) political contexts (i.e., the environments in which actors operate); and (4) issue characteristics (i.e., the features of the problem).[268] Examining each determinant reveals much about why the IHR were not reformed after the H1N1 pandemic and what strategies can be used to overcome inaction in the future, as most barriers are still present (see Table 2). While the barriers apply at the global level, corresponding barriers are often also at work within countries. Evaluating the wide range of barriers to action concurrently and within a systematic framework makes it easier to devise strategies that are sensitive to the many determinants of political priority and strategies that target more than one determinant at a time.

[264] *See generally* JOHN W. KINGDON, AGENDAS, ALTERNATIVES, AND PUBLIC POLICIES (1995).

[265] *See* Jeremy Shiffman & Stephanie Smith, *Generation of Political Priority for Global Health Initiatives: A Framework and Case Study of Maternal Mortality*, 370 LANCET 1370, 1371 (2007).

[266] *See* John N. Lavis et al., *Guidance for Evidence-Informed Policies about Health Systems: Linking Guidance Development to Policy Development*, 9 PUB. LIBR. SCI. MED. 1, 4-5 (2012).

[267] Shiffman & Smith, *supra* note 265, at 1370.

[268] *Id.* at 1371.

TABLE 2: ANALYSIS OF INACTION ON IHR REFORM FOLLOWING THE H1N1 PANDEMIC

Categories of determinants	Factors shaping political priority	Reasons for failure to reform the IHR
(1) **Actor power** The strength of the individuals and organizations concerned with the issue	a. **Policy community cohesion**: degree of coalescence among a network of individuals and organizations central to issue	• **No united policy community** strongly advocating for pandemic preparedness • **Differing priorities and mandates** of key actors • **Limited involvement of non-health actors** who see IHR reform as a health issue
	b. **Leadership**: individuals who are strong champions of the cause and capable of uniting policy community	• **WHO Director-General and heads of States did not champion** IHR reforms despite their necessary role in administering and negotiating any changes • **Other actors unsuccessful** in taking on leadership and articulating a compelling vision for global adoption
	c. **Guiding institutions**: effectiveness of organizations or coordinating mechanisms	• **WHO was ill-equipped** due to budget cuts and the global financial crisis • **No other international institution** truly focused on IHR or issues under its purview
	d. **Civil society mobilization**: extent to which grassroots organizations have mobilized to press political authorities to address the issue	• **Few CSOs devoted** to advocating for pandemic preparedness, and few demanded IHR reform • **CSOs focused on present dangers** instead of future unknown risks, around which it is difficult to mobilize support • **Difficult for CSOs to penetrate global governance** to demand States make necessary changes
(2) **Ideas** The ways in which those involved with the issue understand and portray it	e. **Internal frame**: degree to which the policy community agrees on definitions, causes, and solutions	• **Lack of consensus among experts** on which specific reform proposals were best, how they should be prioritized, and how they should be financed • **Lack of consensus among governments** over the same issues
	f. **External frame**: degree to which public portrayals resonate with external audiences	• **Risk unknown, remote, and distant**, which makes it harder to attract public attention or concern • **"Health is global" and "interdependence" arguments have not fully resonated** with the public and policy makers

(3) **Political contexts** The environments in which actors operate	**g. Policy windows**: political moments when global conditions align favorably for advocates to influence decision makers	• **Short policy windows** after epidemics • **Reform processes are slow** when they involve international institutions and many States • **Lack of global political alignment** because epidemics tend to affect States unevenly
	h. Global governance structure: degree to which norms and institutions provide a platform for effective collective action	• **Supporting public health capacity has not been a priority** for health aid, which instead has focused on manifest diseases like HIV/AIDS • **Sovereignty** over territory competes with cross-border nature of global public health risks • **No enforcement mechanisms** to promote compliance • **Weak WHO to lead reforms**, partly due to budget cuts and competing priorities
(4) **Issue characteristics** Features of the problem	**i. Credible indicators**: clear measures that show the severity of the problem and that can be used to monitor progress	• **Exact risks unknown** with regard to time and location • **Limited knowledge about impact** if risks materialize • **Lack of clear indicators of public health capacity** which makes monitoring challenging
	j. Severity: size of burden relative to other problems, as indicated by objective measures	• **Manifest problems dominate the short-term perspective** and no cases of H1N1 had been recorded before 2009 • **Recent epidemics** had not been doomsday scenarios like those seen in Hollywood movies or like some scientists had claimed would come
	k. Effective interventions: whether proposed means of addressing the problem are clearly explained, cost effective, backed by scientific evidence, simple to implement, and inexpensive	• **Sparse evidence** on the costs and benefits of particular IHR reforms, even if there is agreement on need for reforms • **Short-term costs** with mostly long-term benefits • **Some believe collaboration is impossible** when issues affect core national security interests, as pandemics do

Framework adapted from Shiffman and Smith (2007).[269] CSO: Civil Society Organization. WHO: World Health Organization.

A. ACTOR POWER

The first category of determinants of global political priority for any particular issue is the strength of the individuals and organizations concerned with the issue. More specifically, this is about *policy community cohesion* (i.e., the degree of coalescence among the network of individuals and organizations central to issue), *leadership* (i.e., the individuals who are strong champions for the cause and capable of uniting the policy community), *guiding institutions* (i.e., the effectiveness of organizations or coordinating mechanisms) and *civil society mobilization* (i.e., the extent to which grassroots organizations have mobilized to press political authorities to address the issue).[270]

With respect to pandemics, there is no united policy community strongly advocating for preparedness. We have a fragmented potpourri of actors who are stretched across health and non-health sectors and have differing priorities and mandates.[271] Some actors focus on disease surveillance, others on a humanitarian response, and still others on clinical guidelines development—with limited interaction with one another. There is also limited involvement of actors outside the health sector, as many of these see IHR reform as a health issue that does not implicate them.[272] The Global Health Security Agenda, which was launched in February 2014, seeks to promote a more unified community, but it is still not a completed effort.[273] In particular, the cohesiveness of the community addressing pandemic preparedness remains far from that of the global community addressing HIV/AIDS, for example.

Following the H1N1 pandemic, leadership for reform was also lacking.[274] Few leaders stepped up to champion reforms despite many calls to do so. Leadership certainly did not come from WHO's Director-General or heads of member states, who would be essential in administering and negotiating any changes to the IHR, respectively. If anything did happen on this front, it was a more general WHO reform process, initiated in 2011, that attracted most of the attention.[275] Nor did leadership come from other actors, like the Director of the United States Centers for Disease Control and Prevention, which could have articulated and advocated for a compelling vision for IHR reform.

Alongside the lack of individual leadership, there was also a lack of effective institutions to guide reform efforts. The one natural guiding institution, the WHO, was ill-equipped post-H1N1 due to budget reductions and competing priorities shifting

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[269] *Id.*

[270] *Id.*

[271] *See* Rasmus Dahlberg, Olivier Rubin, & Morten Thanning Vendelø, *Transboundary Crises: Organization and Coordination in Pandemic Influenza Response, in* DISASTER RESEARCH: MULTIDISCIPLINARY AND INTERNATIONAL PERSPECTIVES Chapter 13 (2016); Steven J. Hoffman, Clarke B. Cole & Mark Pearcey, *Mapping Global Health Architecture to Inform the Future*, CHATHAM HOUSE 5-7 (2015), http://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20150120GlobalHealthArchitectureHoffmanColePearceyUpdate.pdf; Julio Frenk & Suerie Moon, *Governance Challenges in Global Health*, 368 NEW ENG. J. MED. 936, 937-39 (2013).

[272] BEYOND PANDEMICS, *supra* note 127, at 40.

[273] Heymann et al., *supra* note 10.

[274] WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 10; Heymann et al., *supra* note 10, at 1888-89.

[275] *WHO Reform Milestones*, WHO, http://www.who.int/about/who_reform/chronology/en/ [http://perma.cc/DU2C-QPVH].

resources away from fighting infectious diseases.[276] At the same time, no other institution was truly focused on the IHR or issues under its purview. Likewise, few civil society organizations were devoted to advocating for pandemic preparation, and few demanded IHR reform following the pandemic. Instead, most civil society organizations in the health sector were and are focused on present disasters like HIV/AIDS, tuberculosis, malaria, and childhood diseases.[277] To many activists, prioritizing pandemic preparedness may be like purchasing home insurance when there are many house fires already burning and in desperate need of dousing. This may mainly be a practical imperative, because it can be hard to mobilize supporters and donors to act against an unidentified threat for which the exact time, location, and severity cannot be known in advance.[278] But, even if civil society organizations had demanded IHR reform, existing global governance structures often make it difficult for any actors other than governments to have influence. For example, the World Health Assembly—the WHO's plenary governance body of 194 member states—does not formally provide a forum for these organizations to share their views and influence deliberations. This leaves relatively weak actor power focused on pandemics if both the WHO and states fail to prioritize it.[279]

B. IDEAS

The second category of determinants of global political priority is the way in which those involved with any particular issue understand and portray it. This involves both the issue's *internal frame* (i.e., the degree to which the policy community agrees on definitions of, causes of, and solutions to the problem) and *external frame* (i.e., the degree to which public portrayals of the issue resonate with external audiences).[280] Despite general agreement on the need for reforms and on broad kinds of proposals that could work,[281] there was no agreement among experts or governments on which particular IHR reforms were best, how they should be prioritized, and from where they should be financed. Competing views make it difficult to act: first, by lowering confidence in the merits of any one approach; and second, by raising the political costs associated with action given the impossibility of deferring to an "expert consensus" and the increased likelihood of vocal opposition. In addition, member states partly disagreed about the same issues among themselves.

With regard to the external framework, it has proven difficult to engage the public in the need for improving international laws and plans for future pandemics. Like with civil society mobilization, risks are unknown, remote, and distant, which makes it harder to attract public attention and concern.[282] The predominant external frame for pandemics—that "health is global" and that the health of people everywhere depends on each country's capacity to detect and quickly respond to threats emanating from their jurisdictions—has not fully resonated with the public and all decision makers.

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[276] *See* Garrett, *supra* note 139, at 94.

[277] HOFFMAN, COLE & PEARCEY, *supra* note 271, at 18-20.

[278] *See* WORLD BANK GRP. [WBG], WORLD DEVELOPMENT REPORT 2014: RISK AND OPPORTUNITY 18 (2013).

[279] *See* Ilona Kickbusch et al., *Addressing Global Health Governance Challenges Through a New Mechanism: The Proposal for a Committee C of the World Health Assembly*, 38 J. L. MED. & ETHICS 550, 558 (2010).

[280] Shiffman & Smith, *supra* note 265, at 1371.

[281] Bente Molenaar, *General Support for the IHR Review Committee Report*, 2 HEALTH DIPL. MONITOR 20, 21 (2011).

[282] *See* WBG, *supra* note 278, at 17-18.

One consequence is that pandemic preparedness has been woefully under-prioritized relative to the threats, and there has been insufficient international development assistance for preparedness in poorer countries.[283]

C. POLITICAL CONTEXTS

The environments in which global actors operate is the third category of determinants of political priority. This environment is characterized by both *policy windows* (i.e., political moments when global conditions align favorably for advocates to influence decision makers) and *global governance structures* (i.e., the degree to which norms and institutions provide a platform for effective collective action).[284] Policy windows tend to be very short when it comes to epidemics. These windows usually open near the end of the epidemic and close shortly thereafter, often before slow reform processes that involve many international institutions and states develop sufficient traction. While there is little empirical study of the exact length of policy windows, the WHO did make significant cuts to its pandemic preparedness and response budget approximately three years after each of the SARS and H1N1 pandemics, which suggests member states no longer prioritized the issue at that time.[285] The one time in the last few decades when IHR reform was achieved—in 2005—came after ten years of tough negotiations that started in 1995, combined with momentum from the SARS outbreak that ended only a year earlier.[286] Based on these experiences, policy windows for IHR reform seem to last at most three years after a major global outbreak. If states and other actors are not able to align their differing political positions and interests within this time period, IHR reform may prove impossible.

Existing global governance structures also make IHR reforms difficult. Prevailing norms for health aid do not prioritize support for public health capacities, but rather favor particular manifest diseases like HIV/AIDS, tuberculosis, and malaria.[287] A more fundamental challenge, however, is the current international system of sovereignty, which gives near-absolute territorial control to state governments. This does not only fit poorly with the cross-border nature of global public health risks like pandemics, but it also makes significant reforms challenging because these reforms normally require that state parties relinquish some of their territorial control—which each state party will naturally hesitate to do, at least without assurance that all other parties will do the same. The WHO's lack of enforcement mechanisms makes this worse, as the organization has few tools to effectively promote State compliance. The WHO's weak position has also hampered progress more generally, as it is the one natural institution to lead IHR reform efforts. Stronger enforcement mechanisms and a stronger WHO are

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[283] *See* COMMISSION ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 29-32; WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10, at 10-11; Gostin, *supra* note 127, at 2377; Moon et al., *supra* note 10, at 13; Wilson, Brownstein & Fidler, *supra* note 9, at 506-07;

[284] Shiffman & Smith, *supra* note 265, at 1372.

[285] *See* WHO, PROGRAMME BUDGET 2010-2011, *supra* note 223, at 178-80; WHO, PROGRAMME BUDGET 2014-2015, *supra* note 223, at 108-11; WHO, PROGRAMME BUDGET 2004-2005: PERFORMANCE ASSESSMENT REPORT 13-15 (2006), http://apps.who.int/iris/bitstream/10665/69315/1/PBPA_04-05_eng.pdf; World Health Organization, PROGRAMME BUDGET 2006-2007: PERFORMANCE ASSESSMENT REPORT 262 (2008), http://apps.who.int/iris/bitstream/10665/69921/1/PBPA_06-07_eng.pdf.

[286] *See* Fidler, *supra* note 16, at 355.

[287] COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 35-37; INST. FOR HEALTH METRICS & EVALUATION, FINANCING GLOBAL HEALTH 2013: TRANSITION IN AN AGE OF AUSTERITY 19-20 (2014).

therefore not only the subject matter of some of the reform proposals; they are also enablers of others.

D. ISSUE CHARACTERISTICS

Finally, Shiffman and Smith's fourth category of determinants of global political priority is the features of the problem. These features include the existence of *credible indicators* (i.e., clear measures that show the severity of the problem and that can used to monitor progress), the problem's *severity* (i.e., the size of burden relative to other problems, as indicated by objective measures), and the existence of *effective interventions* (i.e., whether proposed means of addressing the problem are clearly explained, cost effective, backed by scientific evidence, simple to implement, and inexpensive).[288]

The potential consequences of a pandemic can be expressed through fairly simple measures of lives lost and economic losses. There is also no question that these consequences can be catastrophic on a global scale, and that there is some agreement around the probability for a pandemic to occur.[289] Optimists and pessimists seem to converge on a risk for pandemic flu of about one to two percent a year.[290] However, there are no credible indicators for more precise figures. We do not know exactly when and where the next pandemic will hit and how bad it will be.[291] This makes it difficult not only to pin down the magnitude of the problem, but also to monitor progress in terms of risk reduction. Instead, we currently monitor progress in terms of public health capacities, but even so, we lack unambiguous and trustworthy indicators.[292]

Pandemics are also special vis-à-vis most other problems. Before a pandemic emerges, its severity will be judged as small or even negligible when judged in terms of current consequences or short-term consequences. In 2008, for example, there were no recorded cases of H1N1, in contrast to the two million deaths from HIV/AIDS that year.[293] At the same time, recent epidemics had not been doomsday scenarios like those seen in Hollywood movies or like some scientists had warned. It is no surprise, therefore, that most decision makers have prioritized combating HIV/AIDS and other manifest diseases over preventing or preparing for H1N1 or other yet-to-come pandemics.

The knowledge gaps pertaining to future pandemics affect not only the perceived severity but also the perceived tractability of the problem. Many experts believe that preventing and preparing for pandemics offers great returns on investments.[294] The Commission on a Global Health Risk Framework for the Future proposes incremental funding of about $4.5 billion per year to implement the framework and compares this

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[288] Shiffman & Smith, *supra* note 265, at 1371.

[289] *See* JONES, *supra* note 1, at 2 (providing examples).

[290] Summers, *supra* note 3.

[291] Michael T. Osterholm, *Preparing for the Next Pandemic*, 352 NEW ENG. J. MED. 1839, 1839 (2005).

[292] *See* Adam Kamradt-Scott, *Implementation of the International Health Regulations*, 1 HEALTH DIPL. MONITOR 10, 11 (2010).

[293] *Compare* JOINT UNITED NATIONS PROGRAMME ON HIV/AIDS [UNAIDS] & WHO, AIDS EPIDEMIC UPDATE 7 (Nov. 2009) ("It is estimated that 2 million [1.7 million–2.4 million] deaths due to AIDS-related illnesses occurred worldwide in 2008.") *with* Associated Press, *Indonesia Stops Announcing Bird Flu Deaths on Case-by-Case Basis*, JAKARTA POST (June 5, 2008), http://www2.thejakartapost.com/news/2008/06/05/indonesia-stops-announcing-bird-flu-deaths-casebycase-basis.html (stating 241 recorded fatalities worldwide at time of posting).

[294] COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 17; JONES, *supra* note 1, at 7-8.

with expected economic losses from pandemics of over $60 billion per year.[295] Experts also agree on many of the general actions needed, including general IHR reforms. However, there is a lack of evidence on the costs and benefits of specific interventions and specific IHR reforms. Surprisingly little research has been conducted in this area. What we do know is that there are lots of short-term costs with mostly long-term benefits. We also know that reforms requiring international collaboration are particularly challenging, with some people even believing that enlightened and enduring collaboration is nearly impossible given how pandemics affect core national security interests.[296] To convince political leaders and other decision makers that the financial and political costs are worth incurring, better evidence is needed, and this evidence needs to be communicated in a plain manner.

VI. CONCLUSION AND STRATEGIES FOR OVERCOMING INACTION

Recognizing our history of re-learning lessons from past epidemics and the specific political barriers to prioritizing action, we can more effectively identify strategies for overcoming these barriers.[297] Indeed, each political barrier points to distinct strategies that can be used to gain traction for much-needed IHR reforms.

First, weak actor power and leadership points to the need for community building around pandemic prevention and preparedness. This effort must include rallying interested actors but also perhaps creating a new multi-stakeholder partnership focused on the hard work of mobilizing the relevant policy communities—a vital task that is too frequently overlooked, under-resourced, and insufficiently valued. The American-led Global Health Security Agenda has made a good start in undertaking this community-building work; the initiative has brought together nearly fifty countries and many international organizations to renew their commitment to fighting global health threats posed by infectious diseases.[298] Hundreds of millions of dollars have been put on the table to facilitate this initiative, most of it coming from the U.S. Department of Defense's biological threats program and the US Congress's budget appropriations for the Ebola response.[299] As a result, many countries, including China,[300] Ethiopia,[301] Indonesia,[302] Pakistan,[303] Uganda,[304] and Vietnam,[305] have committed to boosting their

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[295] COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 2, 8.

[296] *See* Theresa MacPhail, *Global Health Doesn't Exist*, LIMN.IT (July 10, 2015), http://limn.it/global-health-doesnt-exist/ [http://perma.cc/7278-ARZQ].

[297] *See e.g.*, Christine Årdal et al., *International Cooperation to Improve Access to and Sustain Effectiveness of Antimicrobials*, 387 LANCET 296 (2016); Steven J. Hoffman et al., *Strategies for Achieving Global Collective Action on Antimicrobial Resistance*, 93 BULL. WORLD HEALTH ORG. 867.

[298] GLOBAL HEALTH SECURITY AGENDA, (Mar. 7, 2016), http://ghsagenda.org/about.html [http://perma.cc/55NY-HMT4].

[299] KATES ET AL., THE U.S. RESPONSE TO EBOLA: STATUS OF THE FY2015 EMERGENCY EBOLA APPROPRIATION 4 (2015).

[300] *See* Bin Liu et al., *Strengthening Core Public Health Capacity Based on the Implementation of the International Health Regulations (IHR) (2005): Chinese Lessons*, 4 INT. J. HEALTH POL'Y MGMT. 381, 382-83 (2015).

[301] *See* WHO, PROVISIONAL SUMMARY RECORD OF THE EIGHTH MEETING, A68/A/PSR/8, at 14 (July 22, 2015), http://apps.who.int/gb/ebwha/pdf_files/WHA68-A-B-PSR/A68_APSR8-en.pdf.

[302] *See id*. at 11.

[303] *See* Sania Nishtar, *Disease Diplomacy*, HEARTFILE.ORG (July 1, 2007), http://www.heartfile.org/viewpoint-21-disease-diplomacy/ [http://perma.cc/5ZRF-WARB]

[304] Joseph F. Wamala et al., *Assessment of Core Capacities for the International Health Regulations (IHR[2005]) – Uganda, 2009*, 10 BMC PUB. HEALTH 1, 4-6 (2010).

[305] *See* Tran Dac Phu, *Strengthening Global Health Security Capacity — Vietnam Demonstration Project, 2013*, 63 MORBIDITY & MORTALITY WKLY. REP. 77, 77 (2013).

core public health capacities for preventing, detecting, and responding to epidemics. A new process for external country assessments has also been developed and piloted.[306]

While the Global Health Security Agenda represents important progress, it cannot substitute for the universal role served by the WHO. Weak actor power points intensely towards the importance of the WHO, its unique role, and the critical need to get its house in order. On one hand there is no replacing the WHO as the single most important guiding institution for making reforms to the way in which we prevent, prepare for, and respond to pandemics. But on the other hand, pandemics are too serious and threatening to wait additional decades for the WHO to become the effective global public health agency it needs to be.[307] In the meantime, we must build resilience into our global pandemic governance system by encouraging leadership from elsewhere. This may come from the Centers for Disease Control and Prevention, the European Centre for Disease Prevention and Control, and the coalition of countries supporting the Global Health Security Agenda.[308] It is also time that some civil society organizations see it as their role to advocate for pandemic prevention and preparedness, however unsexy the topic may be. Likewise, strong actors outside the health sector must be involved. Here, the Sustainable Development Goals ("SDGs") bring promise. Part of Goal 3 suggests "[s]trengthen[ing] the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks."[309] As heads of government will report on their progress towards the SDGs, it is possible that pandemic preparedness will attract more attention from them and other key players outside the health sector. Advocates for pandemic preparedness should help ensure that the SDGs achieve this effect. In any event, it is vital that these actors proceed in a way that strengthens the long-term capabilities of the WHO rather than undermines it.

Second, the insufficiently consistent ways in which pandemics are understood internally by the policy community points to a need to foster more agreement on specific details. In particular, there is a need for greater consensus on which specific reforms should be prioritized and exactly how they should be implemented. Fortunately, the many post-Ebola review panels may already be starting to achieve this goal.[310] The recommendations of these panels have been overwhelmingly consistent in their main messages, albeit rather different in their guidance for actually operationalizing these messages. While many experts complained about panel fatigue,[311] these panels at least provide an opportunity for key opinion leaders to have their say and to become empowered to champion the changes they endorsed. What will

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[306] *See* GLOBAL HEALTH SECURITY AGENDA, *supra* note 296.

[307] *See generally* Unni Gopinathan et al., *Conceptual and Institutional Gaps: Understanding How the WHO Can Become a More Effective Cross-Sectoral Collaborator*, 11 GLOBALIZATION AND HEALTH 1 (2015); Steven J. Hoffman & John-Arne Røttingen, *Split WHO in Two: Strengthening Political Decision-Making and Securing Independent Scientific Advice*, 128 PUB. HEALTH 188, (2014).

[308] Zain Rizvi & Steven J. Hoffman, *Effective Global Action on Antibiotic Resistance Calls for Careful Consideration of Convening Forums*, 43 J. L. MED. & ETHICS 74, 75 (2015).

[309] U.N. Sustainable Development Summit 2015, T*ransforming Our World: the 2030 Agenda for Sustainable Development*, 18 U.N. DOC. A/RES/70/1 (2015).

[310] *See, e.g.*, COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5; WHO, ADVISORY GROUP ON REFORM, FIRST REPORT, *supra* note 209; WHO, ADVISORY GROUP ON REFORM, SECOND REPORT, *supra* note 211; WHO, REPORT OF THE EBOLA INTERIM ASSESSMENT PANEL, *supra* note 10; PROTECTING HUMANITY FROM FUTURE HEALTH CRISES, *supra* note 118; Moon et al., *supra* note 10; T*he Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response*, WHO, http://www.who.int/ihr/review-committee-2016/en/ [http://perma.cc/YM89-49DJ].

[311] Charles Clift, *Is Yet Another Ebola Report a Symptom of the Problem or the Solution?*, CHATHAM HOUSE (Nov. 13, 2015), http://www.chathamhouse.org//node/19170 [http://perma.cc/W7ZH-EQND].

be needed is greater efforts to extract the common suggestions across these post-mortem exercises and to distill those suggestions into clear actions that are feasible for global decision makers to pursue. More research will also help inform the development and implementation of such concrete steps over the longer term.

Greater consensus and more evidence would also help promote attention to pandemic preparedness outside the immediate policy community. Only then will the public and a wider set of decision makers see that pandemic preparedness is an area where highly effective interventions are available and where highly attractive investments can be made. At the same time, the risk of large-scale epidemics must be vivid, without creating unnecessary fear.[312] More credible indicators of the probability, likely trajectory, and severity of epidemics can have this effect, as can a highly visible watch list of potential priority outbreaks.

Third, the political context in which decisions about global pandemic governance are made works against the likelihood of reforms being achieved. In addition to the WHO's current weaknesses, the effectiveness of the broader regime is based on goodwill, solidarity, and voluntary compliance. There are no sticks and few carrots to incentivize adherence to the IHR. This lack of enforcement mechanisms means the IHR are probably taken less seriously by the 196 states that are legally required to follow them.[313] Adding enforcement mechanisms to the IHR—for example, through mandatory dispute resolution processes—could therefore not only help ensure the treaty's edicts come into real-world effect, but could encourage state parties to take the whole regime more seriously.[314] But, such changes would need to be implemented or locked-in very quickly given the short policy windows that seem to follow each large-scale epidemic, another feature of the political context that works against reform. The reality is that action is probably needed within three years of the Ebola crisis's peak passing, which, in terms of number of new cases, was October 2014.[315] This means we estimate that a new grand bargain for the IHR must be in place by the fall of 2017, or else a new bargain will not be politically possible until after another epidemic reminds us of the IHR's current weaknesses. While the Zika virus outbreak may renew or extend this timeline, each passing day without decisive action reduces the likelihood that reforms will be achieved within the current policy window.

Even if the current policy window does actually pass, leaders should continue to slog away on IHR reforms, knowing that the next epidemic will probably open a similar policy window for their work to be acted upon. These efforts will provide the foundation for future IHR reforms just like the ongoing reform process in the early 2000s laid the basis for SARS to trigger actual change.[316] In the post-Ebola window and beyond, there is also need for donors to re-examine the allocation of health aid. Alongside the looming crisis of antimicrobial resistance,[317] Ebola presses the question

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[312] WBG, *supra* note 278, at 4; S.J. Hoffman & V. Justicz, *Automatically Quantifying the Scientific Quality and Sensationalism of News Records Mentioning Pandemics: Validating a Maximum Entropy Machine-Learning Model*, 75 J. CLINICAL EPIDEMIOLOGY 47, 47 (2016).

[313] *See* Steven J. Hoffman et al, *Assessing Proposals for New Global Health Treaties: An Analytic Framework*, 105 AM. J. PUB. HEALTH 1523, 1529 (2015); Steven J. Hoffman et al., *International Law Has a Role to Play in Addressing Antibiotic Resistance*, 43 J. L. MED. & ETHICS 65, 65-67 (2015).

[314] *See generally* Asha Behdinan et al., *Some Global Policies for Antibiotic Resistance Depend on Legally Binding and Enforceable Commitments*, 43 J. L. MED. & ETHICS 68 (2015); S.J. Hoffman, et al., *International Law's Effects on Health and its Social Determinants: Protocol for a Systematic Review, Meta-Analysis, and Meta-Regression Analysis*, 5 SYSTEMATIC REVS. 1 (2016).

[315] UNITED NATIONS, GLOBAL EBOLA RESPONSE, *supra* note 109, at 14 fig.4.

[316] *See* Fidler, *supra* note 16, at 355.

[317] *See generally* Steinar Andresen & Steven J. Hoffman, *Much Can Be Learned About Addressing Antibiotic Resistance from Multilateral Environmental Agreements*, 43 J. L. MED. & ETHICS 46 (2015);

of whether traditional aid should be reoriented towards transnational threats. In particular, external assistance should probably be leveraged to a much greater extent than today for strengthening national public health capacities.[318]

Fourth, the issue characteristics of pandemics mean there is great political priority for them during outbreaks but relatively little before and after these crises. For an issue of this kind, evidence on the problem as well as the solutions is particularly important. Increasing funding for pandemic modeling research to predict future disease transmission, health effects, and economic impact, can all help galvanize political attention. Similarly, the research community must invest in developing a science of global strategy that could offer insights into what specific IHR reforms would maximize effectiveness.[319] These streams of research should also clearly demonstrate how pandemic preparedness is a global good and how investments can benefit everyone.

Overall, we know the IHR are in desperate need of reform, and we have seen that lessons learned from the Ebola epidemic are similar to lessons learned from the H1N1 pandemic before it. This Article has laid out the political barriers to implementing needed IHR reforms and the strategies to overcome these barriers. The strategies will hopefully be deployed now to reform the IHR before the policy window following Ebola closes, and before the inevitable next epidemic strikes.

Steven J. Hoffman & Kevin Outterson. *What Will It Take to Address the Global Threat of Antibiotic Resistance?*, 43 J. L. MED. & ETHICS 363 (2015);

[318] *See* COMM'N ON A GLOBAL HEALTH RISK FRAMEWORK, *supra* note 5, at 35; PROTECTING HUMANITY FROM FUTURE HEALTH CRISES, *supra* note 118, at 15; Dean T. Jamison et al., *Global Health 2035: A World Converging Within a Generation*, 382 LANCET 1898, 1941-42 (2013).

[319] *See* Gorik Ooms, *Global Social Protection in Health*, *in* TO SAVE HUMANITY: WHAT MATTERS MOST FOR A HEALTHY FUTURE 257, 258 (Julio Frenk & Steven J. Hoffman eds., 2015); Steven J. Hoffman et al., *An International Legal Framework to Address Antimicrobial Resistance*, 93 BULL. WORLD HEALTH ORG. 66, 66 (2015).