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**Global Governance: The World Health Organization
and the Need for Post-COVID-19 Reform**

Addressing Challenges to Public Health and Society Through Global Collaboration

Submitted to the World Health Organization's Independent Panel for Pandemic
Preparedness and Response for consideration

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TABLE OF CONTENTS

1. Contributors	<i>i</i>
2. Abbreviations	<i>iii</i>
3. Executive Summary	1
1.1 Introduction	1
1.2 Concluding Observations and Recommendations	3
4. Frederick M. Abbott, <i>Child-Proofing Global Public Health in Anticipation of Emergency</i>	7
5. Leila Nadya Sadat, <i>Pandemic Nationalism, COVID-19, and International Law</i>	13
6. Ayelet Berman, <i>Closing the Compliance Gap: From Soft to Hard Monitoring Mechanisms under the International Health Regulations</i>	23
7. Pedro Villarreal, <i>Towards a Timeless Legal Definition of a Pandemic</i>	33
8. Ayelet Berman & Fong Han Tan, <i>When Crisis Meets Preparation and Discipline: Singapore’s Successful Response to COVID-19</i>	40
9. Rupa R. Patel & Madaline George, <i>Updating the International Health Regulations: Revising IHR Decision Instruments and the Binary PHEIC Declaration System</i>	56
10. Endnotes	69

CONTRIBUTORS

Frederick Abbott: Frederick M. Abbott is Edward Ball Eminent Scholar Professor of Law at Florida State University College of Law, USA. He has served as expert consultant and legal representative for international and regional organizations, governments and nongovernmental organizations, mainly in the fields of intellectual property, public health, trade, competition, technology transfer and sustainable development. He is co-chair of the Committee on Global Health Law of the International Law Association, having served as Rapporteur for the Committee on International Trade Law from the inception of its work in 1993 to its conclusion in 2014. He served as a member of the Expert Advisory Group to the UN Secretary-General's High-Level Panel on Access to Medicines. Professor Abbott regularly serves as a panelist for the World Intellectual Property Organization Arbitration and Mediation Center. He is on the editorial board of the *Journal of International Economic Law* (Oxford) and on the editorial board of the *WIPO-WTO Colloquium Papers Series*, Geneva.

Ayelet Berman: Dr. Ayelet Berman is Senior Research Fellow at the Centre for International Law (CIL), where she leads CIL's work on global health law and governance and is a member of the International Investment Law and Policy Group. She is also an Adjunct Assistant Professor at the NUS Faculty of Law. She is Vice Chair of the American Society of International Law (ASIL) International Organizations Interest Group. Other past academic appointments include Research Fellow at the Centre for Trade and Economic Integration at the Graduate Institute of International and Development Studies in Geneva and Visiting Professor at the Law Faculty of the University of Lausanne. Prior to entering academia, Dr. Berman practiced law in the field of World Trade Organization (WTO) litigation at Sidley Austin (Geneva) and practiced regulatory and commercial law at Herzog, Fox & Neeman (Tel Aviv).

Alison Duxbury: Alison Duxbury is a Professor at Melbourne Law School and an Associate Director of the Asia Pacific Centre for Military Law. She is also the Chair of the International Advisory Commission of the Commonwealth Human Rights Initiative, a non-governmental organization with offices in Delhi, Accra, and London. Alison is a member of the Council of the Australian and New Zealand Society of International Law, the Executive Council of the Asian Society of International Law and the Board of Directors of the International Society for Military Law and the Law of War. Alison is a former Associate Dean of Melbourne's JD degree. Dr. Duxbury has undertaken advice work in the areas of international law and human rights law. She has been a Visiting Fellow at the Lauterpacht Centre for International Law in Cambridge, the Centre for Comparative and Public Law at the University of Hong Kong, the Oxford Institute for Ethics, Law and Armed Conflict and the Institute of Commonwealth Studies in London. She has also taught at the Centre for Transnational Legal Studies in London.

Madaline George: Madaline George is the Senior Fellow at the Whitney R. Harris World Law Institute at Washington University School of Law in St. Louis. She is also the Program Manager and Membership Officer at the International Law Association (American Branch). Ms. George has published articles in the fields of refugee law, international criminal law, and human rights, and currently teaches International Organizations Law at China University of Political Science and Law. At the Harris Institute, she has worked extensively on the *Crimes Against Humanity Initiative* and the *Gun Violence and Human Rights Project*.

Tan Fong Han: Tan Fong Han is a 2021 LLM candidate at Georgetown University Law Center and a Fellow at the Georgetown Institute of International Economic Law. She received her Bachelor of Laws (Second Upper-Class Honours) from the National University of Singapore. She has participated in several international law moot court competitions, including the Philip C. Jessup International Law Moot Court Competition, and was part of the winning team in the Frankfurt Investment Arbitration Moot 2018 and the Nuremberg Moot Court 2019. She is a scholarship recipient of the Singapore Ministry of Defence, where she will begin work in June 2021.

Rupa R. Patel: Dr. Rupa Patel, MD, MPH, DTM&H is an Associate Professor of Medicine in the Division of Infectious Diseases at Washington University in St. Louis. She is the Director of the Pre-Exposure Prophylaxis for HIV Prevention (PrEP) Program and the former Director of the Global Health Pathway in Internal Medicine at Washington University in St. Louis. Dr. Patel is a member of the World Health Organization Technical Advisory Group for PrEP Implementation. She has served as a PrEP clinical advisor and reviewer for projects in Asia, Africa, North America, and South America.

Leila Nadya Sadat: Leila Nadya Sadat is the James Carr Professor of International Criminal Law at Washington University in St. Louis and the longtime Director of the Whitney R. Harris World Law Institute (2007–2020). She currently serves as Special Adviser on Crimes Against Humanity to the International Criminal Court Prosecutor and the President of the International Law Association (American Branch). She is an internationally recognized authority and award-winning scholar in the fields of public international law, international criminal law, human rights, and foreign affairs. She has published more than 150 books and articles in leading journals, academic presses, and media outlets throughout the world and regularly lectures and teaches abroad. She is the Director of the *Crimes Against Humanity Initiative*, a ground-breaking project to write the world's first global treaty on crimes against humanity, and a member of the U.S. Council on Foreign Relations, the American Law Institute, and a Counselor of the American Society of International Law.

Pedro Villarreal: Dr. Pedro Villarreal is a Senior Research Fellow at the Max Planck Institute for Comparative Public Law and International Law, where he is manager of the interdisciplinary project “International Health Governance.” In 2017, he received the prize for the best doctoral dissertation in law and social sciences at the National Autonomous University of Mexico for his work, ‘Pandemics and Law: A Global Governance Perspective.’ Dr. Villarreal is a Fellow of the Global Health Law Groningen Research Centre, a member of the Coordinating Committee of the European Society of International Law’s Interest Group on International Health Law, and a member of the German Alliance for Global Health Research. He is also a co-editor of the Oxford Compendium of Legal Responses to COVID-19 (forthcoming, 2021).

ABBREVIATIONS

COVID-19: 2019 Corona Virus Disease

IHR 2005: International Health Regulations 2005

IMF: International Monetary Fund

NFP: National Focal Point

PHEIC: Public Health Emergency of International Concern

SARS-CoV-2: severe acute respiratory syndrome coronavirus 2

WHO: World Health Organization

EXECUTIVE SUMMARY

1.1 Introduction

1. A new and deadly virus emerged in Wuhan, China, in late 2019. This easily transmissible novel coronavirus quickly spread throughout the region and, by mid-January 2020, the virus began to spread beyond its country of origin. The World Health Organization (WHO) was first informed of the illness on December 31, 2019. One month later, on January 30, the WHO declared a Public Health Emergency of International Concern (PHEIC) in response to what was known to be SARS-CoV-2, the virus which causes COVID-19. A PHEIC is the highest level of alert available under the International Health Regulations (IHR 2005), the WHO's framework for responding to emerging diseases.
2. Governments responded to this threat with varying degrees of seriousness and effectiveness. At the time of this Report, COVID-19 has been identified on every populated continent, resulting in more than 100 million infections and 2.1 million deaths.¹ International travel has been curtailed, millions of people continue to live under public health restrictions, and economic activity has dramatically slowed. Several vaccines have been developed in record time, but estimates indicate that worldwide inoculation will not reach levels sufficient to return to "normal life" until at least 2022.² The virus – and new variants – continue to spread with rapidity and morbidity, highlighting the need for international legal cooperation in the face of a common threat.
3. The WHO plays a critical role in how States and the international community address global health emergencies. COVID-19 has tested the effectiveness of the IHR 2005, the only binding legal instrument regarding international disease prevention and control. The IHR 2005 were drafted in part as a response to the 2003 emergence of SARS and are generally agreed to be an improvement from their predecessor.³ Yet while the IHR 2005 include a process for declaring a PHEIC and impose requirements upon States, their application and implementation are insufficiently robust. The coronavirus crisis and States' attacks on the WHO itself have compounded these challenges.
4. Under its Constitution, the WHO, representing its 194 Member States, acts as "the directing and coordinating authority on international health work."⁴ During a global health crisis, the WHO monitors and supplies information on the disease and its spread, helps countries prepare their health systems to identify, track, prevent, and treat the disease, and plays a key role in the search for a treatment or vaccine. It works in collaboration with its Member States and has little autonomous authority of its own, relying on national governments for funding, access, and implementation.
5. The IHR 2005 require States to cooperate with the WHO and with each other by tracking health events on their territories, notifying the WHO if they reach a certain threshold of seriousness, providing detailed information to each other and to the WHO, and implementing a range of responses, including achieving a core set of public-health capacities.
6. The IHR define a PHEIC as "an extraordinary event which is determined to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response."⁵ The WHO Director-General and an Emergency Committee are responsible for declaring a PHEIC, which allows the WHO to issue "measures that can address

travel, trade, quarantine, screening, [and] treatment,” as well as determine best practices.⁶ Six PHEICs were declared between 2009 and 2020, each accompanied by Temporary Recommendations.⁷ There is “no mathematical formula [or] algorithm” for a pandemic declaration,⁸ nor does this declaration trigger new funding, protocols, or regulations.⁹

7. Throughout the COVID-19 pandemic, the WHO has faced criticism for its handling of the outbreak. Critics argue that the WHO was too late in declaring a PHEIC and too lenient in its dealings with Chinese authorities.¹⁰ Many scholars of international law and global health pointed to systemic weaknesses in the IHR 2005.¹¹ Criticisms range from a lack of funding to vague language in the IHR and WHO Constitution, and many experts suggest that the IHR needs improvement if they are to adequately protect against future pandemics. As Professor Gian Luca Burci, former legal counsel to the WHO, has noted, the “criteria [for a PHEIC] are open ended and difficult to be framed in purely legal terms,”¹² suggesting that more precise regulations are required. Likewise, in the second meeting of the IHR Emergency Committee regarding the outbreak of COVID-19, the Committee advised that the “WHO should continue to explore the advisability of creating an intermediate level of alert between the binary possibilities of PHEIC or no PHEIC, in a way that does not require reopening negotiations on the text of the IHR (2005).”¹³
8. The WHO’s effectiveness requires it to be perceived as legitimate, reliable, and credible. Attacks on its authority and budget¹⁴ threaten its ability to effectively fulfil its mandate. The WHO and the IHR 2005 have been challenged by COVID-19, raising questions of fundamental and necessary technical reform, as the WHO Assembly of May 18–19, 2020 noted.¹⁵ They have also been subjected to a broader, ideological challenge, especially by the Trump administration, similar to the criticisms levelled at other international institutions such as the International Criminal Court, the World Trade Organization, UNESCO, and the U.N. Human Rights Council.
9. Recognizing the need and potential opportunity for WHO reform in light of the pandemic, the Whitney R. Harris World Law Institute at Washington University School of Law, led by Professor Leila Nadya Sadat, launched a research project on *Global Governance: The World Health Organization (WHO) and the Need for Post-COVID-19 Reform* with support from Washington University’s McDonnell Scholars Academy. This project resulted in the collaboration of partners at Florida State University College of Law, Max Planck Institute for Comparative Public Law and International Law, Melbourne Law School and the Melbourne School of Population and Global Health, the National University of Singapore, and Washington University School of Law and Institute for Public Health. The goal was to undertake an examination of the International Health Regulations (IHR 2005) and to produce and disseminate a report with recommendations for constructive reform. The research project held a series of meetings between August 2020 and February 2021. Several partners contributed essays which analyzed specific aspects of the IHR 2005 and shed light on the possibility for improvement. These articles were debated and revised following feedback from other members of the research project. The resulting papers and recommendations are contained in this publication.

1.2 Concluding Observations and Recommendations

1.2.1 The Global Health Ecosystem

- (1) The successes and failures of certain States in containing the virus must be placed within a broad social and political context.**

Singapore is often cited as an example of a successful State response to the COVID-19 pandemic, as it quickly contained the local pandemic situation to zero- or single-digit transmissions daily. Singapore's success was a result of its extensive pre-pandemic preparations, and a swift and coordinated government response. Nevertheless, Singapore's response was not perfect, particularly with respect to the spread of the virus in migrant workers' dormitories. The case study of Singapore demonstrates that the successes and failures of many countries in managing COVID-19 are attributable to social and political factors that facilitate or impede effective governmental decision-making and cooperation from the citizenry.

- (2) Structural obstacles to health care reform and improvement have delayed low-income nations' ability to comply with the minimum standards for domestic health infrastructure established in IHR Annex 1, which has in turn caused delays in the monitoring and reporting of potential global health threats.**

IHR Annex 1 requires all Member States to attain minimum standards of healthcare infrastructure so that they can accurately assess and identify threats to global public health. However, many nations lack the funding and resources to achieve these standards, and more than half of all Member States have fallen short. These nations weaken global health for everyone, as they do not have the capacity to accurately identify emerging threats before they spread internationally or to minimize the effects of those threats. Any plan to improve the notification structures of the IHR must recognize that even the best-designed systems rest on domestic capacity and that creating a strong health threat identification system will depend on improving the health systems of nations with the lowest degree of investment.

1.2.2 Legal Reform and Reinterpretation

- (3) The development of a legally cognizable definition of "pandemic" would provide an important public health tool for the international community of States.**

The distinction between a PHEIC and a pandemic is unclear under existing law. This largely reflects a lack of scientific consensus. Yet during the onset of the COVID-19 crisis, there was confusion regarding the scope of the event. National governments often refer to the WHO Director-General's statement of March 11, 2020 declaring a pandemic, even though a PHEIC had been declared earlier on January 30, 2020. Moreover, no specific course of action follows from a pandemic declaration. In its current use, it does not mark a 'before and after' for States. Consequently, framing a legal definition of 'pandemic' would contribute to distinguishing it from a PHEIC. It would be equally useful in devising consequences of these declarations for the international community. Input from the medical and public health community will be decisive for properly framing the definition.

- (4) The Public Health Emergency of International Concern declaration system should be reformed with a tiered alert system, as a more nuanced system would better reflect the dynamic nature of pandemics and global health. A tiered system must establish clear criteria for each stage, which in turn must be accompanied by clear operational protocols, strategies for response cooperation, and financing mechanisms.**

Under the current system of global health governance, only one level of alert exists: the PHEIC. The binary nature of this system has caused hesitancy among some NFPs to involve the WHO early in the disease-detection process, as they face serious socioeconomic repercussions if a PHEIC is declared. The WHO has itself been reluctant to declare PHEICs for this same reason. A tiered system of alert could include lower levels of disease detection, lessening the political repercussions for disease notification and for WHO involvement. This more nuanced system would be better able to capture the dynamic and ever-evolving landscape of global health, as it would give a more detailed assessment of any given threat. In addition to incentivizing early reporting and cooperation, a tiered system has the benefit of appropriately distributing finite resources in a manner that reflects the level of threat an emergency poses at different stages of progression. A scoring system, or other type of instrument, should be developed for use by the Emergency Committee and Director-General when evaluating reported events, and decisions should be made in a transparent manner.

- (5) Strong monitoring mechanisms are necessary to avoid and manage the next pandemic and to improve IHR core capacity implementation. The WHO could draw from the experiences of other treaties and international organizations.**

Currently, only one-third of countries have implemented their core capacity obligations under the IHR. The failure to meet IHR minimum requirements has been a persistent obstacle to achieving pandemic preparedness. However, the IHR mechanisms for monitoring and encouraging compliance from Member States are weak, as they rely on self-monitoring and self-reporting. This weakness is not inevitable; other treaty systems exhibit a spectrum of monitoring methods. Independent external review and standing monitoring bodies, like those found in the Nuclear Non-Proliferation Treaty and the 1961 United Nations Single Convention on Narcotic Drugs, create greater incentives for compliance. An analogous system is necessary in the context of global health in order to prevent future outbreaks of pandemic disease.

- (6) Reinterpretation of existing WHO provisions may be a productive way to protect global health, as substantive reform to the WHO would be beneficial but may be difficult to achieve.**

Global health governance relies on collaboration, as the system is only as strong as its weakest member. However, the most recent surge of nationalism, as exemplified by the U.S. and Chinese responses to COVID-19, undermine cooperation and threaten global efforts to contain this or future pandemics. In its current iteration, the WHO contains a number of structural weaknesses which restrict its ability to govern pandemic response and to ensure global health in the face of these nationalistic responses. Key changes to the WHO's architecture could address this, but may be difficult to achieve. A possible work around the challenges to substantive reform is to reinterpret existing provisions of the IHR using the precautionary principle.

- (7) States should consider using the dispute settlement mechanisms in Article 75 of the WHO Constitution and Article 56 of the IHR to enforce State compliance with the obligations contain within these instruments.**

Article 75 of the WHO Constitution provides for dispute resolution before the International Court of Justice, yet no State has ever employed this provision to ensure compliance with the IHR, perhaps due to jurisdictional and evidentiary difficulties. Disputes between States during the COVID-19 pandemic have demonstrated the need for a better resolution mechanism, both to resolve contention and to reinforce the power of the WHO.

- (8) Annex 2 of the International Health Regulations, which governs when a Member States' National Focal Point must report a potential health threat to the WHO, needs reform to more accurately and effectively detect threats to global health security.**

Although Annex 2 of the IHR has improved upon its predecessor by moving away from the disease-specific model of threat notification, it continues to suffer shortcomings. Chief among these is the inability of Annex 2's decision-making algorithm to produce consensus about what constitutes a notifiable event. Several studies have demonstrated that Annex 2's decision instrument lacks specificity and requires improved sensitivity, which can result in missing reportable events and in false positives which threaten to overburden the reporting system, particularly as threats are predicted to increase in number in the future. Annex 2's criteria (particular the first two: *i.e.*, if the public health impact of the event is serious and if the event is unusual or unexpected) should be revised with clear definitions and should incorporate epidemiological criteria into the decision-making process so that States' NFPs are able to make accurate and uniform decisions that are less dependent on subjective considerations. Finally, integrating the One Health Approach – which recognizes the interconnectedness of humans, pathogens, animals, and the shared environment in instigating health threats – into Annex 2 would help the IHR remain relevancy in the long-term.

1.2.3 The Need for New Legal Instruments

- (9) It is worth considering whether a new comprehensive international treaty to prepare for and address future pandemic outbreaks should be negotiated. This could be done as a self-standing regime, or negotiated under the auspices of the United Nations.**

The global response to the COVID-19 pandemic has been poorly designed and executed, with gaps in transparency, scientific understanding, and vaccine manufacturing capacity, as well as the lack of political cohesion. To avoid repetition of this scenario, consideration should be given to reconfiguring the international framework for preparing and responding to pandemic outbreaks through an international treaty or convention defining obligations and rights sufficient to constrain arbitrary or destructive behavior by national political leaders. A comprehensive agreement might encompass the subject matter of the WHO (with its public health mandate) and also the World Bank and IMF (on the international financial side), as well as other subject matter actors, and might be negotiated under the umbrella of the United Nations. A key element to success would be an architecture that provides benefits to all States Parties – avoiding deprivation of Party A to benefit Party B. In principle an international agreement on pandemic preparedness and response could create benefits for all its participating members.

(10) States should consider the negotiation of a new treaty to ensure equitable access to vaccines, medicines, and diagnostics.

Calls for a new agreement on pandemic preparedness gained momentum on March 30, 2021 when leaders of the European Union, along with WHO Director General Dr Tedros Adhanom Ghebreyesus, called for the negotiation of a new international treaty to ensure “universal and equitable access to safe, efficacious and affordable vaccines, medicines and diagnostics for this and future pandemics.”¹⁶

CHILD-PROOFING GLOBAL PUBLIC HEALTH IN ANTICIPATION OF EMERGENCY

Frederick M. Abbott

Edward Ball Eminent Scholar Professor of Law, Florida State University College of Law
Co-Chair, Global Health Law Committee, International Law Association.

1. The tragic response to COVID-19

1. To put things in perspective, the human race has made considerable progress. The first outbreak of the Black Death or bubonic plague in mid-1300s Europe killed an estimated 30–50% of Europe's population, tens of millions of people, in about four years.¹ By that standard, the international community as a whole has done a pretty great job responding to COVID-19, which as of February 11, 2021, has killed 2,362,735 people according to Johns Hopkins data.² That is about 0.03% of a global population of 7.8 billion people.³ We do better than the middle ages.
2. By almost any other assessment methodology, we are hard-pressed to give the international community high marks. The response has been characterized by a lack of transparency, substantial gaps in scientific understanding, inconsistent communication, lack of capacity for the manufacture of vaccines, substantial gaps in preparedness for diagnostics and personal protective equipment, absence to date of an effective treatment, and political conflict.⁴ What makes most of these problems the more glaring is that we understood the gaps well in advance, but we were not prepared to address them. This may be a general problem with low-probability, high-risk events because competition for resources within government budgets gives an advantage to immediate needs.⁵ For each government administration, the hope is that tenure in office will pass without a public health crisis. That potential for crisis is passed on to the next administration.
3. Regrettably for the international community, the pandemic struck during a confluence of political trends that culminated in strong nationalist and anti-science political movements.⁶ It remains hard to explain the ascendancy of Donald Trump to the apex of political power in the United States, and his continuing support from a large segment of the US population, notwithstanding that he has been voted out of office. The leader of the most militarily powerful nation on earth, still a dominant force from an economic standpoint, used his office – and the capitulation of his political party – to deliberately subvert measures to curtail the spread of the virus, publicly rejecting science along the way.⁷ He was not alone. In late November it was reported that President Bolsonaro in Brazil announced that he would refuse to be vaccinated, potentially undermining a vaccine roll-out in that country.⁸
4. At the other end of the political spectrum, we have governments, such as in China, that have done well in their internal control of the coronavirus through the imposition of strictly enforced social control measures,⁹ but where concerns are raised regarding the longer-term consequences from the standpoint of individual rights involving privacy, family life, speech, and freedom of movement.¹⁰ This entails the delicate boundary between elevated government authority during a

health emergency, and assurance that individual rights are restored as exigent circumstances dissipate.

5. Nationalist trends and political conflict have dramatically affected international institutions – a case in point being the World Health Organization. Yes, an imperfect institution, but it plays a key role in facilitating cooperation, particularly for those countries and governments with limited capacity to develop their regulatory framework and to create robust health infrastructures without assistance.
6. Where does international law fit into this maze? Realistically, international law does not remove ineffective or even malevolent national leaders from political office except in the most extreme circumstances following armed conflict. But can international law provide a more resilient framework in which the decisions of national leaders during crisis are less likely to cause harm? A framework in which we are less susceptible to *ad hoc* and incoherent decision making.
7. In a way we are asking whether international law can child-proof the working space of global public health, making it less susceptible to the transient ebb and flow of national political leaders. A fully functioning global public health system would prepare us in advance to address viral and other pathogenic outbreaks in terms of robust R&D platforms and sound manufacturing infrastructure; it would alert us to an outbreak at the earliest possible date; and it would instruct us regarding the appropriate interim protective measures to take,¹¹ all without triggering perceptions of personal insecurity that lead to social unrest and conflict.¹²
8. If the international architecture worked properly, we would not get to where we reached during the COVID-19 pandemic. Of course, we face similar questions in other domains. If the IMF worked better, recessions might be avoided and countries would be less likely to default on their debts. If the World Bank worked better, more countries would move from low to middle-income, and from middle to high.
9. Business and economics perhaps more than disease and death may cause the international community and the governments within it to address pandemic preparedness more seriously. Widespread economic recession, unemployment, diminished trade, and ballooning government deficits worldwide seem more likely to capture the attention of budget drafters and to encourage additional financing for urgent needs like vaccine production capacity.
10. Perhaps the idea of a child-proofed global public health system is a fantasy, and we accept continuing to be knocked around. But we might at least consider the question whether an improved international framework could be developed.

2. An International Convention on Pandemic Preparedness and Response

11. We know from prior experience that negotiation of international treaties or conventions is a difficult undertaking. Many obstacles stand in the way. There are a wide variety of stakeholder interests, ranging from governments at all levels of development, to industries likely to be affected, to consumer interest groups, to existing international institutions, and so on. The negotiations ultimately culminating in the Pandemic Influenza Preparedness Framework at the WHO are emblematic.¹³ Whatever ambitions there might have been for a comprehensive agreement that would have addressed the problems of *demandeurs* in securing low-cost access to vaccines and

treatments were ultimately diluted so as to address a rather limited part of the problem set. With some of the potential obstacles flagged, it is nevertheless worth considering the possibility for a comprehensive international arrangement to prepare for and address future pandemic outbreaks.

12. It is tempting to focus on the World Health Organization as the locus for negotiations since the WHO has a global mandate to address matters involving public health. And, no doubt, much of the subject matter that would be covered by a comprehensive agreement to address pandemic outbreak would be within the subject matter parameters of WHO. But this holds true only to a point. Financing is a key element in addressing pandemic response, including preventive and other advance work. This would entail institutions like the World Bank and its affiliated International Finance Corporation (IFC).¹⁴ Moreover, the International Monetary Fund (IMF) plays a very significant role in the current response to the COVID-19 pandemic,¹⁵ and an even more comprehensive role could be envisaged involving monetary injections needed to maintain employment and economic stability in a crisis situation. While perhaps not as central, the World Trade Organization,¹⁶ the World Intellectual Property Organization,¹⁷ the Food and Agriculture Organization,¹⁸ and other multilateral organizations are responsible for elements of the pandemic preparedness and response equation. Finally, and certainly not least, the United Nations umbrella covers not only the fundamental issue of threats to peace and security, but includes within its various agencies, such as UNDP, a range of activities designed to meet the needs of the poor and marginalized.
13. Given the many interests implicated by pandemic outbreaks – which COVID-19 reminds us can have extensive and devastating impacts around the world – it might be well to envisage a self-standing regime, or a regime negotiated under the auspices of the United Nations, rather than within the WHO. This would take into account the “political equality” of the principal multilateral institutions. Governments negotiating the new treaty or convention could establish among themselves whatever adjustments might need to be made with respect to the operating charters of the various institutions involved.
14. Though the institutional framework is certainly an important element, the fundamental questions go to the substance of a new convention; that is, what would it address?

A. Surveillance, Reporting, and Transparency

15. The International Health Regulations (IHR 2005) of the WHO place obligations on Member States to provide information regarding disease outbreaks. But the IHR are not a strong instrument, at least in the sense of permitting external inspections and verification of data.¹⁹ Moreover, it is not specifically directed toward sharing of biological samples, which is covered by the PIP Framework, but in a narrow context. The WHO itself is reviewing (again) the efficacy of the IHR 2005.²⁰ Regardless of the specific details, it seems clear that surveillance and reporting, which include the obligation of transparency, would be incorporated in a comprehensive framework.

B. Travel and Trade Measures

16. One of the most problematic aspects of the COVID-19 pandemic response involved travel restrictions. The WHO has been extremely wary of recommending travel bans.²¹ There are at least two reasons for this. One has been the scientific objection that travel bans are ineffective because

they are not able to fully contain the movement of persons, so that they are not worth the economic price. The second objection is more of a political/economic nature. Because travel bans immediately affect tourism and related consumer spending, they may have a significant impact on the economies of shuttered countries.

17. The notion that banning travel does not materially affect the spread of pandemic disease does not make intuitive sense, and the COVID-19 pandemic may have turned around thinking on this issue. But it still remains politically and economically problematic for countries to shut their borders, which means that policymakers are likely to delay travel bans until evidence is clear that there is imminent danger.
18. International financial institutions might here be of service in terms of making available substantial capital infusions that countries imposing bans at an early stage – call them precautionary – could draw on to offset income lost as a result of a ban.²² If the cost of a ban were low, governments might be more willing to impose them before the necessity became absolutely clear.

C. R&D and cost sharing

19. The traditional Pharma R&D business model does not work in the development of pandemic vaccines or treatments. As witnessed in response to the COVID-19 pandemic, push and pull mechanisms such as subsidies and advance purchase commitments are needed.
20. This, however, raises new questions about how the results of public subsidization should be used. That is, should individual private sector companies ultimately be making the decisions about where products are produced, who gets them, and at what price?
21. A better system would involve contribution of the technological products of subsidization into pools from which producers could draw.²³ Rather than relying on elevated selling prices as the means to return capital and future R&D funding to the developers of the products, payment could be made through royalties from the producers back into the pool from where it would then be distributed to the providers of the technology. The idea is that those conducting R&D would be reasonably compensated – sufficiently to provide an incentive – while the benefits of the R&D could be widely shared. Levels of royalties paid by producers could be scaled to the income level in the country where the products are provided.

D. Production and distribution of health products

22. One of the biggest gaps in vaccine preparedness is the absence of adequate production capacity worldwide. One of the lessons of COVID-19 is that there is a queue for the availability of vaccines, and that under the current global system a country's place in the queue is determined by wealth and the pre-existence of localized manufacturing facilities. There is nothing new about wealthy nations doing better than less wealthy nations in terms of public health. But it is also possible for vaccine manufacturing facilities to be established where they can prioritize national or regional supply.²⁴ In terms of aggregate global spending, the funds needed to build out twenty or thirty large scale vaccine manufacturing facilities are relatively inconsequential. The IMF, World Bank, or another international institution could readily facilitate a program to accomplish this within the framework of an international convention.

23. Another lesson, not only of the pandemic, but of pharmaceutical markets more generally, is that market demand is necessary to make a business attractive to investors. Putting more money into hospitals, training of doctors, and infrastructure for health systems more generally would help to create the demand for pharmaceutical products that would support local production.
24. Vaccines are not a typical market commodity. The necessary R&D and buildout of manufacturing facilities require public funding commitment. An international convention to develop, procure, and supply vaccines to address a pandemic must provide the public funding to support this activity.

E. Protection of human rights

25. One of the most difficult aspects of pandemic response is the need for mechanisms to control human behavior in ways that are inconsistent with certain fundamental human rights.²⁵ This includes quarantines, travel bans, mandatory testing and/or tracking and tracing, and so forth. In addition, the risks created by disinformation are substantial, and control of information dissemination may be needed in times of pandemic outbreak.²⁶
26. An international convention could define the circumstances under which derogations from customary human rights obligations are permissible and the temporal limits of such derogations.

F. Governance

27. A fundamental question is whether an international convention would have the power to modify the behavior of national or regional governments, even if they can be persuaded to negotiate and sign-on. The answer to improving the possibilities for compliance may lie in the extent of the benefits that may be created. In other words, rather than imposing a cost, if compliance with an overall scheme created a benefit, that could certainly encourage compliance.²⁷

G. Whistling in the wind?

28. A more serious objection to negotiation of a new international convention is that the institutional framework already exists and that adding another layer of governance may cause more inefficiency and inter-institutional conflict. This concern surfaced already in 2015 at a meeting convened in Geneva by the ILA Global Health Law Committee as the Ebola outbreak unfolded.²⁸ The suggestion was that coordinating existing preparedness and response mechanisms would be more productive than establishing a new framework, since the existing mechanisms would be required even under a new international institutional arrangement.
29. The response to that objection is “it depends.” Establishing better coordination implies largely working with the status quo and tinkering around the edges. A new international convention that includes substantial obligations and rights by implication might do more than that. It would elevate the priority of pandemic response.
30. The second objection is that in the current state of international relations it is hardly worth considering a new international convention. Perhaps it is worth noting that on December 3, 2020, the President of the European Council proposed an international treaty on pandemics within the framework of the WHO.²⁹ The proposal did not include detailed specifics, but referred to risk monitoring, better financing and coordination of research, a more efficient system of alerts and

information sharing, improving access to healthcare, and resilience (strengthening healthcare systems and securing supply chains). Not so different than what is discussed above, though proposed within the existing WHO structure.

31. Does a reference by the President of the European Council suggest a potential political reality? On its own, perhaps not. But the economic devastation caused by the current pandemic has the potential to “make this time different.” One thing the COVID-19 pandemic seems to have taught is that governments can spend, and central banks can expand balance sheets, without dire consequences. That should help.

3. International law and essential security interests

32. It remains to ask the question whether the international legal system is sufficiently robust to constrain government behavior in the face of dire health emergencies. The answer is “probably not.” Why? Because governments are elected by national constituencies or are otherwise empowered through support of local populations (or military factions within them). For this reason, given a choice between international cooperation and meeting the needs of the national population, the latter will take priority.
33. This reinforces the notion that an international convention or other mechanism to address a pandemic must create winners. It cannot be perceived as depriving Party A to satisfy the needs of Party B.
34. The dark skeleton underneath all of this is the possibility of the deliberate initiation of biological warfare.³⁰ COVID-19 has demonstrated the terrible potential of biological warfare to military planners. A government equipped with a deadly pandemic virus and its own vaccine could inflict enormous damage on an enemy, while suffering limited consequence. As serious as may be the need to address a next pandemic that comes from natural sources, the need to address a next pandemic that may be deliberately initiated is just as serious. We end this Essay on that frightful note.

PANDEMIC NATIONALISM, COVID-19, AND INTERNATIONAL LAW

Leila Nadya Sadat

James Carr Professor of International Criminal Law, Washington University School of Law
Former Director, Whitney R. Harris World Law Institute
President, International Law Association (American Branch)
Counselor, American Society of International Law
Chair, *Global Governance: The World Health Organization (WHO) and the Need for Post-COVID-19 Reform*

1. Introduction:

1. In late 2019, a mysterious illness emerged in China.¹ On December 31, 2019, the WHO China country office was informed of pneumonia cases of unknown etiology detected in Wuhan city.² As it turns out, the virus probably appeared earlier,³ and during the months of December and January, Chinese leaders were made aware that a new coronavirus was causing the outbreak and were reluctant to allow the information to become public.⁴ Early investigation attributed it to a “novel” coronavirus that had probably spread from bats to other animals and then to humans. Although initial reports suggested that the virus was not transmitted by humans,⁵ this was incorrect. The novel coronavirus was wildly contagious and by mid-January, the first case outside China was confirmed.⁶
2. As of this writing, 107.8 million cases have been reported worldwide resulting in 2.37 million deaths.⁷ The United States leads the world in confirmed cases (27,122,583) and deaths (471,635) with India, Brazil, the Russian Federation, and much of Western Europe and the Americas also suffering very high infection rates.⁸ China, where the virus originated, has confirmed 101,496 cases, with 4,837 deaths.⁹
3. The appearance of the virus and the havoc it has wreaked on human health and the global economy have been devastating. Global GDP has dropped more than four percent,¹⁰ and if we graded the international community on its response to the virus, it would receive poor marks. Instead of transparency and cooperation, nationalism, secrecy, and recrimination have characterized the response of many governments to the pandemic, with predictably devastating results.¹¹ It is now evident that China was not entirely forthcoming with the WHO and the international community at the outset of the outbreak. In addition, the WHO may not have been quick enough to respond to information of the outbreak and declare a public health emergency of international concern (a “PHEIC”) under the International Health Regulations (2005) (IHR),¹² as it stopped short of declaring a PHEIC even after China had effectively quarantined nearly twenty million people across Wuhan and other cities and announced measures to curb the spread of disease nationwide.¹³ Moreover, even when the WHO declared a PHEIC on January 30, 2020,¹⁴ the measures recommended were arguably insufficiently robust to contain the spread of the disease.¹⁵
4. The combination of Chinese secrecy and possible missteps by the WHO caused the outbreak to spread. When it reached the United States, it encountered a nationalistic government already repudiating international law and international institutions that subsequently politicized the

pandemic for political advantage.¹⁶ The U.S. government, like its Chinese counterpart, also kept knowledge of the virus's potential lethality secret for several weeks, although it had been receiving regular intelligence briefings about the virus starting in early January.¹⁷ The Trump administration declared a public health emergency in the United States on January 31, simultaneously blocking most travel from China. Inexplicably, however, the administration continued to downplay the virus, even after it had taken the lives of more than one hundred thousand individuals in the United States.¹⁸ Some countries were able to successfully contain the virus due to a happy coincidence of effective leadership, science-based public policy, adequate resources, and even fortunate geography – New Zealand and Singapore serving as prime examples.¹⁹ Overall, however, a toxic brew of secrecy, timidity, and nationalism allowed the virus to multiply to the despair of scientists, doctors, and other actors seeking to contain it and enhance global cooperation to combat its devastating effects.

5. In August 2020, the Whitney R. Harris World Law Institute at Washington University School of Law launched a project to examine the global governance issues surrounding the pandemic. Although the IHR 2005 and the declaration of a PHEIC were important improvements in the global architecture developed to provide a “global surveillance tool for cross border transmission of diseases,”²⁰ they have proven insufficient in the case of COVID-19 to effectively counter the spread of the disease. The project brought together scholars from Washington University School of Law, the National University of Singapore, Florida State University College of Law, the University of Melbourne Law School, and the Max Planck Institute for Comparative Public Law and International Law, as well as a team of medical experts from the Washington University School of Medicine. Meetings were held over Zoom in late summer and fall 2020, and drafts were exchanged later in the year. Participants also had the opportunity to refer to the work of the International Law Association’s Global Health Committee which has been very active regarding the current pandemic,²¹ as well as to the ongoing work of the Independent Panel for Pandemic Preparedness and Response for the WHO Executive Board (the “Independent Panel”).²² The goal was to use the experience with COVID-19 to examine the effectiveness of the IHR and the WHO, propose possible reforms, and suggest additional ways to enhance global cooperation in the face of the COVID-19 pandemic as well as future global health emergencies.
6. Each scholar in the project has contributed a short essay addressing various elements of the problem or has served as part of the collective to frame the problems addressed by the various contributions. In this contribution I briefly discuss three issues: (1) how nationalism in international affairs makes cooperation difficult, focusing particularly on the example of the U.S. and Chinese responses to the coronavirus crisis,²³ (2) ways that legal and practice reforms might strengthen and fortify the current architecture of the WHO so as to respond more quickly and effectively to contain global health emergencies;²⁴ and (3) how existing provisions of the WHO Constitution and the IHR 2005 can be enforced considering principles of State responsibility for internationally wrongful acts and the dispute resolution clauses in these instruments, in particular Article 75 of the WHO Constitution and Article 56 of the IHR 2005. This section will not address, except tangentially, the potential responsibility of international organizations like the WHO, issues surrounding the possible liability of governments to their own people because of missteps allegedly taken,²⁵ nor possible claims of human rights abuses violating other international treaty and customary international law norms.²⁶ While important, these issues were not within the framing of this particular project.

7. I hope that this contribution and this White Paper will inform the global conversation taking place on these issues, as well as the WHO reform process that was sparked by criticisms of the organization regarding its response to COVID-19.²⁷

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2. The Problem of Pandemic Nationalism:

8. Addressing a global pandemic is difficult even if one assumes States are inherently inclined to cooperate and coordinate their responses, consistent with international law and scientific considerations informing public health responses. If States are unwilling to cooperate or coordinate, however, it becomes unlikely the pandemic will be contained quickly or that therapeutics and vaccines will be distributed equitably and effectively. The COVID-19 pandemic presents a “weakest-link public goods” kind of game in which the outcome for all will be determined by the weakest member of the group. As a recent paper notes, the optimal solution to the problem of infection and viral spread requires “all citizens to choose actions that go well beyond their pure self-interest (*i.e.*, to cooperate) and many choose voluntarily to engage in such behavior. However, the free riding (*i.e.*, defection) of some may have devastating effects for the community,” by frustrating efforts to contain the virus.²⁸ The architecture of the WHO and the IHR 2005 is built upon the premise that States, like citizens within States, will cooperate in the case of a public health emergency. If one country refuses to cooperate and take appropriate precautions to control outbreaks, it becomes difficult to contain the spread of disease.²⁹
9. Under its Constitution, the WHO, representing its 194 Member States, acts as “the directing and co-ordinating authority on international health work.”³⁰ During a global health crisis, the organization monitors and supplies information on the disease and its spread, helps countries to prepare their health systems to identify, track, prevent, and treat the disease, and plays a key role in the search for a treatment or vaccine. It works in collaboration with its Member States, and has little autonomous authority of its own, relying upon national governments for funding, access, and implementation. The IHR 2005 require States to cooperate with the WHO and with each other by tracking health events on their territories, notifying the WHO if they reach a certain threshold of seriousness (based upon the risk of international spread, rather than on actual severity of the illness caused),³¹ providing detailed information to each other and to the WHO, and implementing a range of responses, including achieving a core set of public health capacities.
10. If one takes as an example the U.S. and Chinese responses to the pandemic, not only did both countries arguably fail to comply with the IHR 2005 by concealing information on the virus’s morbidity,³² but the war of words and mutual recrimination that ensued created a very difficult geopolitical environment for the WHO. Beginning in April 2020, President Trump threatened to halt WHO funding, and on May 29, 2020, made good on his threat, announcing that the United States would halt its funding of the WHO and withdraw from the organization.³³ President Trump accused the WHO of protecting China and argued the organization had not taken the reforms necessary to effectively combat the pandemic.³⁴ Yet at the time the President did this, the United States was bound by the WHO Constitution and U.S. law to maintain funding during the one year denunciation period and to continue to fulfill its treaty obligations. The formal notification to the Secretary-General from the United States took place on July 6, 2020.³⁵ As explained below,

repudiating the treaty and immediately cutting off funding was inconsistent with U.S. obligations under international and U.S. law.³⁶

11. During his May 29 press conference, President Trump blamed the Chinese government for the spread of the “Wuhan virus,” using racially charged language, and claimed that the WHO was pressured by China to “mislead the world” about it.³⁷ The United States also imposed unilateral trade and travel bans and restrictions on China, and later ended several cultural exchange programs with China.³⁸ China, in turn, accused the Trump administration of incompetence and misleading the world, itself veering into nationalistic and anti-American rhetoric.³⁹ The fraught relations between the two States have been unhelpful in containing the spread of the virus, but it is the U.S. response – and death toll – that has been particularly shocking. In spite of serious human rights concerns regarding many of its restrictive policies,⁴⁰ China has been relatively successful in containing the virus and has continued to cooperate more or less effectively with the global community.⁴¹ China also announced its participation in the COVAX facility, a joint project of the World Health Organization, the European Commission, and France, to ensure equitable access to COVID-19 diagnostics, treatments, and vaccines,⁴² a growing problem given the excessive share of early vaccine distribution claimed by wealthy nations.⁴³ Nationalist responses have also emerged in other countries such as Brazil, which recently ranked 46th in the world in its response to the virus.⁴⁴
12. The election of Joe Biden as the 46th President of the United States abruptly halted the Trump administration’s problematic response to the pandemic and presented an opportunity to ameliorate what had become an increasingly toxic geopolitical environment, reset relations, and pivot on the global response to COVID-19. President Biden is well-known for his multilateralist instincts. He has kept his promise to “immediately restore our relationship with the WHO, which – while not perfect – is essential to coordinating a global response during a pandemic.”⁴⁵ He has also pledged to restore public health initiatives that facilitate U.S. cooperation on global health issues, including the White House National Security Council Directorate for Global Health Security and Biodefense and the Agency for International Development’s PREDICT program.⁴⁶ So perhaps the worst of the nationalist surge with respect to the coronavirus crisis is over in the United States but other world leaders, especially those following Trump’s lead, continue to present challenges to effective global governance.⁴⁷

3. Some Preliminary Thoughts about Reform:

13. Because other excellent contributions to this project address various elements of reform, this section will be brief. There have been many calls for WHO reform during the current pandemic, and indeed, throughout the years.⁴⁸ These can be divided into roughly two broad categories: *legal reforms* of the IHR 2005 and the WHO Constitution, and *practice reforms* that promote good governance and best practices.
14. In terms of *legal reforms*, most of the focus is on the IHR 2005, which define a PHEIC as “an extraordinary event which is determined . . . to constitute a public health risk to other States through the international spread of disease and . . . to potentially require a coordinated international response.”⁴⁹ The WHO Director-General and an Emergency Committee are responsible for declaring a PHEIC, which allow them to issue “non-binding but practically & politically significant measures that can address travel, trade, quarantine, screening, treatment” as well as determine best practices.⁵⁰ Six PHEICs were declared between 2009 and 2020, each

accompanied by Temporary Recommendations. Two pandemics – H1N1 and COVID-19 – were declared over the same period. As Pedro Villareal addresses in his contribution to this White Paper, there is “no mathematical formula, no algorithm” for a pandemic declaration,⁵¹ nor does this declaration trigger new funding, protocols, or regulations.⁵²

15. Some useful reform proposals have focused upon *reinterpreting* existing provisions of the IHR to promote more effective pandemic control. These include proposals to include a “precautionary principle” in the interpretation of IHR Article 12 on the determination of a PHEIC, to err essentially on the side of caution when doing the risk assessment mandated by Article 12(4)(e).⁵³ Drawing this principle from customary international law, particularly international environmental law, H el ene De Pooter has argued that this customary international law norm should infuse the interpretation of Article 12.⁵⁴
16. Others have suggested that the WHO’s reluctance to impose travel and trade restrictions that could prevent the spread of diseases such as COVID-19 is linked to a misunderstanding of Article 2 of the IHR 2005 which defines as the purpose and scope of the IHR:

[T]o 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 trade and traffic.⁵⁵
17. *Reinterpretation* of the IHR 2005 is easier, of course, than amendment of the IHR or the WHO Constitution. The IHR can be amended according to the procedure set forth in Article 55, based upon a proposal by a Member State or the Director-General, then submitted to the Health Assembly. Amendments can also be rejected by States or made the subject of Reservations under Articles 59–64.⁵⁶ For this reason, amendments must be carefully chosen and receive substantial political and expert support.
18. Yet some reform proposals undoubtedly require amending the IHR, including those contained in this White Paper. These include suggestions that address problems with the binary “on/off” nature of the PHEIC/non-PHEIC designation,⁵⁷ as opposed to a graduated alert system which has been suggested by the Emergency Committees that addressed the COVID-19 pandemic and the current Ebola crisis. Others have proposed making the designation itself more scientific, including amending Annex 2 of the IHR and improving the algorithm that might lead to a designation of a PHEIC or some intermediate level of public health concern.⁵⁸ These are the subject of other contributions and are under consideration by the Independent Panel launched by Director-General Tedros Adhanom Ghebreyesus in May 2020.⁵⁹
19. Finally, some have suggested that the IHR should be amended to allow the organization to impose sanctions on its members for noncompliance.⁶⁰ Indeed, although the IHR are legally binding, States often treat even mandatory WHO measures as recommendations, creating the problem of “defection” highlighted above.
20. In terms of *practice reforms*, close observers of the organization and its work generally agree that more transparent and open governance are important to avoid capture of the organization by States and to promote more inclusion of civil society and private philanthropy. Others have argued that better funding and oversight are needed or have advocated for cooperation with other entities

such as the IMF.⁶¹ As Armin von Bogdandy and Pedro Villarreal have noted, increasing the transparency and inclusiveness of pandemic decision-making will also require further diversifying participation in the IHR roster of experts, which could increase trust in the WHO on the part of States.⁶²

4. Enforcing Compliance Using Principles of State Responsibility

21. As explained above, the IHR 2005 are legally binding, and Members of the WHO have entered into formal treaty commitments to adhere to the WHO Constitution and the IHR 2005, even if in practice they often disregard these commitments. Some reform proposals therefore focus on amendments that would involve the imposition of sanctions upon Members who do not comply. This could be a positive development. Yet, as David Fidler observed in an early article on global health law, and the WHO's former legal counsel Gian Luca Burci observed more recently, the WHO, unlike other international organizations, has not turned to international law and international legal authority in the same way that other international organizations have done so,⁶³ preferring "voluntary and technical approaches."⁶⁴ This may stem from the background and training of the Organization's personnel, who are generally specialists in public health and medicine rather than law.⁶⁵ Although enhancing the binding nature of WHO rules began to shift with the adoption of the IHR 2005, experts seem divided between those advocating for increasing legalization of the IHR⁶⁶ and those doubting the effectiveness of increased legal precision.⁶⁷
22. Article 75 of the WHO Constitution permits (and arguably mandates) recourse to the International Court of Justice for "[a]ny question or dispute concerning the interpretation or application of this Constitution which is not settled by negotiation or by the Health Assembly," unless the parties agree on another mode of settlement.⁶⁸ The IHR 2005 also have a dispute settlement clause, but it is not mandatory. Article 56 of the IHR 2005 permits Members to enter into negotiation and mediation concerning disagreements, and if they are unable to resolve their dispute, provides that they may ask the Director-General to do so, or submit the matter to the Permanent Court of Arbitration.⁶⁹ In the current pandemic, both the United States and China, as well as other States, may have been in noncompliance with the IHR and possibly the WHO Constitution. Yet the dispute settlement clauses remain unused. The final section of this contribution briefly explores whether mandatory dispute settlement is possible, what principles might govern it, and whether legal action would be useful in the current crisis and set a positive precedent for future cases. It does not examine arbitration before the PCA, but only the possibility of action at the International Court of Justice.
23. U.S. politicians have argued that China's initial secrecy and withholding of information in the early stages of the outbreak may have violated Articles 6 and 7 of the IHR 2005,⁷⁰ which require reporting an event that "may" constitute a PHEIC within 24 hours of assessment.⁷¹ The Second Report of the WHO's Independent Panel is less categorical, but does find that "public health measures could have been applied more forcefully by local and national health authorities in China in January."⁷² An initial challenge for any litigant would be to tie any such breach to a violation of the WHO Constitution, as the dispute settlement provision in Article 75 relates to that treaty. It is possible to argue that Articles 21 and 22 of the WHO Constitution, which give the Health Assembly the authority to adopt the IHR and provides for their effectiveness, are in play if States breach the IHR. Under this theory, a breach of a mandatory provision of the IHR is assumed to be tantamount to a breach of Article 22 and, therefore, justiciable under Article 75. It is also possible to make an argument that other provisions of the WHO Constitution, such as Article 37

(Members undertake not to influence the WHO Director-General and staff), Article 63 (requiring prompt communication), or Article 64 (imposing reporting requirements) are directly implicated or could shore up arguments premised upon the IHR.

24. Yet even if the compromissory clause of Article 75 could be successfully invoked on this basis, questions remain about standing, remedies, and effectiveness. For the United States to pursue a claim against China for example, it would have to show that China committed an internationally wrongful act.⁷³ A breach of a treaty is an internationally wrongful act,⁷⁴ but typically a State has the capacity to bring an action only if it can show that it was directly injured by the act complained of.⁷⁵ Although the United States has argued that Chinese secrecy and failure to report promptly prejudiced its ability to combat the pandemic, the actions of the Trump administration in downplaying the virus caused much greater harm than China's initial silence. Moreover, the WHO declined to declare the virus to be a PHEIC on January 23, and waited until January 30, 2020, to do so, after the Director-General met with President Xi to discuss the outbreak.⁷⁶ The Chinese government has also retorted that it released the genetic data on the new coronavirus (although it only did so after researchers independently posted it online on January 10, 2020),⁷⁷ and that its initial hesitancy was fully justified, although experts have disputed that claim.⁷⁸
25. For this and other reasons, although there might be very good reasons to go forward in the International Court of Justice with the claim that a Member's refusal to promptly alert the WHO and other authorities (such as China in the current case) violated Article 6 of the IHR 2005 and parallel provisions of the WHO Constitution, the United States would not be particularly well-placed to bring such a claim, although some members of Congress have suggested this course of action.⁷⁹ As Judge Hudson wrote in his individual opinion for the Permanent Court of International Justice in the *Meuse Case*, a State cannot complain about another State's actions if they have essentially done the same thing. As he put it, relying upon the common law maxim that *he who seeks equity must do equity*,⁸⁰

It would seem to be an important principle of equity that where two parties have assumed an identical or a reciprocal obligation, one party which is engaged in a continuing non-performance of that obligation should not be permitted to take advantage of a similar non-performance of that obligation by the other party.⁸¹
26. Other States, however, that have handled the pandemic consistently with their obligations under the WHO Constitution and the IHR 2005 might present a more sympathetic Applicant. Although they may not be able to claim *direct* injury in the same way that a country where the virus is rampant can, they may nonetheless have been required to take extraordinary measures to address an emergency that might have been more quickly contained had notification taken place immediately. New Zealand comes to mind.⁸² The Italian experience perhaps lies somewhere in between: Italy was hit hard and early by the virus and was swiftly overwhelmed; Italy, too, might wish that notification had been prompt and action had been immediate.⁸³ Yet States often have little incentive to complain (formally) about other States' IHR notification failures, given that they might subsequently find themselves similarly situated.⁸⁴
27. One might also contemplate the possibility of standing on the part of all Members of the WHO *erga omnes* given the object and purposes of the WHO Constitution and the critical importance of promoting swift and collective action on behalf of the global community in the face of new diseases.⁸⁵ This was essentially the basis for standing in *The Gambia v. Myanmar*, in which the

International Court of Justice issued a provisional order agreeing that even though The Gambia was not directly affected by the alleged genocide of the Rohingya people in Myanmar, it had the capacity to assert rights under the Genocide Convention because that treaty imposed obligations *erga omnes partes*.⁸⁶ The Court relied upon earlier jurisprudence in *Belgium v. Senegal* which had interpreted obligations under the Torture Convention similarly.⁸⁷ In other cases, such as its recent advisory opinion in the *Chagos Archipelago*, the Court has pointed to the right of self-determination as *erga omnes*,⁸⁸ and the International Law Commission has suggested that some obligations concerning the global commons have an *erga omnes* character, because they concern the entire international community, meaning that they are opposable to all States.⁸⁹

28. One can therefore plausibly suggest that the Court might entertain an action by one Member against another under the WHO Constitution on an *erga omnes* basis, regardless of direct injury or special interest in the case. Analogizing from *The Gambia v. Myanmar*, all States have a common interest in preventing the spread of infectious disease, an interest exemplified by their participation in the WHO and agreement to the IHR 2005. The 24-hour notification requirement of IHR Article 6(1) is a critical and clear component of the IHR, and notification is a core element of the WHO Constitution. Since defection in the case of a global problem that is like a “weakest-link public goods” game imposes intolerable risks on the entire community, as is the case with certain international environmental norms,⁹⁰ standing on an *erga omnes* basis might be appropriate.
29. Finally, although many commentators have understandably focused upon Chinese responsibility for the uncontained spread of the virus due to lack of prompt and effective notification,⁹¹ the United States bears its own responsibility for the imperfect global response and tragic outcomes in its own country. In addition to increased spread because of U.S. noncompliance with public health guidelines and the IHR, President Trump’s decision to denounce the treaty and withhold funds violated U.S. obligations under the WHO Constitution.
30. The WHO Constitution contains no provision for denunciation. Under Article 56 of the Vienna Convention on the Law of Treaties,⁹² assuming that the treaty permits the “possibility of denunciation or withdrawal,”⁹³ the denunciation could be effective *at the earliest* on July 6, 2021, as twelve months’ notice of withdrawal is required.⁹⁴ This rule was codified in an arrangement made in 1948 that conditioned U.S. participation in the WHO on the right of the United States to withdraw upon giving one year’s notice and fully meeting the payment of assessed financial obligations during that year.⁹⁵ This rule was embodied in a Joint Resolution adopted by Congress in 1948,⁹⁶ and the U.S. accession to the WHO Constitution was conditioned thereon and agreed to in a Resolution of the WHO Assembly on July 2, 1948.⁹⁷ The July 6, 2020, withdrawal note from Washington gave an effective withdrawal date of July 6, 2021, thereby meeting the first condition. However, it did not specify that the United States would continue to pay its assessed contributions,⁹⁸ violating the second. Defunding the WHO during a global pandemic was a reckless act that endangered the ability of the organization to address the growing spread of the disease⁹⁹ and a possible material breach of terms upon which the United States acceded to the WHO Constitution.¹⁰⁰ Had President Biden not reversed the Trump administration’s decision, it might be argued that the United States could be brought before the International Court of Justice as Respondent in a case brought either by a Member State alleging direct injury, or perhaps, once again, by a Member State on the basis of obligations *erga omnes partes*.¹⁰¹
31. Using the International Court of Justice to enforce State compliance with the WHO Constitution and the IHR 2005 has obvious drawbacks. The judicial process is slow and the outcome is

uncertain. In an area of the law in which speed is paramount this is less than ideal. Article 75 has never been relied upon by the International Court of Justice in a decision, although in *Armed Activities on the Territory of the Congo (New Application: 2002)*, the Court acknowledged, in dicta, that if the dispute in the case had arisen under the WHO Constitution, Article 75 would presumably have conferred jurisdiction on the Court, assuming that the DRC had first attempted to resolve it through negotiation or by appeal to the World Health Assembly.¹⁰² The WHO has endeavored to use the advisory jurisdiction of the Court twice, in the *Nuclear Weapons Advisory Opinion* where its application was rejected,¹⁰³ and in a case involving the possible transfer of one of its regional offices.¹⁰⁴

32. Yet, as others have noted,¹⁰⁵ governments must understand that they have *legal* obligations under the WHO Constitution and the IHR and that their policy choices are constrained by these legal commitments. Although an argument can be made that it would be counterproductive to bring an action against either the United States or China because of their tendency to resist judicial action,¹⁰⁶ these are countries that also benefit greatly from international trade and travel and have much to gain from effective pandemic control. Framing a critique in legal as opposed to policy terms may also help shift interstate dialogue away from excessively nationalist language by requiring it to be articulated in legal terms.
33. A claim that a State has violated its international legal obligations may be defended on the basis that its conduct was excused or justified. A State might assert that its actions were predicated on advice of the WHO, and that the WHO itself should bear international responsibility for the spread of the pandemic. The responsibility of international organizations for their own missteps is a complex area beyond the scope of this short contribution. It seems unlikely that in the case of COVID-19, however, one could successfully establish that the WHO failed to follow its mandate. As Eyal Benvenisti has noted, the governance model of the WHO was arguably designed to fail in the face of State intransigence.¹⁰⁷ Persuasive arguments can and have been made that the IHR 2005 are insufficiently precise and need reform, or at least reinterpretation, in order to make WHO actions more effective and clearer. Yet, given the problematic behavior exhibited by States during the current pandemic, enhancing the effectiveness of the WHO would require the addition of “tools to overcome . . . complex cooperation problems among mutually distrustful sovereigns,” including being able to regulate and distribute global health goods directly, as opposed to working through its Member States.¹⁰⁸ Finally, as this and other contributions in this Project have noted, to be effective, the WHO must be able to monitor and enforce compliance.¹⁰⁹ This, as well as the defector problem highlighted earlier, suggests that to become truly effective in the face of future pandemics, the WHO will need much more power than it currently has, and probably more authority than powerful States will be willing to accord it.

5. Conclusion

34. The WHO is currently reviewing its performance in light of the COVID-19 pandemic and the toll it has taken in lives lost and economic costs. Yet review and reform by the organization has been undertaken twelve different times since 2011,¹¹⁰ with undetermined effectiveness. Reform has also been the word of the day for many other international institutions including the World Trade Organization, the International Criminal Court, and the Human Rights Council.¹¹¹ Although the architecture of existing global institutions, including the WHO, may be wanting, as they lack sufficient funding, monitoring, and enforcement measures, they are not likely to be granted either more money or increased authority by States any time soon.

35. Indeed, meaningful structural reform will be impossible without amelioration of the geopolitical environment. Until that reality changes, States will need to use existing legal frameworks creatively, including reinterpreting existing provisions of the IHR 2005 and the WHO Constitution. They may usefully consider using both formal dispute settlement provisions and informal pathways to invigorate treaty provisions and hold each other to their international commitments. We have seen creative “workarounds” in other areas of international law: in the creation of the International, Impartial and Independent Mechanism by the General Assembly to combat Russian and Chinese vetoes of Security Council Resolutions attempting to refer the situation in Syria to the International Criminal Court, for example,¹¹² and even in the creation of the Sanctions Committee by the Security Council in response to terrorist activity. Civil society organizations, including networks of scientists and public health officials, will also need to press international organizations and national systems to adhere to global public norms and best practices. Although the WHO is at the center of the global health system, no one organization can handle all the various tasks that must be undertaken to combat the world’s increasingly frequent public health emergencies. That responsibility requires all stakeholders – individuals, States, and subnational government entities – to cooperate. As vaccine distribution ramps up and multilateralism returns to the fore as a result of leadership changes in the United States, it may be possible to step back from the precipice of pandemic nationalism towards a more cooperative and effective system of global health preparedness, with increased receptivity to the ideas incorporated in this White Paper.

CLOSING THE COMPLIANCE GAP: FROM SOFT TO HARD MONITORING MECHANISMS UNDER THE INTERNATIONAL HEALTH REGULATIONS

Ayelet Berman

Centre for International Law, National University of Singapore Faculty of Law

1. Introduction

1. The world has been caught unprepared for COVID-19. Many countries, including highly developed countries such as the U.S. and the U.K., scrambled to craft a response to the pandemic. The consequences of their unpreparedness have been and continue to be catastrophic, with millions dying and economies being crushed. This would not have been the case, or would not have been as extreme, had countries invested in the core public health capacities needed to prevent pandemics – in other words, had countries rigorously complied with their obligations under the International Health Regulations (IHR).
2. Under the IHR, Member States are under an obligation to develop and maintain core health capacities for effective responses to disease outbreaks. Core capacities are the capacities needed to prevent, detect, assess, notify, report, and respond to public health risks and emergencies. This includes having in place, for example, surveillance systems, reporting systems, and laboratory services.¹
3. The COVID-19 pandemic is not the first time that governments' unpreparedness for disease outbreaks has been exposed. Following the 2014 Ebola virus outbreak in West Africa, it became clear that many of the failures leading to the spread of the fatal disease had been caused not by gaps in the IHR themselves but by a lack of IHR implementation.² One of the main recommendations coming out of the Ebola experience was, therefore, that full IHR implementation in all Member States was an urgent task that should be given the highest priority.³
4. To this end, there have been sustained calls by health and policy experts to improve compliance through the installation of monitoring mechanisms with compulsory external oversight that are more stringent than the weak mechanisms that the World Health Organization (WHO) currently has in place.⁴ Current monitoring mechanisms rely on self-assessment by Member States (rather than external oversight) and are voluntary in nature.⁵
5. Yet despite these calls for better monitoring, the immense gap between the critical nature of core capacity obligations and the institutional mechanisms in place to monitor their implementation persists. This gap persists because although stringent monitoring mechanisms would potentially bring benefits to global health security, WHO Member States tend to be concerned about interference in their domestic affairs and have, as of yet, resisted more intrusive monitoring mechanisms.⁶ As a result, despite the preventable tragedies caused by disease outbreaks, many WHO Member States continue to fall short on core capacity implementation. COVID-19, it is hoped, has created the momentum needed for states to agree on stronger accountability measures

which would contribute to closing the gap between core capacity obligations and their implementation.

6. Against this background, the purpose of this short Essay is to examine the role of monitoring mechanisms in improving IHR core capacity implementation. While acknowledging that improving compliance is a complex task requiring a holistic and multifaceted response – such as significant financial and technical support and systemic capacity building in developing countries—the focus in this Essay is on the singular topic of monitoring mechanisms. The Essay seeks to draw lessons from other, more stringent monitoring mechanisms found in other international organizations. It should be noted that dispute settlement mechanisms for settling disputes between Member States are also accountability mechanisms that may incentivize compliance but are beyond the scope of this Essay.
7. Below, this Essay lays out the core capacity obligations (section 2) and the current WHO monitoring mechanisms (section 3). It then assesses the current mechanisms against a typology of monitoring mechanisms found in international governance (section 4) and suggests possible avenues for strengthening IHR monitoring mechanisms in the future (section 5). Section 6 concludes.

2. WHO Member States' Obligation to Develop and Maintain Core Health Capacities

8. Under Articles 5 and 13, the IHR mandates that WHO Member States develop, strengthen, and maintain minimum core public health capacities. States must develop, strengthen, and maintain the capacity to detect, assess, notify, and report public health risks⁷ and to respond promptly and effectively when such risks occur.⁸ The minimum core capacity requirements are spelled out in the IHR Annex and include surveillance, rapid response, risk communication, human resources, laboratory services, logistical and communication capacities, the maintenance of a national public health emergency response plan, and more.⁹ Member States had five years to meet these requirements (2007–2012), and the WHO then provided two extension periods.¹⁰ These extension periods expired in 2016 – nine years after the entry into force of the IHR in 2007.
9. Despite the legally binding nature of the IHR 2005 and despite having many years to implement core capacities, compliance with these requirements remains low, especially in developing countries,¹¹ but – as showcased with COVID-19 – in developed countries as well. COVID-19 has now clearly revealed the tragic consequences of this deficit, but the unfortunate truth is that public health experts have long been warning about the high level of unpreparedness across the globe.¹² IHR implementation reviews undertaken in recent years have concluded that only thirty percent of states had reasonably implemented core capacities.¹³ Recently, a group of leading global health scholars warned that “following more than a decade under the revised IHR, only a third of countries meet the core capacities of public health systems required therein, impacting countries’ abilities to prevent, detect, and respond to disease outbreaks and putting the whole world at risk.”¹⁴

3. Current Monitoring Mechanisms under the IHR

10. In general, monitoring mechanisms are mechanisms or procedures created under a respective treaty for an international organization or other international body to monitor the compliance of the treaty’s parties with their obligations under the treaty.

11. Monitoring mechanisms are commonly perceived as carrot-and-stick mechanisms: On the one hand, through transparency, accountability and oversight, noncomplying states suffer reputational or other sanctions; on the other hand, by identifying the obstacles that undermine compliance, such mechanisms provide expertise or technical support to Member States to address identified problems.
12. Not all monitoring mechanisms in international governance are made equal. As I elaborate below (Section 4), monitoring mechanisms range between stringent mechanisms with external inspection powers to weaker mechanisms, which rely on State self-assessment. As I describe next, the monitoring mechanisms under the IHR have undergone some strengthening since the adoption of the IHR in 2005.¹⁵ The mechanisms have, nevertheless, largely retained their soft and weak nature by relying on self-assessment and voluntary review.

A. Self-Assessment Reporting

13. In accordance with Article 54 of the IHR 2005 on “Reporting and Review” and WHA Resolution A61.2, *Implementation of the International Health Regulations*, States Parties and the WHO are required to report to the World Health Assembly (WHA) on the progress they have made in implementing the IHR.¹⁶ In the first few years after the 2005 IHR revision, the WHO Secretariat sent an annual questionnaire to Member States. Then, in 2010, the WHO adopted the *IHR Core Capacity Monitoring Framework*, which identified twenty indicators¹⁷ to be included in the annual questionnaire.¹⁸ States were required to self-assess and score their capacities in thirteen topics, including laboratories, human resources, surveillance, and risk communication.¹⁹
14. In recent years, most notably after the end of the implementation of grace periods granted to Member States and following the Ebola outbreak, the necessity of implementing core capacities has, as mentioned in the introduction, received more attention. A series of reviews carried out within the UN system²⁰ and by independent experts²¹ have all highlighted the need to improve core capacity implementation and, in turn, monitoring. Notably, many have criticized the monitoring system based on self-evaluation as being inherently self-interested and unreliable, which undermines the integrity and utility of the self-assessment.²²
15. The 2015 *IHR Review Committee on Second Extensions for Establishing National Public Health Capacities on IHR Implementation* thus recommended that the WHO move away from self-evaluation to a variety of other approaches for improving implementation, combining self-evaluation, peer review, and voluntary external evaluations involving domestic and independent experts.²³ This approach was also supported by the 2016 *Review Committee on the Role of International Health Regulations (2005) in the Ebola Outbreak and Response*, which determined that inadequate core capacities had contributed to the outbreak and that IHR implementation was a matter of priority. The 2016 committee recommended promoting the external assessment of core capacities. It found that “self-assessment has significant weaknesses” and that external evaluations will reveal “shortfalls in core capacities not identified or recognized [in] ... self-assessment.”²⁴
16. The WHO, consequently, adopted the *IHR Monitoring and Evaluation Framework*, which introduced some new monitoring components.²⁵ First, it continues the mandatory annual self-reporting to the World Health Assembly (above). Reporting is now based on the 2018 State Parties Self-Assessment Annual Reporting (SPAR) tool, a quantitative questionnaire through which Member States self-assess and score their progress towards implementing core capacities.²⁶ Second, it adds

three voluntary components: after-action review (that is, reviews of significant public health events to assess the functionality of capacities in real events), simulation exercises, and voluntary external evaluation. Such voluntary external evaluation is being carried out by the Joint External Evaluation (JEE).²⁷

B. Joint External Evaluation

17. Composed of independent international subject matter experts tasked with evaluating the national implementation of IHR 2005 core capacities,²⁸ the JEE is a move away from the monitoring mechanisms that exclusively employed self-assessments and reflects a recognition that accountability is better achieved through external oversight. At the same time, being voluntary, and as a joint initiative of external and local experts, the JEE is far from the more stringent, purely external inspection bodies found in other treaties (see below), leaving room for improvement if and when the WHO seeks to reform and strengthen its monitoring mechanisms after COVID-19. I address some of the JEE's shortcomings in Section 5 below.

C. How can IHR Monitoring be Reformed?

18. COVID-19 has made it evident that the implementation of core health capacities remains of highest priority. However, the WHO's monitoring mechanisms are soft.²⁹ They rely on self-reporting and on information provided by Member States, but there are no mandatory external inspections and no sanctions for noncompliance. Against this background, there is a growing consensus that the existing monitoring mechanisms should be made more rigorous and that new, more stringent mechanisms should be added. For example, leading global health thinkers, in a recent *Lancet* essay, urge that “to ensure accountability for national capacity building, states should integrate an effective reporting mechanism to monitor implementation of IHR obligations ... The absence of any provision for such monitoring in the IHR hampers its effectiveness and relevance.”³⁰ The Council of EU Draft Conclusion on the Role of the EU in Strengthening the WHO stresses the necessity of “increased transparency on national compliance with the IHR, together with a more effective and consistently applied reporting system by States Parties to the WHO Secretariat, as well as strengthening joint external evaluations and their follow up.”³¹
19. In thinking about how to reform monitoring under the IHR, what kind of monitoring system can or should the WHO adopt? In the sections below, this Essay examines other monitoring mechanisms in international organizations from which design ideas and lessons could be drawn.

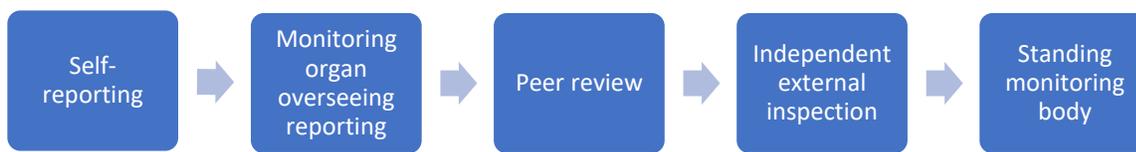
4. Typology of Monitoring Mechanisms

20. Looking beyond the WHO, many international agreements and international organizations in diverse policy fields – from human rights to environment, finance, drugs and arms control – have monitoring mechanisms.³² These monitoring mechanisms range from softer to more rigorous mechanisms.
21. Rigor is understood as the extent to which the monitoring body has the authority to oversee, intervene in, or inspect domestic State behavior.
22. In an attempt to introduce some clarity into our thinking about the possible monitoring improvements the WHO could adopt, drawing from existing practices, I lay out a typology of the main kinds of monitoring mechanisms in international governance and flag other factors that

influence their level of authority and rigor. Hopefully, this will provide some clarity – within the scope of a short essay – to our thinking about the options available to the WHO.

23. This Essay lists five main institutional monitoring mechanisms, ranging from more restrained to more intrusive upon domestic affairs or sovereignty. Rather than being alternative mechanisms, it is common for stringent treaties to apply all or some of these mechanisms.

- (1) Self-reporting,
- (2) A monitoring organ (within international organizations) overseeing reporting,
- (3) Peer review,
- (4) External inspection,
- (5) Standing monitoring body.



24. The level of intrusiveness into domestic affairs depends not only on the institutional form (internal or external to the organization), but also on other factors. In this Essay, I flag two factors: first, the obligatory nature of the measures (voluntary measures are less intrusive than mandatory measures), and second, the source of information (when the source of information is from the State alone, it is less intrusive than when other sources may be taken into account).

5. Strengthening Monitoring Mechanisms under the IHR 2005

A. Self-Reporting

25. Self-reporting as a monitoring tool is common practice in international agreements. Most treaties, across diverse fields, require states to make periodic reports of their compliance. The popularity of reporting emanates from the resistance of Member States against measures that intrude into their domestic affairs while arguably raising governmental awareness of the state's international obligations and helping identify domestic hurdles to compliance. Thus, many international treaties require Member States to issue periodic reports regarding the implementation of their treaty obligations, typically addressing the measures that they have adopted, the progress made, the challenges incurred, and plans of action to address implementation gaps.

26. Despite their softness, self-reporting requirements may still contribute to compliance by requiring states to self-reflect on their implementation status, thereby increasing their awareness of their legal obligations.³³ They also help in identifying gaps in implementation and where more support or efforts are needed.

27. Annual self-reporting is, as noted, mandatory under the IHR. Such self-reporting is, however, widely viewed as unreliable in obtaining an accurate picture of the state of pandemic preparedness because it relies on information provided by the state.³⁴ To achieve more accurate and encompassing information, Gostin and others have, for example, proposed that reporting under

a revised IHR would allow for “unofficial data sources, including civil society and academic experts, and the independent collection of public health data where necessary by WHO staff.”³⁵

B. Monitoring Body Overseeing Reporting

28. A further problem with the reporting system under the IHR 2005 is that although reports are submitted to the Secretariat, the WHO lacks a centralized body that rigorously and actively manages and oversees implementation on a day-to-day basis and provides feedback on the reports. For example, in 2019, only eighty-eight percent of members submitted reports,³⁶ but there were no negative consequences for those countries that did not submit reports or that submitted reports late. The absence of any accountability for failing to fulfil reporting obligations has arguably contributed to the fact that states have not given implementation a high priority.³⁷
29. Moreover, implementation is a progressive process, and an oversight body cannot only provide a stick but also act as a carrot by engaging in ongoing dialogue with Member States. Such a dialogue would support the implementation process by identifying missing information, helping states identify domestic obstacles that need to be addressed, and identifying matters that require international financial or technical support. Further, such a mechanism could also gather information from other sources, such as other IOs, civil society, or academia, or could gather information independently.
30. We can find examples of such centralized oversight of reporting in other treaties. For example, under CITES, a treaty that deals with endangered species, a standing committee oversees that reports have been submitted on time and issues a report that makes recommendations regarding ways to improve implementation.³⁸ Under the Single Convention on Narcotic Drugs, after states submit their reports,³⁹ the International Narcotics Control Board (INCB) may require additional studies and information.⁴⁰ The INCB then publishes its findings regarding the implementation status and recommendations for improvements.⁴¹ The Board also has the right to publish a report on any matter concerning compliance with the treaty – without the consent of the state.⁴² In contrast, such powers are currently not expressly granted to the WHO Secretariat under the IHR.
31. The World Organization for Animal Health (OIE) Observatory is a standing mechanism that monitors the implementation of OIE standards by Member States.⁴³ The Observatory identifies compliance gaps and tailors capacity-building activities to address identified needs.⁴⁴ Finally, the World Anti-Doping Agency (WADA), which oversees the 2015 World Anti-Doping Code, has an internal compliance taskforce that reviews self-reports and recommends corrective action when it identifies implementation gaps. WADA also has a continuous monitoring program that seeks to continuously oversee the corrective actions undertaken following these reviews.⁴⁵

C. Peer Review

32. An additional kind of monitoring mechanism that the WHO could consider integrating into its practices involves peer review by Member States.⁴⁶ Some organizations not only require reporting but also subject members to peer reviews.
33. Peer review introduces more transparency towards the other members and creates a reputational incentive to comply with the obligations. Such peer review by Member States thus increases the likelihood that states who care about their reputation as law-abiding members of the international

community will comply with their obligations. Through the peer review process, states also exchange best practices and experiences that support them in tackling their implementation challenges. Examples of a peer review process include the OECD peer review process in relation to the OECD Anti-Bribery Convention, which is carried out within the Working Group on Bribery. The International Energy Agency (IEA) also conducts periodic peer reviews called “Emergency Response Reviews,” which assess the readiness of each Member State to respond to an emergency. The review team includes the IEA Secretariat and all the other IEA Member States.⁴⁷

D. External Independent Review

34. In a recent *Lancet* article on COVID-19, public health experts stressed the need for external, independent oversight, saying, “To ensure accountability for national capacity building, states should integrate an effective reporting mechanism to monitor implementation of IHR obligations ... and, crucially, to incorporate some type of independent review.”⁴⁸
35. These calls are not new and had, in fact, previously gained traction following the Ebola crisis, with many reviews and public health experts recommending that monitoring should be bolstered through rigorous inspection carried out by external, independent inspectors.⁴⁹ The *Review Committee on the Role of the IHR in the Ebola Outbreak* found that “independent external evaluation ... will add considerable constructive value to the [assessment] process” and that “external evaluation appears to be a necessary complement to self-assessment.”⁵⁰ The committee recommended that “[s]elf-assessment, complemented by external assessment of IHR core capacities, becomes recognized best-practice to monitor and strengthen the implementation of the IHR.”⁵¹ Further, the *Harvard-London School of Hygiene & Tropical Medicine* report recommended that all governments agree to the regular, independent, external assessment of their IHR core capacities.⁵² Similarly, the *National Academy of Medicines Commission on a Global Health Risk Framework for the Future* recommended that there be independent, external assessments.⁵³ The UN Secretary General High Level Panel on the Global Response to Health Crises recommended that the WHO carry out independent assessments of compliance every four years in addition to self-assessment.⁵⁴
36. The JEE, described above, captures the idea of external evaluation. However, compared with rigorous external evaluation, the JEE has shortcomings. The JEE is voluntary, and as of this writing, only 112 Member States have chosen to undergo an evaluation. Further, the evaluation is infrequent, rather than periodical, such as every five years. The evaluation also relies on self-reported data, which the inspected State compiles for the examiners. To be more effective, inspectors should be able to rely on other sources of information (*e.g.*, civil society or other states) without requiring State approval. The gathering of independent sources of information would allow for a more accurate picture of a State’s compliance status.⁵⁵ The JEE also depends on cooperation with the State concerned, as the State’s approval is required in selecting experts for the JEE to work with. The States must also agree to the publication of the WHO findings (so far, only ninety-seven reports have been made public).⁵⁶
37. Despite these shortcomings, WHO Member States concerned about sovereignty and domestic affairs have been reluctant to agree to mandatory independent inspections, let alone to independent information seeking.⁵⁷ As Burci and Quirin point out, even the *2018–2023 Global Strategic Plan to Improve Public Health Preparedness and Response* continues to prefer self-assessment over external review.⁵⁸ Gostin, Katz, and Ayala have recommended incentivizing States to

undertake independent evaluations by granting a carrot – that is, by tying such evaluations to financial and technical assistance. They suggest conditioning financial assistance received by the IMF or World Bank on meeting core capacities and participating in independent inspections.⁵⁹

38. Although such external inspections are relatively uncommon in international agreements, in areas that governments perceive to be critical for security, such as drugs, nuclear weapons, and arms control, states have agreed on more stringent external inspection mechanisms from which the WHO could draw inspiration. For example, under the United Nations Single Convention on Narcotic Drugs (UNSCND), the International Narcotics Control Board (INCB)⁶⁰ carries out periodic missions to inspect compliance in Member States. The mission publishes its findings and recommendations in a report. Moreover, the board also has the authority to demand an inspection if it suspects noncompliance. The board may also alert other parties to the state's noncompliance. It also has the power to impose soft sanctions, as it may “recommend to Parties that they stop the import of drugs, the export of drugs, or both, from or to the country.”⁶¹
39. Another example is the inspections carried out by the International Atomic Energy Agency, which is entrusted with ensuring compliance with the Nuclear Non-Proliferation Treaty (NPT) and other treaties preventing the spread of nuclear weapons. The IAEA safeguard measures, as set out under the Comprehensive Safeguards Agreement, include diverse monitoring tools, including on-site inspections, visits, and ongoing monitoring and evaluation. The IAEA verifies the reports made by Member States and has independent inspection capacities. The IAEA undertakes four kinds of inspections: ad hoc, routine, special, and safeguard visits.⁶² The IAEA relies on Member State information but may also independently collect information and data or accept information from other sources.⁶³
40. A further example is WADA, which carries out audits undertaken by external experts. WADA also uses diverse sources of information to conduct its monitoring activity, including investigations. In fact, in 2020, WADA created the Compliance Investigation Section dedicated to investigating noncompliance by Signatories.⁶⁴

E. Standing Monitoring or Review Bodies

41. An independent, standing monitoring body for overseeing compliance would introduce an additional layer of accountability. This was suggested after the Ebola crisis and is receiving renewed attention after COVID-19. After the Ebola crisis, the *Harvard-London School of Hygiene & Tropical Medicine Independent Panel on the Global Response to Ebola Commission* recommended the establishment of an *Accountability Commission for Disease Outbreak Prevention and Response*.⁶⁵ This would be a central, permanent, and independent monitoring body set up by the United Nations Secretary General and comprised of members of civil society, academia, and independent experts. It would report to the World Health Assembly and a proposed Security Council Global Health Committee⁶⁶ and would publish its findings regularly. Among its responsibilities⁶⁷ would be monitoring efforts to build and sustain national core capacities.⁶⁸ The proposed Security Council Committee would not be tasked with overseeing IHR implementation but would rather be “an arena for high level attention to health threats and a forum for problems not adequately resolved by the WHO governing bodies.”⁶⁹ Such a committee would publish an annual report on progress in building a strong and effective global health security system, taking into account analyses from the Accountability Commission and WHO.⁷⁰

42. Moreover, some commentators have called for the adoption of review mechanisms that would induce states to take corrective action and comply with their obligations. The idea is that the threat of sanctions or the publication of a state's failure to comply would trigger reputational concerns, in turn incentivizing action. For example, in early discussions regarding the desired WHO reforms in response to COVID-19, the U.S. Department of Health and Human Services set out a roadmap for areas in need of IHR reform, proposing a "universal review mechanism for IHR compliance" that would "encourage countries to view preparedness as fundamental to national and health security as well as incentivize fulfillment of IHR obligations."⁷¹ Similarly, France and Germany have bemoaned that while other international agreements have accountability mechanisms in place that incentivize implementation and other international frameworks grant the relevant international organization the right to intervene, the IHR 2005 lack such mechanisms, and implementation largely depends on Member States' willingness to cooperate. France and Germany have therefore called for the establishment of a "review mechanism for IHR compliance."⁷²
43. Here, too, the WHO could draw inspiration from similar examples in other international frameworks. Examples include the 1961 United Nations Single Convention on Narcotic Drugs, which established the International Narcotics Control Board (INCB), an independent, quasi-judicial body whose role is to monitor and support governments' compliance with the treaty.⁷³ Among its different roles (as mentioned above), the Board oversees the noncompliance procedure.⁷⁴ Under this procedure, if the Board has reason to believe that a member is failing to comply with the treaty, it has the authority to "propose consultations, request explanations, and recommend that a government modify its policies." If the Board finds that governments have failed to comply with its recommendations for remedial action, it can publicize this information widely, including among the other States Parties, the UN Economic and Social Council, and more. Similarly, the WADA Compliance Review Committee is an independent standing committee that provides guidance and recommendations to WADA's governing bodies on matters pertaining to compliance.⁷⁵

6. Conclusion

44. As has become quite clear, the current mechanisms for monitoring Member States' compliance with IHR core capacities are of a soft nature. There are two main mechanisms: mandatory annual self-reporting and voluntary external inspection. Both mechanisms have shortcomings that result in a monitoring system that provides little stick and little carrot: it puts hardly any external pressure for compliance on Member States, let alone provides ongoing and rigorous support in overcoming compliance obstacles.
45. Given the immense devastation caused to society and the economy by disease outbreaks such as COVID-19, the gap between the critical importance of the core capacity obligations and the soft mechanisms used to oversee and support compliance can no longer be justified. The purpose of this short essay has been to draw from the experiences of other international agreements and to describe some of the ways through which the existing IHR mechanisms could be strengthened and additional monitoring mechanisms added. The collective mandatory application of stronger reporting, including a body overseeing and supporting reporting, external inspections and a standing review body, would provide important mechanisms for putting pressure on governments to fulfil their obligations while also providing ongoing support in overcoming their compliance obstacles.

46. The legal method for effectuating such reforms would ideally be by way of a treaty. That is, through the amendment of the IHR 2005 or the conclusion of another global health security treaty. Although such multilateral legal amendment processes promise to be extremely complicated from a political standpoint and a legally nonbinding resolution would be easier and faster to obtain (as was the case, for example, with the *IHR Monitoring and Evaluation Framework*), a binding legal treaty would be the only way to grant the WHO (or any other international body, for that matter) more legal authority to intervene in domestic affairs. Given the need for lasting and meaningful change, a soft law approach will hardly be effective.
47. Be that as it may, it is important to stress that any and all IHR reform proposals will remain obsolete without the necessary political support and financial commitment – factors that have, as of yet, been lacking in the WHO. In fact, similar reform calls were made after the Ebola crisis, yet states remained reluctant to permit stronger monitoring. The social and economic hardship caused by COVID-19 will hopefully trigger more political willingness to agree to more far-reaching monitoring reforms, yet it is hard to predict what can be achieved in the current geopolitical circumstances.
48. Finally, although this Essay has focused on monitoring mechanisms, it is important to keep in mind that while stronger monitoring mechanisms may increase the pressure on states and support them with their implementation challenges, in developing and vulnerable countries, such mechanisms need to go hand in hand with capacity building. Any reform also needs to factor in a grace period and support for implementation in low-income countries.

TOWARDS A TIMELESS LEGAL DEFINITION OF A PANDEMIC

Pedro A. Villarreal

Senior Research Fellow, Max Planck Institute for Comparative Public Law and International Law

1. Introduction

1. At a press conference on February 26, 2020, the World Health Organization (WHO)'s Director-General, Tedros Adhanom Ghebreyesus, warned that the word "pandemic" was ill-suited to describe the ongoing spread of COVID-19.¹ He expressed concerns about the fear-mongering effects of using the term. Instead, he urged all countries to "prepare for a potential pandemic." At that moment in time, the disease was already present in all the continents of the world except Antarctica.² According to the organization's reports of that day, there were more than 80,000 confirmed infections and 2,762 confirmed deaths worldwide, with the virus confirmed in 37 countries outside of China. But technically, according to the WHO, the world was not yet facing a pandemic.
2. Later, at another press conference on March 11, 2020,³ the WHO Director-General declared that the conditions had been met to deem COVID-19 to be a pandemic. By then, there were 118,319 confirmed infections and 4,291 confirmed deaths globally – only Antarctica remained free of contagion. It is unclear what had factually changed about the virus between February 26 and March 11 of 2020. In any case, the global nature of the disease was, on the latter date, undeniable. Given how many national governments would later quote this declaration, for all practical purposes the world was now facing the COVID-19 pandemic.
3. The WHO Director-General's statement that COVID-19 is a pandemic brought no discernible legal consequences for the international community of states. It is unclear to what extent it marked a watershed in the chronology of the disease. In fact, the statements described above had been issued after an initial declaration on January 30, 2020, that the spread of the disease then known as nCoV-2019 was a public health emergency of international concern (PHEIC). As opposed to the term 'pandemic,' a PHEIC is a legal category deriving from the International Health Regulations (IHR 2005), the main legally binding instrument to "prevent, protect against, control and provide a public health response to the international spread of disease," as stated in its Article 2.⁴
4. The lack of a concise and operative legal definition of a pandemic was manifest in the first stages of the COVID-19 crisis. Keeping this gap in mind, this ESsay provides an initial basis for future discussions of the elements that might comprise the definition of a pandemic for the purposes of international law. Two central driving factors at stake are the need for providing certainty, on one hand, and the required flexibility that may capture future events the dimensions of which are currently unforeseeable, on the other hand. Such a definition would, ideally, fulfill a descriptive role by providing a tool for framing events such as the global spread of a disease, as well as a normative one by triggering specific acts by the international community of states as expressed in legal obligations.

2. Pandemics and PHEICs: The Specific vs. the General

5. At the outset, the current contribution distinguishes between the general use of the term “pandemic” and its more formal institutionalized use. The focus is on the latter, in so far as it is a definition that, when employed by certain qualified actors, *i.e.*, those with a specific authority for doing so, leads to a set of legal consequences.
6. The terminological challenges related to formulating a definition of pandemic are well-known in debates within legal theory. As posited by H.L.A. Hart when discussing “borderline cases,” there are facts that may fall within a penumbra regarding the application of general rules to specific cases.⁵ Making a definition more concrete for the sake of clarity may come at the expense of leaving events which do not follow pre-established patterns beyond its reach and scope.
7. The term pandemic is meant to convey, under all circumstances, the fact that a disease has a global presence, but aside from this geographical dimension, scientific consensus amongst the medical and public health community on the term’s components is conspicuously absent.⁶ This partly explains why the challenge of formulating a clear-cut definition begins already in its disciplinary pedigree. Needless to say, any future legal definition of a pandemic must have a solid epistemic basis stemming therefrom.
8. The WHO currently includes an institutional definition of pandemic within its non-binding influenza guidelines. According to this institutional framing, an influenza pandemic is present when “an influenza A virus to which most humans have little or no existing immunity acquires the ability to cause sustained human-to-human transmission leading to community-wide outbreaks. Such a virus has the potential to spread rapidly worldwide, causing a pandemic.”⁷ The definition is based on pre-existing insights, according to which the influenza virus was seen, as recently as in 2019, as the likeliest source of a pandemic event.⁸
9. By contrast, PHEICs are defined in Article 1 of the IHR as “an extraordinary event which is determined ... (i) to constitute a public health risk to other States through the international spread of disease and (ii) to potentially require a coordinated international response.”⁹
10. While not all PHEICs are pandemics, all communicable disease pandemics would constitute a PHEIC. These two definitions fulfill overlapping, yet different goals. Declaring a PHEIC is aimed at conveying a message to the international community, namely that a disease-related event occurring in the territory of one State may pose a risk to other states. Therefore, a disease outbreak may constitute a PHEIC even though at the moment there is no active cross-border spread. This is enshrined in the definition under Article 1 of the IHR 2005 and has been a criterion used to denote previous emergencies. Consequently, these declarations incorporate an *ex ante* perspective, by tackling scenarios even before their full extent can be known.¹⁰
11. Conversely, the WHO’s existing definition of a pandemic mostly fulfills a descriptive purpose, as it communicates the active presence of a communicable disease in multiple regions of the world. It is an assessment of ongoing facts, rather than a risk-based analysis. Therefore, these two definitions operate at different conceptual levels.
12. Similarly, both terms are plagued with conceptual vagueness¹¹ which, in turn, confers a higher degree of discretion upon the one person with the formal task of their declaration: the WHO

Director-General. In the case of PHEICs, deliberations within Emergency Committees, the *ad hoc* body tasked with advising the WHO Director-General in deciding whether an event constitutes a PHEIC,¹² reflect the consequences of such vagueness. Despite the fact that they lead to no new legal obligations by themselves, delays in previous PHEIC declarations have been criticized. A reluctance by the Emergency Committee to declare a PHEIC during the Ebola outbreak of 2018–2020 in the Democratic Republic of the Congo (DRC) was the focus of scholarly scrutiny. The reasoning provided by the members of the Emergency Committee for this decision was contradictory. Despite having a “high risk of regional spread,” the spread of Ebola in the DRC was initially not considered to be a PHEIC because it would bring “no added benefit.”¹³ Instead, the Committee deemed the criteria was met only after the virus was identified in the city of Goma, a major trade and transport hub. As pointed out by other legal scholars, such an interpretation of the PHEIC definition provided in Article 1 of the IHR 2005 is questionable.¹⁴

13. Elsewhere, the binary nature of PHEICs has been considered to be problematic.¹⁵ Disease outbreaks at the international level may currently be divided into emergencies or non-emergencies. A direct consequence is that events as diverse in nature as H1N1 influenza, the spread of Zika in the Americas – with comparatively low death rates but posing other types of health hazards, namely microcephaly in newborns – Ebola in West Africa and in the DRC, or even COVID-19 – the latter being the most devastating global health crisis in a century – are conflated. Even though they fall within the same legal category, each of them requires different types of responses. Article 17 of the IHR does provide an open framework for the WHO, and particularly its Emergency Committee, to decide on a case-by-case basis which health measures may be recommended for the emergency at hand. The tenets of global administrative law are a useful theoretical framing,¹⁶ since they explain how international institutions play an active role in specifying the range and scope of application of general norms to specific situations.
14. The uncertainties regarding PHEICs spill over to discussions over the term pandemic. As witnessed during the H1N1 pandemic of 2009–2010, arguably the first such event of the twenty-first century,¹⁷ the PHEIC declaration was not the focus of concern. Rather, it was the declaration of the maximum-level of a pandemic per se that led to intense scrutiny. It led to thorough reports by an IHR Review Committee¹⁸ as well as by regional organizations including the Council of Europe.¹⁹ Therefore, even though the definition so far lacks a formally binding legal source, its usage carried major consequences.²⁰ Insights on this matter may be drawn from the literature on global governance, where the effects of legally non-binding acts can, at times, lead to more tangible consequences than those of binding ones.²¹

3. Revisiting Insights from Past Definitions of Pandemic

15. In the past two decades, the WHO has revised the institutional definitions of a pandemic in multiple occasions, most of them focusing on the influenza virus. In the first document of 1999, a pandemic was deemed to be present whenever a new subtype of the influenza virus “has been shown to cause several outbreaks in at least one country, and to have spread to other countries, with ... serious morbidity and mortality ... in at least one segment of the population.”²² It was divided into phases, where each would be attached to a series of indicators. These elements of the definition of a pandemic were restated in the following guidelines of 2005, by referring to the geographical spread of a new subtype of influenza that could lead to “high numbers of cases and deaths.”²³ Neither of these guidelines provided clear indication of what a “high” incidence or death rate would be.

16. Another set of pandemic guidelines was published in 2009 as the result of several meetings between 2007 and 2008. These guidelines found that a pandemic occurred when a strain of the influenza virus previously not present in humans acquired “a potential to spread worldwide.”²⁴ The shift emphasizing the geographical spread of a disease, whilst removing considerations of severity, raised eyebrows partly due to its poor timing, *i.e.*, just as the H1N1 influenza pandemic was starting to spread.²⁵
17. Moreover, establishing a precise threshold of severity carried its own risks.²⁶ There was a concern, in some estimations, that different waves could have varying degrees of mortality, much like the H1N1 influenza pandemic of 1918.²⁷ Thus, if declarations and their operational consequences were postponed because the first waves were mild, it might convey a false sense of security and result in unpreparedness for subsequent, more severe waves. Similarly, using numerical values to scale severity was seen by some as overambitious, since it might be asking for too much precision amidst uncertainty.²⁸
18. While these considerations help explain the changes to the definition, the fact that the 2009 H1N1 influenza pandemic was comparatively mild led to accusations of declaring the alert too soon.²⁹ Afterwards, new guidelines were issued in 2013,³⁰ which enshrined the current institutional definition in place since 2017.
19. As highlighted by the WHO Director-General’s statements in February and March of 2020, the lack of a clear-cut definition of a pandemic still leads to confusion when attempting to accurately depict globe-spanning events such as COVID-19. The international community of states would be highly benefitted by a common framing allowing them to respond in an appropriate manner. While the WHO was hesitant to use the term pandemic to describe the spread of COVID-19, once it did the message was loud and clear. To date, numerous national governments have quoted the WHO’s pandemic declaration in their own legal acts as a global turning point.³¹ They seem to subscribe to the notion that such a declaration, despite its lack of concrete legal effects, marks a before-and-after in terms of their own responses.
20. As for procedural elements, unlike a PHEIC, declaring a pandemic is not preceded by any institutional step. In 2009, in the case of H1N1 influenza, the WHO Director-General declared a pandemic after asking for the advice of the Emergency Committee. But it was pointed out that, in legal terms, the WHO Director-General is not required to consult the Committee, nor any other consultative body, before declaring a pandemic.³² Instead, the utterance of the term ‘pandemic’ in a press conference sufficed for officially labeling COVID-19 as such.³³ As posited below in section 4, additional procedural elements could increase the certainty that such a consequential decision is adopted only after consulting diverse stakeholders.

4. Pandemics and Law Beyond H1N1 and COVID-19: Towards a Timeless Definition?

21. Despite the existence of borderline cases, there is no doubt that COVID-19 fits any and all understandings of a pandemic.³⁴ Yet a lasting legal definition would need to take into account not only past and present, but also future events. Therein lies its operational purpose.
22. One consideration is whether these definitions should have not only descriptive, but also normative implications. In its descriptive dimension, a definition of pandemic would offer considerable benefits. By portraying the global dimension of a health threat, it could give states

proper warning of its consequences, even if a particular country or region is not heavily affected at the time of the declaration. The national-level responses triggered by a declaration could still be differentiated, taking into account diverging states of affairs as well as health system capacities. But the declaration itself could be an initial yardstick for assessing whether measures, particularly those restricting human rights, have a prima facie justification due to a global problem. Therefore, it could be a first basis for the assessment by international and regional human rights bodies of states' responses, particularly if the latter notify the suspension or derogation of specific rights.

23. Conversely, whether the definition of a pandemic should carry its own set of legal consequences is an open question. In the case of a PHEIC declaration, by stating that it potentially requires “a coordinated international response,” it has an inherent normative component, albeit a soft one. Elsewhere, it has been referred to as a clarion call capable of mustering international cooperation.³⁵ Yet the exact consequences of PHEIC declarations are, from a legal point of view, unclear.³⁶
24. Although PHEIC declarations do not create “new” obligations, states have embedded stakes in them. In official reports as well as in the secondary literature, the direct interest in the declaration of a PHEIC – or lack thereof – was expressed. Other authors have gone further, by arguing that a delayed declaration of an emergency should lead to the international responsibility of the WHO. This approach has been criticized due to its understanding that declaring a PHEIC amounts to “box-checking,” where its elements may be unequivocally ascertainable by any external observer.³⁷ These discussions show a concurrence on the major importance of declarations per se.
25. As for the consequences, national pandemic preparedness could be linked to the declaration of a pandemic by the international authority empowered to do so, *i.e.*, the WHO Director-General. But depending on the effects, pandemic declarations may lead to distorting incentives. The triggering of “dormant contracts” with pharmaceutical companies in 2009 was considered by several critics to be a potential influencing factor for declaring a pandemic.³⁸ Because these contracts directly led to major profits, it raised suspicions of conflicts of interest in the WHO’s internal decision-making.³⁹ Although subsequent investigations did not find evidence of any meddling by private interests in the decision to declare the maximum pandemic phase, a lack of transparency, including in the use of the term “pandemic,” was underscored as a major shortcoming.⁴⁰ Any future attempt at formulating an operative definition of a pandemic should take into account the potential for creating incentives that may distort institutional decision-making. Additionally, the pandemic declared in 2009 was due to the new strain of an already-known disease, influenza. Plans could be formulated beforehand with regards to the available pharmaceutical resources for known pathogens. At the same time, any effective definition must be capable of taking into account future events caused by a so-called “disease X,” *i.e.*, one caused by a pathogen currently not detected amongst humans (such as the “novel” coronavirus before December 2019).⁴¹ Since its consequences cannot be foreseen, a description with sufficient flexibility is needed.
26. Determining *ex ante* all types of public health measures triggered by a pandemic declaration may not be feasible, since doing so directly depends on the epidemiological features of a new disease, a matter not always foreseeable. Nevertheless, certain mechanisms can be devised for mitigating a pandemic’s economic impact. For instance, in past public health emergencies such as Ebola, the need for a scheme guaranteeing constant financing for pandemic response was underscored by an IHR Review Committee. Fundraising in the middle of a devastating global event carrying major economic burdens for all countries is not an efficient way to enhance responses. Instead, creating

a resource pool available once the declaration of a pandemic is issued would allow for the rapid disbursement of funds. This reasoning underpins the WHO's Contingency Fund for Emergencies,⁴² and the World Bank's Pandemic Emergency Financing Facility.⁴³

27. However, both of these existing financing models currently fall short during catastrophic pandemics such as COVID-19. The Emergency Programme operates under traditional, country-focused humanitarian allocation. It is not geared towards global threats that potentially affect all countries simultaneously. By contrast, while the Pandemic Emergency Financing Facility is disease-focused, meaning all countries could potentially have access to funds once certain requirements are met, its insurance-based design has been the subject of criticism. For instance, its thresholds regarding death tolls are formalistic and do not allow for exercising discretion. While both funds are aimed at response and not preparedness, delays in their release due to technical issues are counterproductive. The Pandemic Emergency Financing Facility's so-far untapped potential for providing a dynamic pool of funding should be reexamined.⁴⁴
28. Linking finances to pandemic declarations in the future should be accompanied by a clear awareness of the consequences. Vesting an international official with such power, specifically the WHO Director-General, entails resting a high degree of authority in one single person. Therefore, implementing clear procedural steps to ensure, to a minimum degree of certainty, that the decision to issue a declaration is correct and involving more stakeholders would help. Besides scientific input by way of an advisory body similar to the Emergency Committee, the WHO's Executive Board, composed of a group of thirty-four persons chosen by Member States at the World Health Assembly⁴⁵ meets every three years. The Board's functions include to "take emergency measures ... to deal with events requiring immediate action ... [and to] authorize the Director-General to take the necessary steps to combat epidemics."⁴⁶ Actions by the Board would provide enhanced representativeness of Member States. Input from representatives of other international institutions collaborating in different types of economic support would be directly relevant, such as the World Bank, the International Monetary Fund and the United Nations' Interagency Standing Committee.⁴⁷ And non-State donors should also be included, to the extent they are able and willing to rapidly disburse funds.
29. Lastly, in terms of national pandemic preparedness plans, enhancing the operational dimension of a future definition of "pandemic" should be joined by analyses of national-comparative law.⁴⁸ This would provide a clear indication of which authorities have legal competence in specific spheres, avoiding future legal disputes related to the distribution of powers. National pandemic preparedness plans could explicitly incorporate criteria on the steps to be taken by specific authorities in case a pandemic is declared. In the aegis of COVID-19, the WHO has emphasized that decisions on which public health measures to adopt should be taken at the "most local administrative level possible."⁴⁹ This follows a public health rationale, according to which community-wide measures to mitigate a pandemic must be implemented taking into account a series of situational elements determining their effectiveness, *i.e.*, population size, public spaces and, notably, existing health system capacities.⁵⁰ In the latter point, a comprehensive mapping of public health capacities in local levels of government, while a considerably daunting task, would provide an ideal overview of the global status quo regarding pandemic response.

5. Conclusion

30. The discussion above provided an overview of some of the conceptual challenges inherent in framing and developing a legal definition of a pandemic. Creating an operational definition of a pandemic capable of capturing ongoing events such as COVID-19, as well as future diseases the consequences of which cannot be foreseen now, would yield dividends for the international community of states. For the time being, considering the lack of consensus in medicine and public health, it seems to be a tall order. Nevertheless, whenever discussions move forward, an overview of the underlying challenges can be an initial stepping-stone. A look back at previous institutional iterations of the term pandemic is therefore a useful endeavor. Moreover, framing potential legal consequences attached to declaring a pandemic could already pave the way for a more elaborate mechanism guaranteeing diligent response. At the same time, it would provide states with increased clarity on the type of available international law mechanisms during pandemics. The least sustainable approach is waiting until acute health threats, such as COVID-19, are already ravaging the world.

WHEN CRISIS MEETS PREPARATION AND DISCIPLINE: SINGAPORE'S SUCCESSFUL RESPONSE TO COVID-19

Ayelet Berman

Centre for International Law, National University of Singapore Faculty of Law

Fong Han Tan

LLM, Georgetown University Law Center

1. Introduction

1. The results speak for themselves: nine months after the World Health Organization (“WHO”) announced that COVID-19 was a Public Health Emergency of International Concern, Singapore successfully contained the spread of COVID-19 within its borders. As of January 2021, Singapore has had approximately sixty-thousand cases, of which there have been twenty-nine fatalities. Since at least October 2020, there have been zero- or single-digit daily cases. Schools reopened in July 2020, and social and economic activity – although subject to social distancing and contact tracing rules – resumed operating under the “new normal” state.
2. What explains Singapore’s unbelievably successful response to this pandemic? In this paper, we identify and describe the following three main factors that have played key roles: pandemic preparedness, an assertive, public-health guided response to COVID-19, and Singapore’s unique political and social system.
3. As we shall layout below, pandemic preparedness has been key. Following the severe acute respiratory syndrome (“SARS”) pandemic in 2003, Singapore made significant investments in pandemic preparedness and committed to complying with the WHO International Health Regulations (IHR). Thus, when COVID-19 broke out, Singapore already had in place a developed public health and policy system to detect and respond to disease outbreaks.
4. Further, Singapore’s government, guided by science and public health, has taken an assertive and firm approach, applying the rules of the pandemic playbook. Among other measures, the government has undertaken tight border and incoming travelers’ controls to prevent the infiltration of infected people. It has also carried out large-scale testing, rapidly identified and isolated infected cases and their contacts, and has mandated mask wearing and social distancing. These measures have been strictly enforced and have been coupled with a transparent public communication model that has garnered broad public support. That being said, Singapore’s use of surveillance technology and its management of migrant dormitories have given rise to concerns over privacy and the rights of vulnerable populations, respectively.
5. Singapore’s effective implementation of these measures has been made possible by the country’s unique sociopolitical system, which is characterized by high levels of unity, coordination, pragmatism, and compliance.
6. The purpose of this Essay is to describe and better understand Singapore’s public health response to COVID-19. We first describe the political and social context (Section 2), and we then describe

the state of Singapore’s pandemic preparedness before COVID-19 (Section 3). Thereafter (Section 4), we describe Singapore’s policy response to COVID-19. Section 5 concludes.

2. The Political and Social Context

7. Before delving into the specific public health measures applied in Singapore, it is important to understand that Singapore’s coordinated and effective response has been made possible by the country’s unique sociopolitical system. This system has played a key and decisive role in the effective implementation of and compliance with public health measures. Indeed, the WHO Director-General has lauded Singapore for its ‘all-of-society, all-of-government approach.’¹
8. Since Singapore’s independence in 1965, the People’s Action Party (“PAP”) has continuously held a supermajority or in Parliament. An emphasis on meritocracy and pragmatism ingrained in the culture of the political party and of the civil service has allowed for real-time technocratic decision-making, expedient implementation, and strict enforcement of government health policies. There are also considerably fewer contradictory views or misinformation circulating on the status of the pandemic owing to Singapore’s regulations on freedom of speech and fake news, which – although criticized in other instances (a matter which is beyond the scope of this paper)² – has resulted in restrained behavior from the traditional media and social media outlets. As we describe below, this enabled the government to swiftly communicate accurate information, policies, and guidance to the public.
9. Furthermore, as a matter of social culture, Singaporeans tend to trust the authority of the government and are generally receptive to the government’s policies and measures. Thus, during COVID-19, there was no significant outcry or pushback to the government’s top-down approach. Most Singaporeans have complied with the restrictions imposed (which we address below).
10. While this paper focuses on the government’s response, community support from individuals and businesses has also been critical, whether by reassigning staff to the healthcare industry,³ or producing face masks and other essentials.⁴ These factors have contributed to plugging the supply gaps in the system, improving compliance with safety measures, and ultimately spreading social consciousness within Singapore society.

3. Singapore’s Pandemic Preparedness

11. While COVID-19 exposed certain gaps in Singapore’s pandemic preparedness (which we address below), overall, Singapore was relatively well prepared for the COVID-19 pandemic.
12. One of the main reasons for Singapore’s preparedness was its harrowing experience in 2003 with the SARS pandemic, resulting in 238 cases and 33 deaths within Singapore.⁵ The SARS crisis caused Singapore to invest significantly in pandemic preparedness. It also drove Singapore’s political commitment to comply with its IHR core capacity obligations.
13. Thus, when COVID-19 broke out, Singapore already had a developed public health and policy system to detect and respond to disease outbreaks. The level of Singapore’s preparedness was examined in two recently published external evaluations: the 2018 WHO Joint External Evaluation and the 2019 Global Health Security Index. The 2018 WHO Joint External Evaluation Report found Singapore to have a high level of preparedness and to be in good compliance with its IHR obligations. Singapore’s achievement on the 2019 Global Health Security Index, which assesses

the global health security capacities in 195 countries, has been lower, yet still relatively good at 24th place.

14. Below, we briefly layout the main findings of these reports regarding Singapore’s pandemic preparedness. We then provide some examples of the pandemic capacities that Singapore has developed and established in recent years.

A. External Evaluations

i. 2018 Joint External Evaluation (“JEE”)

15. Under IHR 2005, all States Parties are required to develop minimum core public health capacities to “detect, assess, notify and report events,”⁶ and to respond “promptly and effectively”⁷ to public health emergencies. Under the WHO’s IHR Monitoring and Evaluation Framework, Member States may voluntarily request an external investigation – through the joint external evaluation (“JEE”) scheme – of their compliance with IHR core capacity requirements.⁸ Based on the information provided by the Member States, the JEE mission, which is composed of external experts, reviews national capacities in the following four fields: preventing, detecting, and responding to an outbreak and other IHR-related hazards and points of entry. Under the JEE, these four topics are divided into seventeen technical areas (which are divided into forty-eight indicators) that cover matters such as national legislation, policy, and financing, IHR coordination and communication, national laboratory systems, surveillance, and more.⁹ The JEE scores each of the indicators and technical areas.
16. Singapore opted to undergo such an evaluation, and in 2018, the JEE issued its report.¹⁰ It found, on the basis of the information that Singapore had compiled, that Singapore had successfully passed the evaluation. The JEE team found that “Singapore had demonstrated strong leadership and a highly developed capacity to detect and respond to potential public health emergencies.”¹¹ It concluded that across the different technical fields, “Singapore has shown a high level of achievement in fulfilling IHR obligations.” Singapore received the highest or second highest score (5 = sustainable capacity and 4 = demonstrated capacity out of a scale of 0 through 5) in 96% of the indicators (65% of the indicators received the highest score, while 31% received the second highest score). This included high rankings in areas such as national legislation, policy, and financing, IHR coordination and communication, zoonotic diseases, the national laboratory system, food safety, and many more. The report highlighted the state-of-the-art facilities and the coordinated whole-of-government approach to pandemic response, allowing for comprehensive risk communication and multisectoral implementation of a pandemic response.¹²

ii. The Global Health Security Index (“GHSI”)

17. The Global Health Security Index (“GHSI”) is a nongovernmental initiative that was developed by the Nuclear Threat Initiative, the Johns Hopkins Center for Health and Security, and the Economist Intelligence Unit, in conjunction with an international advisory panel of twenty-one experts from thirteen countries. The GHSI assesses the global health security preparedness of all 195 countries that are party to the IHR 2005. The GHSI is based on 140 questions that are organized across the six categories of prevention; detection and reporting; rapid response; health system; compliance with international norms; and risk environment. In contrast to the JEE, which relies on information provided by Member States, the GHSI aims to be more independent, as it

scores each country by relying entirely on open-sourced information on the country's policies and practices.

18. The 2019 Report ranked Singapore 24th in the world, scoring 58.7 out of 100, behind the top-ranked United States of America, United Kingdom, and other Southeast Asian countries, such as Thailand and Malaysia.¹³ Singapore ranked very high on a few indicators, such as data integration between various sectors, risk communication, immunization and trade and travel restrictions. However, due to the lack of publicly available information,¹⁴ Singapore received scores of zero in other areas, such as exercising response plans, communications with healthcare workers during a public health emergency, and cross-border agreements on public and animal health emergency response.¹⁵ While this has led to calls for Singapore to increase its policy transparency (an issue that is beyond the scope of this paper),¹⁶ the low scores on these matters does not appear to reflect Singapore's true capacity. Indeed, the accuracy of the GHSI score has been called into question, as some states which received high GHSI scores – such as the United States and the United Kingdom – did not effectively respond to the COVID-19 pandemic (an issue which is also beyond the scope of this paper).¹⁷

B. Examples of Pandemic Preparedness

19. As is evident from the above, Singapore has developed many pandemic capacities. Below, we layout three examples of Singapore's pandemic preparedness, including the MOH Pandemic Readiness and Response Plan, designated pandemic public health facilities, and secured access to essential medical supplies.

i. Pandemic Readiness and Response Plan

20. In 2014, the Ministry of Health (MOH) adopted the *Pandemic Readiness and Response Plan for Influenza and Other Acute Respiratory Diseases*, which lays out the response plan in case of a potential pandemic.¹⁸ The purpose of the plan is to establish “an effective surveillance system to detect the importation” of a virus with pandemic potential and “to mitigate the consequences when the first wave hits.”
21. Under the plan and in accordance with the Homefront Crisis Management System (a national framework for coordinating government-wide planning and response during a national crisis), the Ministry of Health chairs the Crisis Management Group (Health), which supports a multiministerial committee on the operational issues of the pandemic.¹⁹ As discussed below, this structure has been relied on to coordinate Singapore's COVID-19 response.
22. The plan identifies that the pandemic response comprises the following components: surveillance,²⁰ management of suspected cases,²¹ infection control in healthcare settings, visitor control and temperature screening in hospitals, isolation and discharge criteria, handling of disease cases, border control measures,²² public temperature screening, contact tracing and quarantine,²³ social distancing,²⁴ medical treatment, pandemic vaccines, public communications plans,²⁵ and infection control.
23. The plan determines that in the case of a disease outbreak, the extent of the measures applied shall be gradual and made based on the extent of the public health impact. To this end, Singapore established the Disease Outbreak Response System Condition (“DORSCON”) framework. Under

this framework, the extent of the government’s response will depend on the DORSCON level determined.²⁶ The framework has four DORCSON levels, i.e., green, yellow, orange, and red.²⁷ The Ministry of Health determines the DORCSON level based on the outbreak’s public health impact, taking into consideration diverse factors such as the severity of the disease or its transmissibility, availability of preventive interventions, geographical spread, recommendations of the WHO, and more.²⁸

Table 1: DORSCON level indicating the severity of the local pandemic situation

DORSCON Level	Public Health Impact
GREEN	Negligible to low
YELLOW	Low to moderate
ORANGE	Moderate to high
RED	High

24. This framework also separates the pandemic response into the following three phases: alert, containment, and mitigation.²⁹ Within each of these phases, the extent of the pandemic response measures applied depends on the DORSCON level.
25. The plan also highlights several planning assumptions that could serve as guidance for policymaking during a pandemic. These assumptions cover estimated durations for how long it would take to confirm the pandemic strain and when subsequent waves of infection may be expected.³⁰ Apart from these, however, the plan recognizes that actual planning would require reference to “real-time information” during the pandemic itself.³¹

ii. Public Health Facilities: NCID and PHPCs

26. In 2019, Singapore established the National Centre for Infectious Diseases (“NCID”), a facility whose purpose is to strengthen Singapore’s capacity to prevent and manage infectious disease outbreaks. The facility houses clinical, laboratory, research, training, and outreach functions. To treat patients, the NCID is equipped with a screening center, isolation and cohort wards, laboratories with epidemiologic functions, ICUs, and operating theatres. The NCID can hold five hundred beds during outbreaks. It houses, among others, the National Public Health Laboratory, which heads the national laboratory network.³² As mentioned below, the NCID has played a central role in managing COVID-19, during which it acted as the main COVID-19 treatment and research center.
27. To reduce the load on public hospitals in case of an outbreak, Singapore has also established public health preparedness clinics (“PHPCs”). Through this scheme, some diagnostics and the treatment of mild cases may be referred to private and community healthcare facilities. As described below, these clinics have also played an important role in supporting the COVID-19 response.

iii. Securing essential medical goods and PPE

28. During the SARS outbreak, Singapore experienced a shortage of medical supplies and therefore invested in purchasing medical goods and health personnel training. For example, public hospitals procured more negative-pressure isolation beds.³³ The government also stockpiled personal protective equipment (“PPE”) and essential medicines that could last for a period of six months.

³⁴ Health professionals have also been trained to use the PPE correctly.³⁵ With the COVID-19 outbreak, this proved to be crucial.

29. To conclude, Singapore was relatively well prepared for a pandemic and was in high compliance with the IHR 2005 before COVID-19 broke out. In what follows, we examine Singapore's public health response to COVID-19 to reveal areas for both commendation and improvement.

4. Singapore's Public Health Response to the COVID-19 Pandemic

30. As laid out above, Singapore was relatively well prepared for a pandemic when the COVID-19 pandemic began and, at least in accordance with the JEE report, was in high compliance with the IHR. However, an actual outbreak will always differ from planning, and COVID-19 has been a particularly challenging pandemic, requiring rapid regulatory and political decisions in real time.

31. The purpose of this section is to examine the public health measures that Singapore has adopted to combat COVID-19. As we shall see below, Singapore has taken an assertive, public health guided response, playing very much by the pandemic response play book. This determined response has been well received by a cooperative public, which has been highly compliant overall. That being said, its use of surveillance technology and its management of the migrant dormitories have raised concerns about privacy and the rights of vulnerable populations, respectively.

A. Multi-Ministry Taskforce

32. Immediately upon the discovery of the first imported COVID-19 case to Singapore on January 23, 2020,³⁶ a Multi-Ministry Taskforce ("the Taskforce") coordinated by the Minister for Health and Minister for National Development was set up to coordinate a whole-of-government response to the COVID-19 outbreak.³⁷ This Taskforce is supported by governmental ministries and agencies and is organized based on the existing Homefront Crisis Management System in the Pandemic Readiness and Response Plan (addressed above).³⁸ This is in contrast to the SARS situation in 2003, when medical professionals and officials scrambled in disarray.³⁹ The Taskforce is comprised of Ministers and Senior Ministers of State from a range of ministries, including the Ministry of Communications and Information, Ministry of Manpower and Ministry of Education. This placed the Taskforce in a good position to observe the effect of the pandemic on all aspects of Singaporean lives. The Taskforce has directed the adoption and implementation of response measures, which address below.

B. Public Communication

33. From the outset, and very much like the government's approach during SARS,⁴⁰ the Taskforce regularly convened to provide emergency press conferences to inform the public of changes in and updates to its pandemic response approach, such as announcing the shift of the DORSCON level from yellow to orange (mentioned above) or in implementing new punitive regulations pertaining to COVID-19. Seeking to reach a larger audience, the Taskforce has also expanded its public communications to include social media and messaging applications, such as WhatsApp, Facebook Live, and YouTube.⁴¹ For example, daily updates on the COVID-19 situation are sent through WhatsApp to all who have signed up to receive updates.

C. Preventing Importation of Disease

34. Singapore's tight border and travel control have been key in preventing the infiltration of cases from abroad and in keeping cases within Singapore to a minimum. Singapore reacted rapidly when the first COVID-19 case was reported in Wuhan and imposed a tiered travel restriction, which increased in restrictiveness as infection rates rose.
35. Based on the *MOH Pandemic Readiness and Response Plan*, preventing the importation of diseases is the first port of call in the initial phase of an outbreak.⁴² Hence, when Chinese officials first reported cases of 'viral pneumonia' in Wuhan in early January 2020, the Ministry of Health swiftly imposed temperature screening measures at Changi International Airport for inbound travelers arriving from Wuhan.⁴³ They also issued a health advisory to travelers and members of the public to take precautionary measures, including wearing a mask if unwell and practicing good personal hygiene.⁴⁴
36. As the number of imported cases increased, the Ministry of Health started imposing more detection measures at the border. Travelers who exhibited respiratory symptoms were required to undergo COVID-19 swab tests at the checkpoint.⁴⁵ Subsequently, fourteen-day Stay-Home Notices ("SHN") were imposed upon inbound travelers, requiring them to remain at a dedicated hotel facility or home residence at all times. The SHNs were initially required only for travelers from more severely affected countries, such as the United Kingdom and the United States.⁴⁶ Since April 2020, all inbound travelers to Singapore are required to observe a fourteen-day SHN at dedicated facilities and undergo COVID testing.⁴⁷
37. When Singapore entered a partial lockdown, which the Taskforce named the 'Circuit Breaker' (see Section H below), nonessential inbound and outbound traveling was discouraged. Inbound travelers were also restricted.⁴⁸ To discourage Singaporeans from engaging in outbound travel, the government also prohibited the use of the national health insurance, also known as Medisave, for patients who contracted COVID-19 while traveling.⁴⁹ Moreover, to control the number of incoming travelers and prevent an influx of cases, all travelers (except for Singaporean and permanent residents) must obtain entry approval by a government agency.⁵⁰
38. The Ministry has continuously reviewed these travel restrictions and adjusted them based on the risk of importation. Presently, Singapore has implemented special travel arrangements with various countries that have successfully contained the pandemic.⁵¹ However, plans for special travel arrangements remain subject to ongoing assessment of the public health risk of the corresponding country. In November 2020, plans for a travel bubble (that is, travel that does not require a fourteen-day SHN) between Singapore and Hong Kong were deferred, as Hong Kong started to see a rise in COVID-19 cases.⁵²

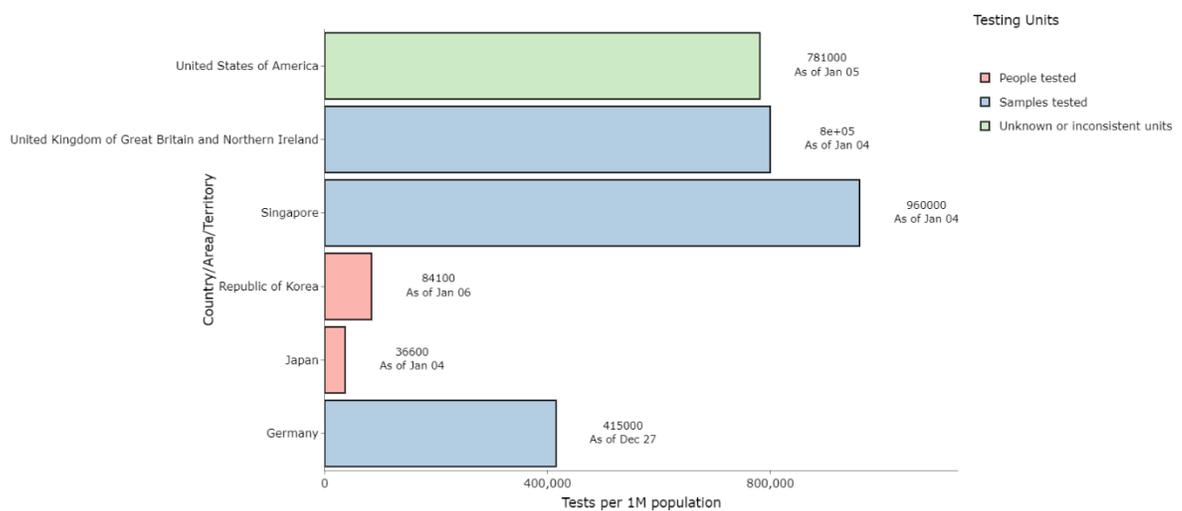
D. Detection and Testing

39. Singapore has been aggressively conducting tests to identify new COVID-19 cases. As part of its detection strategy, more than eight hundred public health preparedness clinics (mentioned above) have been activated to enhance the detection of potential cases. Swab tests are also available at these clinics under the Swab and Send Home ("SASH") program.⁵³ Clinics were instructed to test all patients presenting mild cold symptoms. All people awaiting the results of their COVID-19

tests – in clinics or hospitals – are instructed to self-isolate at home or to do so in such facilities while awaiting their test results.⁵⁴

40. To motivate potential patients to submit to testing, the government also initially bore the cost of all medical expenses related to testing and treatment. Subsequently, as the number of COVID-19 cases stabilized during the Circuit Breaker, Singaporeans were required to pay for their COVID-19 tests.⁵⁵ By June 2, 2020, four months after Singapore’s first COVID-19 case, Singapore had conducted more tests per million people than other countries, including the United States, Germany, South Korea, and Japan.⁵⁶ As of January 4, 2021, Singapore has conducted approximately 985,600 tests per million people⁵⁷ and continues to surpass other countries in the pro-rata number of tests conducted.

Figure 1: Graph comparing tests per million population across several countries⁵⁸



41. With an increased number of patients being tested, the Taskforce had to formulate sound triage plans to ensure that resources and manpower were optimally deployed. Hence, COVID-19 patients with mild or no symptoms were referred to the provisional community care facilities that had been set up to cater to COVID-19 patients, while severe cases were referred to hospitals.⁵⁹
42. In addition, the government also converted nonmedical facilities to meet medical needs. They refashioned government-owned holiday chalets and university hostels as isolation facilities for patients with milder symptoms.⁶⁰
43. Finally, Singapore’s biotechnological laboratories were tasked with developing antibody and other diagnostic testing to meet the demand for test kits in hospitals and clinics.⁶¹

E. Contact Tracing and Surveillance Technology

i. TraceTogether and SafeEntry

44. In addition to making testing available, the Singapore government has also introduced contact tracing and community surveillance capacities to proactively detect new cases. During the SARS epidemic, the experience of having “superspreaders” who were primary sources of infection for multiple local transmission cases highlighted the importance of such measures.⁶² Hence, when the

COVID-19 pandemic first broke out, Singapore quickly worked to establish an effective contact tracing system. Presently, much of the success in containing the spread of the virus within the community can be attributed to this system, which has rapidly identified and isolated infected people and traced their contacts.

45. Once a case is confirmed, hospitals and clinics pass on the details of the case to the Ministry of Health. The Ministry of Health then contacts the people who had interacted with the patient.⁶³ Close contact and lower-risk contacts were then placed under quarantine and phone surveillance for fourteen days. During these fourteen days, more than thirteen hundred personnel from the Singapore Armed Forces and the Ministry of Defense reached out to identified contacts of an infected individual via phone calls and refer those who report symptoms to hospitals.⁶⁴
46. These contact tracing efforts have been enhanced by the Singapore government's use of new technology, which has expanded the scope of contact tracing and shortened the time taken to identify the close contacts of an infected individual.⁶⁵ The Government Technology Agency ("GovTech") has developed two main applications, i.e., TraceTogether and SafeEntry. Businesses are mandated by law⁶⁶ to display the SafeEntry QR and/or TraceTogether code at the entrance to any facility.⁶⁷ Entry to any facility or business – schools, malls, restaurants, apartment buildings, and so forth – is only permitted to individuals (aged seven and above) who have signed in through these applications (or, for those without an application, by registration of their identity card number). Upon exiting the facility, individuals sign out. These records are then used to identify individuals who enter the premises at the same time as an infected individual.
47. The TraceTogether program comprises both the TraceTogether mobile application and token. Both utilize Bluetooth technology to identify people who were within a close range of confirmed COVID-19 patients for sufficient durations of time.⁶⁸ Individuals can choose between using the mobile application, which was first rolled out for voluntary download in March 2020,⁶⁹ or the physical tokens that have been distributed by Community Centers and Residents' Committee Centers since October 2020.⁷⁰
48. While subscribing to this program is voluntary, it will eventually be de facto obligatory,⁷¹ since the Singapore government announced that TraceTogether will be mandatory to enter places such as restaurants, shopping malls, or schools.⁷² Indeed, as of January 4, 2021, about eighty percent of Singapore residents were using TraceTogether.⁷³

ii. Surveillance and Privacy

49. Although such surveillance technology assists in containing the pandemic, many commentators warn of the slippery slope risk to privacy and democracy.⁷⁴ In particular, the use of such technologies by the government gives rise to concerns as to how the Singaporean government will use the data collected.
50. With the introduction of the TraceTogether and SafeEntry applications, the government repeatedly assured the public that they were both developed strictly for the purposes of contact tracing and will provide minimal intrusion into citizens' privacy.⁷⁵ Indeed, according to the TraceTogether privacy statement, both the application and the token are designed to store limited personal data, and only three identity data types are collected: contact number, identification details, and a random anonymized user ID.⁷⁶ TraceTogether also does not collect GPS location.

⁷⁷ The data is stored on the device and not on a server, and data will only be handed over to the Ministry of Health if the individual is a confirmed COVID patient.⁷⁸ Furthermore, individuals can request that their identification data be deleted from the GovTech server.⁷⁹

51. In January 2021, however, it was revealed that such contact tracing data could still be used by law enforcement agencies for criminal investigations under the Criminal Procedure Code,⁸⁰ and that data obtained from contact tracing had been used in a murder case.⁸¹
52. This revelation gave rise to parliamentary debates and led to a decision to adopt a Bill regulating the use of contact tracing data. Within about one month, in February 2021, a bill which expanded the right to use the contract tracing data for criminal investigations – the COVID-19 (Temporary Measures) (Amendment) Bill, was adopted through a fast-tracked procedure.⁸² Under the bill, contact-tracing data is to be used “only to carry out or facilitate contact tracing”,⁸³ except for criminal investigations into certain “serious offences.”⁸⁴ The Bill sets out seven categories of serious offences including the possession of dangerous weapons, terrorism, culpable homicides, drug trafficking, escape from legal custody, kidnapping, and serious sexual offences.⁸⁵ In these investigations, a law enforcement agency may assess contact-tracing data (from both TraceTogether and SafeEntry). The Bill further adds that any unauthorized disclosure or improper use of personal data is punishable with a fine of up to S\$20,000, or imprisonment of up to two years, or both.⁸⁶
53. Members of Parliament opposing this bill voiced concerns that this could hinder public adoption of TraceTogether. The opposition party, Progress Singapore Party, urged that such data should not be allowed for criminal investigations, as it would ‘backtrack’ on the government’s original representations and would ‘erode public confidence’.⁸⁷ On the other hand, some considered that law enforcement agencies should not be limited in their ability to conduct investigations. One member commented that refraining from use of the data was akin to ‘walking past a bloody knife and ignoring it’.⁸⁸ Yet despite these unresolved policy concerns, because of the PAP supermajority in Parliament (addressed above) the Bill passed expeditiously.
54. Singapore’s utilitarian approach to privacy concerns brought about by contract tracing government surveillance should be understood within the context of its general approach to privacy from government– which is much more restricted than that prevalent in other democracies. Unlike the approach taken in the EU, under Singaporean law, privacy protection is driven by pragmatism and is “not... by the desire to defend data subjects.”⁸⁹ Further, unlike the US which protects privacy from the government under the Fourth Amendment,⁹⁰ the Singapore Personal Data Protection Act (“PDPA”) does *not* regulate public bodies.⁹¹ The highest court in Singapore has also rejected the argument for a constitutional right to privacy in Singapore.⁹² Instead, government entities are required to self-regulate based on a set of internal Government Instruction Manual on IT Management.⁹³ Safeguards for misuse of personal data collected by public bodies lie in criminal liability of the respective government employee.⁹⁴
55. Likewise, public sentiment did not take a turn for the worse since the revelation that contact-tracing data could be used for criminal investigations. While 350 members of the public have reportedly requested for their contact-tracing data to be removed from the Government’s server, more than eighty per cent of the population have either downloaded the TraceTogether application or collected the token at the time of writing.⁹⁵ Thus, an ingrained trust in the

government informs these social and cultural attitudes to privacy – in difference from the attitudes prevalent in other democracies.⁹⁶

56. Finally, the government assured that the adoption of the COVID-19 (Temporary Measures) (Amendment) Bill would not affect any government policies on the use of digital data in the future and that it was passed solely for the extraordinary circumstances of the pandemic.⁹⁷ Yet being still in the early stages of the application of these technologies, it remains to be seen how this will ultimately play out. In the absence of strong parliamentary opposition and constitutional legal protection of the right to privacy, further expansions to the government's use of the data remains a possibility.

F. Safe-distancing measures and masks

57. The Singapore government has also imposed safe-distancing measures. Since March 27, 2020, businesses and other facilities have been required to implement a seating distance of at least one meter apart for unrelated parties. Safe-distancing ambassadors have also been recruited and are deployed at various premises to remind members of the public to abide by these safe distancing measures.⁹⁸

58. Although the Ministry of Health initially relied on WHO guidelines that instructed against mask wearing, since April 2020, with the emergence of evidence of presymptomatic and asymptomatic transmission, the MOH legally mandates the wearing of masks from the age of two and above in all public premises.⁹⁹ The government also released stockpiled masks and distributed reusable cloth masks nationwide on three occasions.¹⁰⁰

59. In contrast to other countries around the world, the public has been very compliant with mask requirements. Given what we know about the critical role of masks in preventing the spread of the virus,¹⁰¹ such compliance has likely been key in preventing rapid spread.

G. Essential medical goods and PPE

60. As mentioned above, Singapore had stockpiled essential medical goods. This proved to be prescient given the global shortage of PPE and medical goods earlier in March 2020 owing to rising demand and panic buying,¹⁰² as well as export bans by key producers.¹⁰³ This ensured a steady supply of medical supplies for both public and private healthcare providers during the outbreak.¹⁰⁴ Furthermore, the government was able to release stockpiled face masks to retailers and the public to keep market prices down.¹⁰⁵

61. Nevertheless, stockpiling was insufficient as the pandemic dragged on. Many countries continued to apply export restrictions all the way through 2020.¹⁰⁶ Singapore also understood the importance of ensuring international trade flows and removing trade restrictions on essential medical supplies. The government thus negotiated with other countries to ensure that supply chains remained open.¹⁰⁷ As the pandemic dragged on, Singapore also relied on the internal production of medical supplies, such as ventilators¹⁰⁸ and face masks.¹⁰⁹

H. Lockdown and Phases of Reopening

62. Initially, seeking to reduce restrictions on trade and travel in line with the IHR, Singapore avoided entering a national lockdown. Instead, it focused on preventing the importation of cases and encouraging social distancing measures within the community.
63. Nevertheless, as case numbers continued to increase, public health experts considered that a partial lockdown was necessary to slow the spread of COVID-19.¹¹⁰ Thus, on April 3, 2020, as Singapore experienced a surge of new COVID-19 cases that were reportedly imported from Southeast Asian countries, the Taskforce announced a partial lockdown, named “Circuit Breaker.”¹¹¹ During the circuit breaker, businesses were instructed to move to telecommuting from home and all schools shifted to full-time home-based learning.¹¹² The taskforce released a list of essential services¹¹³ that were allowed to remain open. These included healthcare, social services, and other services required for daily living, including hairdressers and telecommunication services. The Circuit Breaker was extended once and ended on June 1, 2020.¹¹⁴
64. Upon the conclusion of the Circuit Breaker, the government published its plan to resume activities in three phases, depending on the state of the pandemic, with each phase relaxing more social-distancing restrictions. Phase One of reopening lasted for almost three weeks (until the beginning of Phase Two on June 18, 2020).¹¹⁵ During Phase One, seventy-five percent of the economy, including schools, resumed operations, yet many social and recreational activities remained unavailable. In Phase Two, the entire economy was reopened. Consumer and recreational activities were resumed, subject to a cap of five people in each gathering.¹¹⁶ However, activities that require large gatherings, including religious and cultural events, remained unavailable.¹¹⁷ On December 28, 2020, Singapore entered Phase Three.¹¹⁸ At this stage, the allowable size of gatherings was increased from five to eight people. Religious and cultural activities are also permitted if participants were segregated in zones of fifty people. Phase Four – a return to normal – will only be entered upon the end of the pandemic.

I. Enforcement

65. The government’s strict enforcement approach has also been a key factor in Singapore’s achievement: The Singapore Government has adopted extensive legislation to enforce health and social distancing measures, coupled with strict penalties for violations. These regulations have been strictly enforced and publicized for deterrence purposes.
66. For example, during the Circuit Breaker period, the Parliament passed the COVID-19 (Temporary Measures) (Control Order) Regulations 2020, which imposed strict criminal penalties on individuals who defied quarantine and isolation orders. An individual who contravenes any of the provisions under the Control Order Regulations can be fined up to \$10,000 (approximately USD 7,500) and/or be imprisoned up to six months.¹¹⁹ Penalties for repeat offenders are doubled.¹²⁰ Furthermore, Section 64 of the Infectious Diseases Act makes it an offence for an individual to hinder or obstruct the contact tracing process. The penalties for a breach of Section 64 are like those under the control order regulations.
67. To reduce the possibility of transmission from travelers, travelers are, as mentioned above, required to isolate. They may be served a quarantine order where they may be legally required to stay at home or in a government quarantine facility, a stay-home notice where they are not allowed

to leave their place of residence for fourteen days, or a Leave of Absence, in which they are required to minimize their times spent in public spaces.¹²¹ Travelers who have breached SHNs, Leaves of Absence, or Quarantine Orders are in violation of the Infectious Diseases (COVID-19 – Stay Orders) Regulations 2020 and are subject to substantially the same penalties as under the Control Order Regulations.¹²²

68. For non-Singapore citizens, other administrative actions have also been taken, such as deporting them or revoking their work permits and passes.¹²³ In a widely publicized case, Singapore refused to renew the permanent residency status of a resident who had breached an SHN and permanently barred him from re-entry.¹²⁴
69. Nevertheless, people's willingness to cooperate has been not only a result of strict enforcement but, as mentioned above, also very much a result of an ingrained culture that tends to be compliant with government policies.¹²⁵

J. Migrant Workers

i. The Migrant crisis

70. Inasmuch as Singapore has been relatively well prepared for the pandemic, there was one major blind-spot that had been overlooked and with which it had been less prepared to deal with, and which at one point seriously threatened the containment of COVID-19. This was the crowded living conditions of more than three-hundred thousand migrants living in dormitories.¹²⁶
71. The largest spread of COVID-19 clusters in Singapore has by far been among migrant workers living in dormitories; at the peak of the outbreak, in April 2020, over one thousand daily cases were detected.¹²⁷ At the time of this writing, of the 58,320 cases that tested positive in Singapore, 54,505 were migrant workers.¹²⁸ In other words, almost ninety-five percent of all infected people within Singapore have been migrant workers living in dormitories.
72. The reasons for the fast spread of COVID-19 in this community is their living conditions. The dormitories house approximately twelve to sixteen beds per room, allowing each individual to have 4.5 sqm of living space. Approximately fifteen individuals share one toilet, bathroom, and sink.¹²⁹ Migrant workers also have little access to health insurance.
73. Although pandemic preparation plans had not included any migrant-specific planning, when the number of confirmed cases in the migrant workers community and dormitories started to significantly increase, the government responded rapidly. It set up an interagency taskforce,¹³⁰ which directed a containment and rapid detection strategy in all dormitories. Any worker who reported being sick or showed symptoms of acute respiratory infection was isolated and given medical care.¹³¹ Workers also had daily temperature and oximeter readings¹³² and were monitored by medical teams that were either roving¹³³ or set up in their dormitories.¹³⁴ As the number of cases in the dormitories continued to rise, dormitories where COVID-19 clusters emerged were progressively gazetted as isolation areas; workers living in the dormitories could not freely access to community.¹³⁵ Within the dormitories, safe-distancing measures preventing intermingling between residents of different blocks were also implemented.¹³⁶ While such measures could not immediately contain the spread within the dormitories in part because of the cramped conditions of the dormitories,¹³⁷ it did manage to prevent a spill over into the broader community, and cases

outside of the dormitories have remained at a low level with fewer than four thousand cases. The isolation for migrant workers living in dormitories continued as Singapore entered the Circuit Breaker from April to June 2020.

74. In that time, the Ministry of Health also began conducting mass testing for all migrant workers using the polymerase chain reaction (“PCR”) test. Initially, these tests prioritized migrant workers who worked in essential services to allow them to resume work earlier.¹³⁸ Subsequently, in June 2020, the Ministry of Health started systematically testing all migrant workers using serology testing,¹³⁹ which helped to distinguish those who were currently or newly infectious from those who had recovered from their infections but were still shedding noninfectious viral fragments. Those who had recovered but were still shedding viral fragments (serology-positive) were isolated for a seven-day period,¹⁴⁰ while those who had tested serology-negative were isolated and observed for fourteen days in case they were asymptomatic patients.¹⁴¹
75. During the Circuit Breaker, migrant workers who had been tested and cleared of COVID-19 were arranged to stay in separate dormitories. Those who worked in essential sectors were also allowed to work during the Circuit Breaker, while workers in other sectors were allowed to do so from June 2020 onwards if their employers had made safe living and working arrangements. Such safe living and working arrangements include staggered pick-up and drop off transport arrangements and recording of daily temperatures.¹⁴² By early November 2020, more than ninety-eight percent of migrant workers living in dormitories were cleared to resume work.¹⁴³ To continue detecting and containing new infections, the Ministry of Health still conducts rostered, routine testing of workers who are susceptible to infection.¹⁴⁴ It is also monitoring the antibodies of migrant workers who have recovered from COVID-19.¹⁴⁵

ii. The Rights of Migrants

76. The migrants’ crisis in Singapore is linked to the broader problem that the pandemic has exposed all around the world; and that is that this pandemic has taken an unequal toll on vulnerable communities¹⁴⁶ and that it has reinforced existing inequalities. In the Singaporean context, two main issues have arisen: migrant living conditions and movement restrictions.
77. First, the COVID-19 clusters in the dormitories brought mainstream attention to the living conditions of migrant workers¹⁴⁷ and the regular non-adherence of dormitories to the International Labor Organization’s (ILO) Housing Recommendations¹⁴⁸ and the Singapore Foreign Employee Dormitory Act.¹⁴⁹ This has also drawn disapproval from leading Singaporean voices.¹⁵⁰ For example, Singapore’s Ambassador-at-Large, Professor Tommy Koh had publicly expressed his disapproval with how migrant workers have been treated at the onset of the pandemic.¹⁵¹ Commentators have pointed out that the living conditions of migrant workers have been an ongoing issue that had hitherto received little attention.¹⁵² During the COVID-19 pandemic, it was apparent that the existing dormitories were insufficient to ensure that safe distancing was practicable within the dormitories. This was why the International Labor Organization (“ILO”)¹⁵³ and the United Nations Development Program (“UNDP”)¹⁵⁴ published recommendations to urge countries and businesses to ensure sufficient social distancing within these housing facilities during the pandemic. The government has now agreed to improve dormitory standards, limiting occupation to a maximum of ten beds per room, and requiring one toilet, bathroom, and sink for every five beds.¹⁵⁵ Over the next two years, the government will build eleven more dormitories.¹⁵⁶

While these reforms suggest improvement, the question of whether they are in line with international standards is beyond the scope of this Essay.

78. Second, despite Singapore being currently in the final phase of reopening, migrant workers remain subject to more restrictive movement conditions than the general population— an issue that raises concerns regarding their wellbeing, and has been criticized.¹⁵⁷ The government plans to start a pilot scheme in 2021 to allow some migrant workers to access the community once a month, using contact-tracing devices,¹⁵⁸ but this too has been criticized by migrant worker groups as being “shockingly restrictive.”¹⁵⁹ Indeed, while a large part of Singapore’s successful containment of the spread of COVID-19 could be attributed to the containment of the dormitory clusters, this has also subjected the dormitory-dwelling migrant workers to a greater number of restrictions. While there were NGOs which reached out to migrant workers when the dormitories were first placed under isolation,¹⁶⁰ this proved insufficient to ease workers’ existing anxieties concerning when they could start work, when they could return home, or of being infected.¹⁶¹ In August 2020, cases of migrant workers suicides and self-harm started to surface.¹⁶² In November 2020, an inter-agency taskforce was set up to provide mental health screening and counselling to migrant workers.¹⁶³
79. In all, Singapore’s experience shows that no one is safe from the virus in a pandemic and that protecting every individual matters in containing the spread. It has also highlighted the vulnerability of the migrant population and the need for better protection. These are important topics that deserve attention, yet addressing how these issues could or should be addressed goes beyond the scope of this paper.¹⁶⁴

K. Vaccination

80. Singapore has signed at least three Advanced Purchase Agreements for vaccines with Pfizer, Moderna, and Sinovac.¹⁶⁵ On December 21, 2020, Singapore received its first batch of Pfizer BioNTech COVID-19 vaccines.¹⁶⁶ However, vaccines must be approved by the Health Sciences Authority and recommended by the COVID-19 Expert Committee before being used in Singapore, and at the time of writing, only the Pfizer BioNTech has received interim approval by both bodies for use.¹⁶⁷ Even then, the HSA will continue to monitor the administration of the Pfizer BioNTech vaccine before granting full registration.¹⁶⁸
81. Vaccination is voluntary but highly encouraged. As recommended by the Expert Committee, the vaccine will first be offered to frontline and healthcare workers, followed by the elderly and other persons more vulnerable to severe disease and complications in case of infection.¹⁶⁹ As of March 17, 2021, 792,423 doses have been administered, with 243,169 receiving their second dose.¹⁷⁰ Healthcare workers and seniors have begun to receive vaccinations.¹⁷¹ According to the Health Minister, migrant workers will receive the vaccination after these two groups.¹⁷² Within the migrant workers population, the government also plans to segregate them into groups, prioritizing those who are more exposed to potential infections. More details are expected to be published later.¹⁷³ There are plans to completely vaccinate the country by the third quarter, or latest by the end of 2021, bringing the prospect of a return to normal life.¹⁷⁴
82. Internationally, Singapore is also participating in the COVID-19 Vaccine Global Access (“COVAX”) Facility. COVAX is an initiative under the WHO Access to COVID-19 Tools Accelerator initiative that seeks to accelerate the development and procurement of vaccines and ensure its equitable distribution to low-income countries. Currently, seventy-six developed

countries have joined the COVAX Facility, including the United Kingdom, Canada, and China.¹⁷⁵ Ninety-two lower-income countries are also supported under the advance market commitment (“AMC”) mechanism.¹⁷⁶ Singapore has contributed US \$5 million to the COVAX AMC.¹⁷⁷ Singapore also cochairs the Friends of COVAX Facility initiative with Switzerland to promote vaccine multilateralism¹⁷⁸ by catalyzing discussions about the COVAX Facility and generating support among self-financing countries.¹⁷⁹

5. Conclusion

83. Singapore has been highly successful at containing COVID-19. Out of more than sixty thousand cases, thirty deaths have been recorded,¹⁸⁰ and since the autumn of 2020, there have been no or very few cases transmitted within Singapore. Singapore has only gone into one lockdown. Schools, restaurants, and other facilities have gradually opened since July 2020, subject to social distance and contact tracing restrictions. On December 28, 2020, Singapore went into its last reopening phase, relaxing many of the limits at offices as well as cultural and business facilities. Once vaccination of the population has been completed by the third quarter of 2021, Singapore is set to largely reopen (at least domestically).
84. As we have argued in this Essay, Singapore’s successful response is a result of three main factors, *i.e.*, its political and social context, its pandemic preparedness, and its public health dictated governmental response.
85. As elaborated, Singapore has taken a firm and assertive response to the outbreak, which has been guided by science and public health principles, and has been very much ‘by the book.’ The government has tight control over incoming travelers and is quick to identify and isolate infected people and to trace their contacts. It carries out extensive and free testing, provides medical care, and mandates mask wearing and social distancing. It communicates the national COVID-19 response strategy clearly to the public and strictly enforces requirements and restrictions. Its vaccine strategy promises to provide vaccines for everyone by the third quarter of 2021.
86. Inasmuch as these measures have been critical, to understand Singapore’s success, it must be viewed within the broader context; the fact that Singapore had, as a result of its SARS crisis, significantly invested in pandemic preparedness and implemented its IHR obligations has been critical. Singapore has also been able to implement its response so effectively thanks to its unique political and social-cultural system. The top-down technocratic make-up of its legislative and executive branch has allowed for rapid, real-time, and science-based decision-making, as well as effective implementation and enforcement. This has been matched with high social compliance. People have been willing to take on restrictions and limitations, whether it was due to a matter of culture and a sense of social responsibility or out of fear of enforcement. Moreover, while this paper has mostly covered the Singapore government’s COVID-19 response, community support from individuals and businesses has played an instrumental role in the ‘whole-of-government, whole-of-society’ response.
87. Nevertheless, the COVID-19 experience has also exposed challenges in the country’s pandemic response. Singapore’s use of contact tracing technology gives rise to concerns over the protection of individual privacy from government surveillance. And its management of the migrant dormitories has brought to light the vulnerability of this marginalized population and the need for better protection.

UPDATING THE INTERNATIONAL HEALTH REGULATIONS: REVISING IHR DECISION INSTRUMENTS AND THE BINARY PHEIC DECLARATION SYSTEM

Rupa R. Patel

Division of Infectious Diseases, Washington University School of Medicine

Madaline George

Senior Fellow, Whitney R. Harris World Law Institute, Washington University School of Law
Membership & Program Officer, International Law Association (American Branch)

1. An Increasingly Urgent Need for Reform

1. In 2005, in response to the 2002–2003 Severe Acute Respiratory Syndrome (SARS) pandemic, the World Health Assembly¹ adopted the International Health Regulations (IHR 2005).² The Regulations, which replace their predecessor from 1969, aimed to modernize global health threat monitoring, reporting, and response with the hopes of reducing morbidity, mortality, and socioeconomic repercussions. The IHR 2005 require its 196 States Parties to notify the World Health Organization (WHO) of “all events which may constitute a public health emergency of international concern.”³ To accomplish this goal, the IHR include two key components, Annex 1 and Annex 2, which rely sequentially on each other, to calculate a potential global health threat. Annex 1 obligates States Parties to have the capacity for disease surveillance, to conduct urgent report assessment within forty-eight hours, and to effectively minimize spread. Annex 2 is a decision instrument for States’ National Focal Points (NFP)⁴ to determine if an event is required to be reported to the WHO (*i.e.*, is “notifiable”). All notifiable events must be reported within twenty-four hours if the threat meets two of four criteria. Once an event is reported, an Emergency Committee and the Director-General may declare a Public Health Emergency of International Concern (PHEIC), initiating a coordinated international response, including temporary recommendations such as trade travel restrictions to prevent international spread. Since 2009, the WHO has declared six PHEICs.⁵
2. As the only legally binding instrument regarding international disease prevention and control, the IHR play a key role in global health security. When the IHR 2005 came into effect in June 2007, it was widely hoped that this new document would remedy some of the problems its predecessor encountered. The IHR 1969 was unable to account for emerging infectious diseases which spanned beyond the six quarantinable diseases it was bound to, nor did it adequately define a process for global action to minimize spread.⁶ Yet less than two years after its adoption, the ineffectiveness of the IHR has been demonstrated by miscalculations during the Ebola and swine flu pandemics, as well as the current COVID-19 pandemic. These failures reveal similar limitations of the IHR 2005 to its predecessor in its inability to keep up with a dynamically changing environment, population growth and migration, emerging diseases, natural disasters, and other unpredictable situations.⁷
3. The novel coronavirus, SARS-CoV-2, which causes COVID-19, has claimed over 2.5 million lives worldwide since December 2019.⁸ The estimated death toll, thus far, is more than three thousand times higher than that of the SARS pandemic,⁹ and is expected to grow in the face of continued poor pandemic control and the development of several viral variants. It is widely accepted that the

WHO's declaration of a PHEIC on January 30, 2020, was a delayed response and resulted in valuable time lost to prevent international spread, deaths, and economic loss.¹⁰ Many reasons have been cited for this delay, but noteworthy concerns directly tied to the IHR include: (1) unsatisfied and difficult to attain core capacity requirements for surveillance and response (Annex 1); (2) a lack of clarity within the health threat notification decision instrument (Annex 2); and (3) the binary nature of PHEIC declarations. This paper will focus on each concern in turn.

4. The urgent need for IHR reform is evidenced by the expected annual increase in both the number and variety of threats requiring different detection system and responses. There is a roughly three percent chance that a pandemic could take place in any given year.¹¹ In 2015, the WHO established a priority list for which diseases could become the next pandemic and required more research.¹² Dozens of diseases have been identified as threats over the last thirty years.¹³ At least ten emerging and re-emerging infectious diseases¹⁴ (the majority of which have no efficacious curative or preventive solutions) are on the horizon and have the characteristics to result in outbreaks¹⁵ with serious global consequences, potentially wreaking more havoc than COVID-19.¹⁶ In evaluating the severity of these potentially catastrophic diseases, analysts must look not only to the number of possible deaths, but also to the socioeconomic repercussions posed by an outbreak, which can be devastating and long-lasting.¹⁷ One potential pandemic disease has been labeled as "Disease X" to signify that scientists anticipate not knowing all the specific diseases that are to come. As the volume of threats to evaluate increases, it is increasingly important that the IHR have a high statistical probability of accurately identifying true threats to global health security, as well as identifying events which do *not* pose a global risk.
5. Emerging infectious diseases are fostered by close interactions between (1) infectious agents or pathogens, (2) animal hosts and humans, and (3) the environment. They are increasingly driven by today's global urbanization, animal habitat encroachment, and the effects of climate change.¹⁸ SARS, H1N1 influenza, and the novel coronavirus, classified as zoonotic diseases, are examples of how pathogens emerged from animal reservoirs to cause human catastrophe. These pandemics and several historical disease outbreaks emphasize how the equilibrium of these factors directly impacts future global health security. Climate change's impact on health can be seen in disturbances in the seasonal patterns and geographic locations of disease-carrying insects (*e.g.*, mosquitoes, ticks, and flies). These vectors have caused unusual patterns of Zika, dengue, malaria, West Nile, and other emerging diseases worldwide requiring state-of-the-art surveillance systems and response capacities.¹⁹ Lastly, antimicrobial resistance, a byproduct of human behavior and our interconnectedness with animals and the environment, threatens our wellbeing in the context of a non-innovative antimicrobial development pipeline. The former remains absent from the IHR, further rendering the IHR insufficient to safeguard future international health security. Reforms must acknowledge the varied global health threats knocking at today's doorstep and the pace that they are arriving.
6. The One Health Approach acknowledges the transdisciplinary view – the interconnectedness of humans, pathogens, animals, and the shared environment have a role in instigating emerging public health threats – and, thus, promotes linked disease surveillance and prevention efforts within these three areas.²⁰ One Health more precisely addresses prevention of zoonotic disease, antimicrobial resistance, effects of climate change, food safety, environmental contamination, and a wide-range of other public health threats. One Health's integration into IHR's components, such as national core capacity requirements for surveillance and response, would be beneficial to global health security.²¹ Efforts have begun to include One Health approaches in pandemic response,²²

but further effort should be made to ensure this practice is commonplace, including by directly incorporating it into the IHR.

2. An Overarching Obstacle to IHR Compliance – Meeting Annex 1 Standards

7. A key aspect of the IHR 2005 is the requirement that member countries meet certain domestic benchmarks regarding their healthcare capacity. Though sanitary conventions have long required that nations maintain certain disease monitoring capabilities at ports of entry, the IHR 2005 were innovative in obligating nations to meet minimum standards for domestic healthcare and health infrastructure. Annex 1 provides “minimum requirements” that States must meet in order to effectively detect and analyze possible health threats. Among these requirements are that the State “establish, operate and maintain a national public health emergency response plan” and “determine rapidly the control measures required to prevent domestic and international spread [of disease].”²³
8. Annex 1’s minimum standards are designed to ensure that every WHO Member State has the basic operational capacity to fulfil its obligations toward its own people and toward the international community.²⁴ The IHR 2005 envisioned the attainment of minimum standards for domestic health systems in all Member States by 2016 at the latest.²⁵ Despite these aspirations, the most recent survey of State compliance showed that two-thirds failed to meet their Annex 1 obligations.²⁶ A recent review of 182 countries and their ability to respond to the COVID-19 pandemic revealed that countries’ capacities to prevent, detect, and respond to outbreaks varied widely. Only half of the countries reviewed had adequate operational readiness or adequate response enabling functions (resources and coordination aptitude).²⁷
9. Failures to meet capacity benchmarks by States Parties are not indicative of widespread indifference toward global health security. Instead, it should be seen as a consequence of a lack of necessary funding to meet IHR requirements in many low-income nations – creating weak links in the global system.²⁸ When national funding for new projects is available, immediate concerns often take precedent over long-term projects to improve healthcare infrastructure.²⁹ In some instances, corruption and mismanagement worsen shortages.³⁰ The result is felt both at home and on the international stage. Domestically, residents of countries that fall below IHR standards are less likely to receive adequate healthcare.³¹ Internationally, the lack of infrastructure causes gaps in global health monitoring and increases the risk that a novel disease may develop and spread before it is detected.³²
10. Although funding is not the focus of this Essay, it is a key obstacle to IHR compliance for developing and maintaining core capacity. No matter what changes are made to Annex 2’s algorithm for notification, financial reform to ensure that all Member States have the capacity to comply with Annex 1 and are therefore able to identify health events that may give rise to a notification under Annex 2 will be a necessary hurdle that the international community must address.³³
11. Even with financial reform, it is likely that resources – both financial and otherwise – will continue to fall short given the scale of the problem. Priority should be given to States with inadequate domestic capacity, which are also in geographic areas where future disease outbreaks are predicted, or which are emerging disease hotspots.³⁴ A data visualization platform containing national preparedness core capacities is being developed and has the potential to overlay these

characteristics to identify the regions where such a targeted approach could have the greatest impact.³⁵ While bolstering individual national capacity is important to achieve the IHR's goals, emphasis should also be placed on simultaneously building up inter-country and regional collaborations to achieve goals of global preparedness to prevent disease spread.

12. The global community is only as strong as its weakest partner; yet even those who technically met their Annex 1 competencies have struggled with COVID-19, suggesting it is time to rethink competency and preparedness.³⁶ The resources and know-how for detection, assessment, and response is complex. Detection involves modernized surveillance or disease monitoring systems, epidemiologic investigation, laboratory-based pathogen identification, scientific data documentation, and a specialized and sustained workforce with regular trainings.³⁷ Building external workforces to assist States Parties and their local stakeholders will continue to be important as the number of threats to assess grows. In turn, national players should strengthen reporting processes among local frontline workers who will likely witness unexpected or unusual clinical situations first. A recent report suggests that operational readiness capacity, enabling functions, emergency supply chain logistical management, and maintenance of essential health services during crises should be prioritized. Multidisciplinary teams are also crucial to pandemic response, and as such, investments should be made in garnering local expertise among epidemiologists, anthropologists, communication specialists, social behavioral experts, economists, and others so that disease spread is prevented to safeguard global health security.³⁸
13. Core capacity building must also acknowledge the wide ecosystem of actors who have potential to partake in the identification and notification processes. The current notification system within Annexes 1 and 2 only allows State actors to report events and does not permit external actors (such as NGOs) nor the WHO to assist with outbreak investigation without permission. This seems to have played a role in the delayed notification of COVID-19.³⁹ The IHR should make room for non-State actors to play a larger role in real-time detection, assessment, reporting, and response of events.⁴⁰ Although the IHR 2005's reporting time of forty-eight hours in Annex 1 and twenty-four hours in Annex 2 are already unrealistic in most instances, including more actors in the IHR reporting process would help, especially as we brace for a growing number of both infectious and non-infectious disease threats. The WHO should embrace and better train non-State actors to play a larger role in detection and monitoring.
14. Another proposal to strengthen national capacity seeks to engage frontline workers (ranging from health workers to laboratory staff responsible for reporting events to government officials) in capacity building efforts and developing country specific tools.⁴¹ Toolkits should be tailored to each country's epidemiology and event reporting processes to assist the local public health workforce to more accurately comply with Annex 1 and to aid in implementing Annex 2's protocols. The utility of this approach was demonstrated in a 2011 assessment of European countries which determined that local communication improvements and infrastructure changes were needed to facilitate compliance with Annex 2 reporting.⁴² This resulted in the development of several country-specific tools for patient-facing and diagnostic laboratory staff on what to report, the reporting process, and follow-up procedures. The toolkit included a corresponding guidance document for the relevant NFP and was accompanied by education and implementation plans. Scaling up and maintaining these country-specific initiatives should be prioritized when strengthening core capacities.

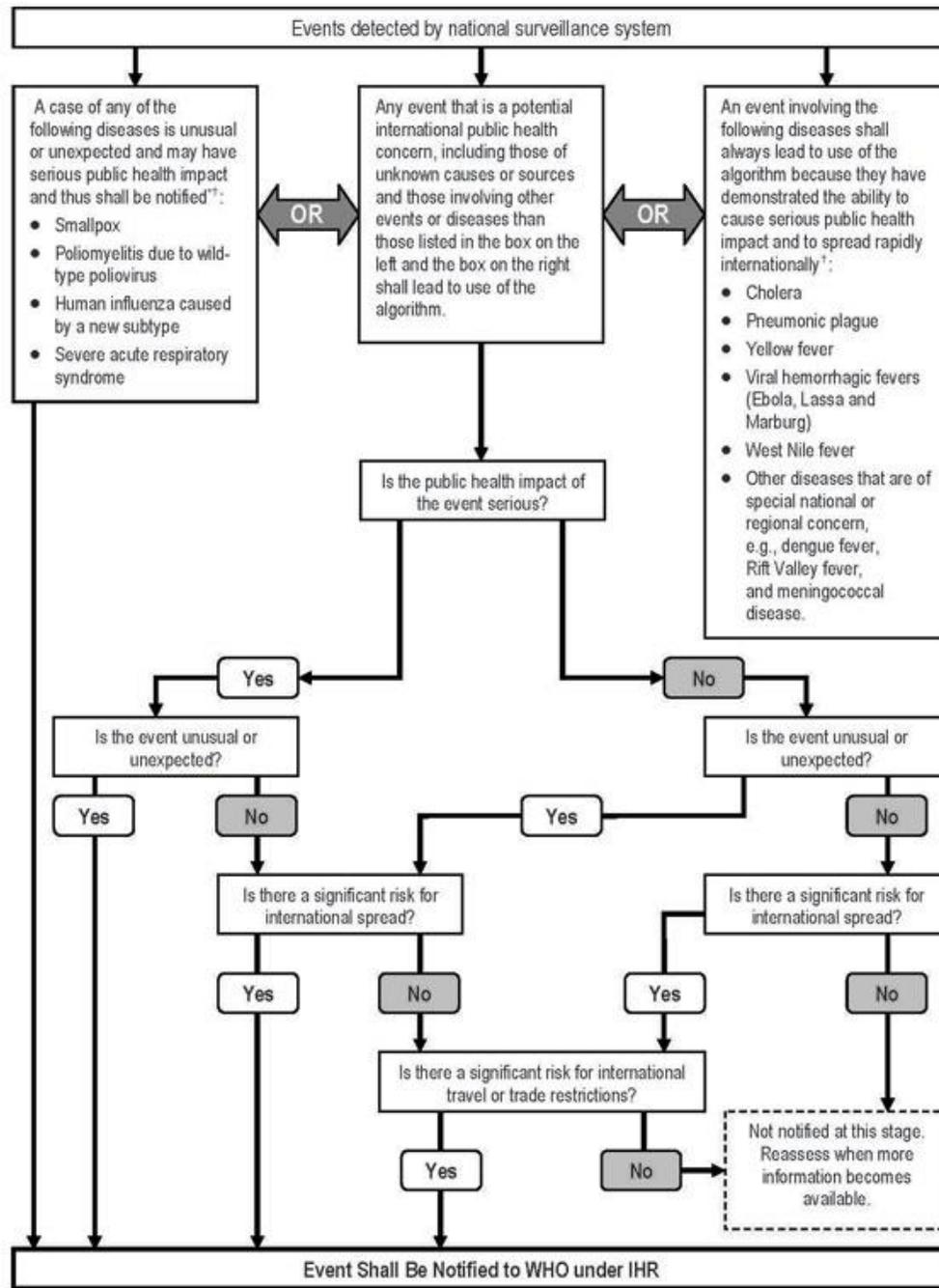
15. Core capacity requirements for surveillance and response should also incorporate the One Health Approach and transdisciplinary view of emerging threats. This would translate to linking several surveillance systems, laboratory detection modalities, transdisciplinary experts, and response programs attuned to arising public health dangers shared among animals, humans, and the environment. Incorporating this approach explicitly within Annex 1 requirements will ensure that a varied number of threats, ranging from environmental contamination to emerging zoonotic diseases, are accounted for within national and global detection and response capabilities. Furthermore, the One Health Approach potentially aids NFPs to accurately define potential threats as “unusual and unexpected events” as required in Annex 2. Coordination mechanisms for surveillance and response should be strengthened with the WHO, World Organization for Animal Health and the United Nations Food and Agriculture Organization to control disease spread among animal sources, which could worsen outbreaks and perpetuate transmission across borders.⁴³

3. Annex 2’s Limitations as a Tool for Identifying and Responding to Global Public Health Threats and Proposed Revisions

16. Having acknowledged the challenges posed by Member States in complying with Annex 1, it is nonetheless critical to focus on the tools countries use to determine if an event must be reported to the WHO under Annex 2, as well as the method of declaring health emergencies that pose a multinational threat. Despite its faults, the IHR 2005 did make some important changes from its predecessor. For example, it moved away from “disease specific” notifications to that of “any event,” which is broad enough to capture significant infectious or non-infectious health events. Yet while this revision permits the IHR 2005’s relevancy to future non-infectious public health threats, it also generated rather vague criteria for the four components⁴⁴ of a notifiable threat as outlined in Annex 2.⁴⁵ Annex 2 contains a flowchart to guide States Parties in determining when a health event has reached a level of threat severe enough to justify notification (within twenty-four hours) to the WHO.

17. Yet despite the importance of this algorithm, Annex 2 has been criticized as a decision-making tool for identifying notifiable threats. Tools such as this should have high sensitivity and positive predictive value, *i.e.*, they should allow NFPs to successfully use the tool to identify events that warrant notification to the WHO a possible PHEIC declaration.⁴⁶ If a large volume of threats is evaluated, as is anticipated in the future, then the tool should also have high specificity and negative predictive value (*i.e.* the ability to identify events that do *not* require notification), to avoid overburdening the system.

Figure 1: IHR Annex 2⁴⁷



18. At least three studies have assessed Annex 1 by studying the agreement of NFPs and experts when using Annex 2 on fictitious cases to determine if the event was notifiable.⁴⁸ Another report assessed Annex 2's language among States Parties and WHO regional offices.⁴⁹ Further studies are lacking on the robust validation of the decision instrument.⁵⁰

19. One study revealed there was (median) 81% agreement among NFPs and experts for the fictitious cases that required notification. However, agreement was low (median 55%) for the non-notifiable

cases.⁵¹ The study's authors recommended that to improve the reliability of case assessments by NFPs, Annex 2 needs further guidance on its use and clearer definitions of terms used to evaluate each criterion. The authors also suggested that the criterion, themselves, be revised. While acknowledging that the IHR 2005 is intentionally broad, "the lack of specificity of the decision instrument in Annex 2 leaves considerable room for users' perceptions, experience and knowledge to have an influence."⁵² Another study explained that "low specificity would result in an increase in false-positives results and increased costs associated with the notification process and determination of serious events."⁵³ In other words, Annex 2, as designed, opens the door for over-reporting cases, which can burden State Parties and the WHO, especially as the number of threats to review increases. This instrument would benefit from improved sensitivity in the detection of notifiable cases.

20. A second study, by Edelstein et al., compared an investigator's assessment of an event using Annex 2 with that of experts' analysis and found that a small number of assessed events missed the classification for notification, reflecting "challenges of predicting [the] evolution of an event as it occurs and [the] potential for human error."⁵⁴ This is concerning, as any instrument to be used in the IHR for identifying events with potential global consequences should *minimize* the chances of a Member State missing a reportable event. As the study's authors put it, "[a]lthough a sensitivity of 100% would be difficult to attain, maintaining the number of missed events at an absolute minimum should be a priority when the instrument is revised or evaluated."⁵⁵
21. A WHO technical consultation identified other challenges and misunderstandings related to Annex 2, especially as regards the time frames in which events needed to be assessed and notified.⁵⁶ There was also a lack of clarity among States Parties on whether notification required a laboratory-confirmed diagnosis (if so, it would likely result in States surpassing the established forty-eight hour limit for surveillance assessment and twenty-four hour timeframe for notification). The inclusion of criteria that meets benchmarks for data quality regarding detection, assessment, and reporting (*i.e.*, disease diagnostic criteria, laboratory-based identification) contribute to the gray areas of Annex 2's criteria. To foster the intended sensitivity of Annex 2 and facilitate early identification and assessment, the technical consultation called for some sort of early warning system and the establishment of a communication system where States Parties could alert the WHO of unusual situations.
22. These studies revealed that Annex 2's criteria lack clarity, creating the potential for missing notifiable cases and also over-reporting non-notifiable cases. Concrete solutions are needed to address this identified gap in Annex 2's accuracy. Edelstein et al. concluded that the first two criteria (*i.e.*, if the public health impact of the event is serious and if the event is unusual or unexpected) require more specificity and could benefit from clear definitions.⁵⁷ Guiding benchmarks for epidemiological concepts (such as "is the number of cases and/or number of deaths for this type of event large for the given place, time, or population?") could prove beneficial. Durrheim et al. point to Annex 2's "subjective considerations, such as restraints on international travel and trade" and the equal weight with which each criteria is considered, and instead recommend the establishment of "objective, evidence-based epidemiological and containment criteria."⁵⁸ A third study, by Anema et al., found that the NFPs surveyed considered Annex 2 to be restrictive to a narrow topic of infectious diseases threats,⁵⁹ thereby suggesting that other public health threats may not be captured by NFPs using the framework. Regular training of NFP staff is needed,⁶⁰ but even more so, this highlights that integrating the One Health Approach into Annex 2 would prove beneficial and could help the IHR 2005 maintain relevancy in the future. Of course,

any reform to Annex 2 must ensure that the criteria does not become too vague or nondescriptive, thereby replicating existing problems and leading to over- or underreporting of potential threats.

4. Limitations to the PHIEC Declaration System and Proposed Reforms

23. The WHO has two options when evaluating events reported by NFPs – either declare a Public Health Emergency of International Concern (PHEIC) or do not. Under the current governance of the WHO and IHR 2005, the PHEIC is the only threat level for health emergencies.⁶¹ Under Article 1 of the IHR, PHEICs have three criteria: (1) the event is considered extraordinary, (2) there is a risk to other states by international spread,⁶² and (3) international coordination is needed to control the outbreak. The WHO Director-General determines whether an event constitutes a PHEIC having considered information provided by the State Party where the event is occurring, advice from the Emergency Committee, “scientific principles as well as the available scientific evidence and other relevant information,” and “an assessment of the risk to human health, of the risk of international spread, and of the risk of interference with international traffic.”⁶³ Despite the IHR 2005’s attempt to systematize the PHEIC declaration process, the WHO has faced criticism on a variety of fronts each of the six times that a PHEIC has been declared.⁶⁴ A common complaint is that the all-or-nothing nature of the PHEIC declaration is problematic, resulting in several issues, including delayed and premature declarations.

24. Indeed, early in the COVID-19 pandemic, WHO Director-General Dr. Tedros Adhanom Ghebreyesus criticized the rigid nature of the all-or-nothing PHEIC declaration process and recommended that reforms should be considered, including a multi-tiered declaration approach.⁶⁵ At its first meeting regarding the novel coronavirus outbreak, the Emergency Committee “expressed divergent views on whether this event constitutes a PHEIC or not.”⁶⁶ The Committee did, however, acknowledge concerning information known about the virus that implied it could quickly have severe consequences in terms of morbidity and mortality for a large number of people when compared to other known viruses.⁶⁷ The Committee advised the Director-General that:

In the face of an evolving epidemiological situation and the restrictive binary nature of declaring a PHEIC or not, WHO should consider a more nuanced system, which would allow an intermediate level of alert. Such a system would better reflect the severity of an outbreak, its impact, and the required measures, and would facilitate improved international coordination, including research efforts for developing medical counter measures.

25. Despite the constellation of known concerning information (*i.e.*, rapidly changing situation, epidemiology evidence of current and predicted spread, a potential for under-diagnosed cases, clinical disease severity, and high human-to-human transmissibility), the Emergency Committee waited until the second meeting to declare a PHIEC. This decision (or lack thereof) led to a delay in mobilizing funds and preventing cross-border transmission. This situation is likely to reoccur and should be considered one of the highest priorities for IHR reform.

26. Under the existing system, declarations are seen as somewhat arbitrary and there is a lack of transparency in the decision to declare a PHEIC.⁶⁸ Not only are Article 1 criteria vague, but the process by which the WHO declares a PHEIC has been criticized for the use of “irrelevant considerations, undue influence and political interference,”⁶⁹ rather than strictly scientific determinations.⁷⁰ One of the first comprehensive analyses of sixty-six Emergency Committee

statements for the rationale of their PHEIC decisions found inconsistent rationale and haphazard application of Article 1 criteria. It was also unclear, and not regularly reported, which criterion had or had not been met.⁷¹

27. A scoring system, or other type of instrument, should perhaps be developed for use by the Emergency Committee and Director-General when evaluating reported events. Such an instrument could ensure fidelity to Article 1 criteria and encourage uniform definitions, as well as allow for the transparent documentation of information supporting or negating each criterion. Emergency declarations should have epidemiological criteria that are both objective and evidence-based, thereby removing the potential for subjective considerations that currently exist.⁷² Greater accuracy would also combat accusations of arbitrariness that have accompanied past PHEIC declarations. If the WHO could point to the ways which its system is backed by science, its declarations would gain greater credibility and legitimacy. Further transparency could be achieved through publishing meeting transcripts in a readily available public manner.⁷³ As the PHEIC process became less politicized and arbitrary, trust and compliance by member states may also increase.⁷⁴
28. Another problem stemming from the PHEIC system results from the stigma and economic and social consequences countries involved in a PHEIC declaration face, in no small part due to WHO recommended trade and travel restrictions, or those imposed by States even against explicit WHO recommendations to the contrary.⁷⁵ Fear of these repercussions disincentivizes States from reporting the initial outbreak and dissuades the WHO from subsequently issuing a PHEIC. One study reported that as many as 20–30% of the NFPs questioned stated that they did not want to notify the WHO of events due to the risk of negative consequences often attached to PHEIC declarations.⁷⁶
29. Many proposals to increase the accuracy of global health warnings, while decreasing the political risk of issuing them, center around implementing a tiered system of emergency declarations to replace the existing binary yes/no nature of PHEIC declarations. Although the number of tiers vary by proposal – with some envisioning only one level before a PHEIC and others proposing several tiers and a more nuanced warning system – they all aim to encourage early reporting of, and response to, serious disease outbreaks. These revisions may motivate more nations in the PHEIC identification and reporting process because they can potentially receive external assistance and related funding earlier in a crisis.⁷⁷
30. Existing WHO systems, such as the Emergency Response Framework (ERF), which guides the WHO's approach to determining an outbreak's risk, and the Pandemic Influenza Preparedness Framework and Response Plan, might offer some solutions. The ERF, for example, involves three grades: (1) limited oversight managed by a country's health system, (2) moderate oversight and external support, and (3) major oversight and external support.⁷⁸ Likewise, the WHO created a six-phase schematic (later revised to four-phases) depicting how a novel influenza virus grows from infecting a few humans to a global pandemic.⁷⁹ Each phase has a corresponding national program response and surveillance capacity goals, and defined the WHO's role for the specific stage.⁸⁰
31. Unlike the binary PHEIC declaration, these existing systems are able to reflect the rapidly evolving nature of a situation and the corresponding response needed. The more nuanced tiered approaches can capture both the progression of, and recovery from, disease outbreak, especially as more

epidemiological information becomes available. Integrating components of other pandemic control frameworks into the IHR could also provide greater uniformity across WHO alert systems and decrease confusion during disease outbreaks.⁸¹

32. In the same light, a tiered alert system would benefit the global community by more accurately reflecting the status of global health.⁸² By replacing the binary system with “an incremental mechanism that would enable intermediate stages for IHR-based alerts and guidance,”⁸³ the WHO could respond with more flexibility and coordination to novel or rapidly changing outbreaks. Outbreaks are rarely uniform across time or geographic region and a detailed, flexible system could more accurately capture the progression of a health threat.⁸⁴ For example, during the ongoing COVID-19 pandemic, the severity of the outbreak has varied greatly across geography and time; yet, the WHO’s PHEIC declaration has remained unchanged.⁸⁵ With a tiered system, the global health community could better track whether a situation was improving, stagnating, or worsening, and coordinate an international response accordingly. A tiered system may allow countries to keep up with how data is gathered and take into account the delays in data gathering and surveillance and the often-underreported nature of emerging public health threats.
33. The 2015 Report of the Ebola Interim Assessment Panel has likewise weighed in on the reform question.⁸⁶ Noting that the existing PHEIC determination involved a “single binary decision,” the Panel recommended “the possibility of an intermediate level that would alert and engage the wider international community at an earlier stage in a health crisis. This could facilitate preparedness, preventive action, and dedication of resources, which could avert an escalation of the situation.”⁸⁷ This intermediate category would assist in defining a situation between an outbreak and a PHEIC declaration and could open the door to proper monitoring and mitigation activities without the full consequences of a PHEIC declaration.⁸⁸ Different categories could also enable responses tailored to the capacities of the countries involved. Whereas certain national health systems may have the ability to manage an outbreak with limited or no outside support, other, more vulnerable countries, may require significant external assistance. In the latter, the situation “may even trigger the need for an emergency response under the emergency response framework,” which different response categories would permit.⁸⁹ A graded public health emergency notification system would consider the variations seen among different nations’ systems to identify, investigate, and mitigate threats internally and determine when they would need external assistance at an earlier stage of outbreak progression.
34. Other proposals envision more gradation.⁹⁰ A recent article by David Durrheim et al. suggests a three-tier system.⁹¹ In this model, a Level 1 PHEIC indicates outbreak in a single country with the potential to spread globally, requiring localized public health efforts to contain it. A Level 2 PHEIC involves limited spread in multiple countries, and a Level 3 PHEIC concerns ongoing transmission and non-limited spread in multiple countries. Each level is characterized by objective epidemiological criteria and a corresponding action plan.
35. The Berlin Institute of Global Health has proposed a “Scorecard for a Public Health Emergency of International Concern,” which includes a five-tier alert system.⁹² The scorecard itself is divided into three categories: (1) Detection and Surveillance, (2) Diagnostics and Treatment, and (3) Prevention, Preparedness, and Response. Each category has subcategories that are given a score of one through four. The overall score determines which of the five tiers is appropriate for the given situation: (1) national, (2) transnational (affected countries), (3) international (affected and neighboring countries), (4) global, or (5) global (more severe). In its effort to be objective, the

scorecard defines and integrates disease characteristics into the level of PHIEC grade, such as diseases that are easily transmitted (*i.e.*, human-to-human asymptomatic transmission, high attack rate, high reproductive number) and potentially more fatal (*i.e.*, high case-fatality ratio). Importantly, it also takes into account if there are postulated or known disease countermeasures (*e.g.* disease treatment options and vaccines for disease prevention). The scorecard has yet to propose the corresponding operational protocol after a score is calculated and the category of PHIEC is determined.

36. Although no international organization can entirely escape politics, the declaration of a PHEIC is particularly fraught because it is a “point of no return” – once a PHEIC is issued, there is no further legal category of emergency. By adding more tiers, the WHO could decrease the resources required, political and social labeling, and financial costs associated with an emergency declaration. Key to this type of reform is that each tier must be accompanied by clear operational protocols, strategies for regional and international cooperation during the response, a clear explanation of the WHO’s role and financing mechanisms. Lower-level tiers would be issued when an outbreak is relatively minor and could allow for the mobilization of financial and other resources, while typically not requiring trade or travel restrictions.⁹³ This would provide an incentive to work with the WHO and external partners early in a situation, and hopefully curtail a public health threat from progressing.⁹⁴ In addition to incentivizing reporting and cooperation, a tiered system has the benefit of appropriately distributing finite resources in a manner that reflects the level of threat an emergency pose at different stages of progression.⁹⁵
37. Yet, the tiered system is not without potential drawbacks. Additional tiers would increase the complexity of the IHR system, which could lead to further confusion.⁹⁶ Confusion easily leads to distrust and accusations of arbitrary enforcement. A tiered approach may unintentionally burden the WHO’s finite resources,⁹⁷ and domestic systems could become overburdened by a tiered reporting system in terms of costs, staffing requirements, and trainings to understand each tier’s reporting requirements and subsequent protocols. There is also a possibility that countries could also politically manipulate the WHO warning system. If countries do not see the benefit or have a “buy in” for the low-level warnings, they may be hesitant to report disease outbreaks or threats that appear to be in the early stages.⁹⁸ Additionally, warnings could be misused as a justification for otherwise discriminatory trade or travel policies, although this is a problem already suffered by the current system. Finally, if warnings are issued for too many situations, they run the risk of becoming overly pedestrian and losing their impact.
38. Further research, including community and stakeholder participation, is needed to determine the best revision to the IHR 2005’s binary PHEIC declaration system. Research should include but is not limited to: (1) how many tiers would improve the PHEIC declaration process *and* benefit the reporting process for member states, (2) what resources (*e.g.*, financial, staffing, trainings, etc.) would be required for successful implementation of a tiered PHEIC declaration approach, and (3) what are the distinct protocol pathways after a tier is defined? There needs to be a balance between the number of tiers added and the complexity and possible confusion each tier would bring. Cost-benefit analyses and modelling could be employed to understand the balance between overburdening the national and global system with early warning tiers versus reserving finite national and global resources for when a severe PHIEC is declared. The potential reduction or prevention in mortality and morbidity must be included in these calculations and estimations. Furthermore, estimations should account for the time until event notification with the goal that adding each tier should theoretically prevent delays in full or severe PHIEC declarations. Each tier

may bring a burden to society (financial and non-financial) but the counterfactual is how many lives will be saved in the long run if there are no delays in a full or severe PHEIC declaration.

39. The question remains of how to revise the IHR to remove the binary system. Developing a new IHR Annex decision instrument to replace Annex 2 would be advisable. Direct changes to Annex 2's decision tree will likely: (1) minimize the overall confusion by NFPs and other parties during the switch to a multi-phase PHIEC system, (2) better delineate what criteria are needed for which phase and then which operation protocol to subsequently follow, (3) help streamline national core capacity surveillance and response goals outlined in Annex 1 on which Annex 2 is dependent, (4) set up the process for successful training, creation of tools and other education aids (country-specific and generic), and implementation, and (5) establish accurate evaluation assessments regarding instrument reliability, sensitivity, and specificity. Developing an easy-to-follow decision instrument will accelerate State Party buy-in, field-level implementation among stakeholders, and reliable and consistent long-term use of the instrument as intended. Any revisions to the binary declaration system must be coupled with transparency, accountability, and flexibility for re-iterative revisions during the IHR process. Transparency and accountability should span the entire PHIEC declaration process – beginning from a State Party's detection of disease and activation of an early warning alert to the Emergency Committee's deliberations regarding which tier was decided upon and why

5. Conclusion

40. The current COVID-19 pandemic has revealed shortcomings in the systems we rely upon for global health security. The many failures witnessed across the globe during this pandemic, coupled with the increasingly prevalent threat of future global health threats, has brought into sharp focus the urgent need to reform the existing mechanisms by which the global community monitors, evaluates, and responds to such threats in order to prevent large-scale death and human suffering. Two key reforms should be prioritized: (1) the development of a non-binary PHIEC declaration system and (2) clarification to Annex 2's criteria for the evaluation of threats to improve sensitivity and specificity for event notification.
41. It cannot be overlooked, however, that the use of Annex 2 as a decision instrument (as well as the States ability to respond appropriately once a threat has progressed) depends on a Member State's core capacity for surveillance and response as outlined in Annex 1. Currently, far too many countries have weak public health systems that interfere with their ability to detect and assess emerging infectious and non-infectious disease events. Delays in detection result in the possibility that notifiable situations are not reported to the WHO in a timely fashion and hamper global responses to curb international spread. Non-State actors, frontline workers, and multidisciplinary teams should play a larger role to help Member States detect, assess, respond, and inform the WHO of developing crises through an established mechanism, accompanying training programs, and country-specific tools. Collective inter-State and regional cooperation to augment individual Member State surveillance and response capacities is paramount for sustained global health security.
42. The need to replace the all-or-nothing nature of PHEIC declarations has been well documented and offers several benefits. Such reform can make the IHR decision instruments and notification processes more closely align with the trajectory of infectious diseases outbreaks and the timeline in which information arises during international health crises. Creating a system that allows for an

early alert – coupled with an early response – has great potential to prevent morbidity and mortality, and with it, the devastating social and economic consequences brought about by public health emergencies of this nature. The world is under constant and increasing threat of the next disruptive global disease outbreak, making reform increasingly urgent.

Endnotes

EXECUTIVE SUMMARY

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FREDERICK ABBOTT, CHILD-PROOFING GLOBAL PUBLIC HEALTH IN ANTICIPATION OF EMERGENCY

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²⁰ WHO Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 Response, WHO, <https://www.who.int/teams/ihr/ihr-review-committees/covid-19> (last visited Feb. 15, 2021).

²¹ See PowerPoint presentation by Helene de Pooter, Panel on International Law and Global Health Emergencies: the teachings of COVID-19, 79th Kyoto Conference of the International Law Association (Dec. 9, 2020) (on file with the author).

²² The Independent Panel appears to have taken up the idea of employing a precautionary approach, which was suggested by de Pooter. *Id.* The concept of a link to financing from the IMF was raised by this author during the Panel proceeding, *id.*, though doubtless not a “novel” idea.

²³ See Frederick M. Abbott & Jerome H. Reichman, *Facilitating Access to Cross-Border Supplies of Patented Pharmaceuticals: The Case of the COVID-19 Pandemic*, 23 J. INT’L ECON. L. 555, 555–61(2020), <http://dx.doi.org/10.2139/ssrn.3656725>.

²⁴ See F. Abbott, R. Abbott, J. Fortunak, P. Gehl Sampath & D. Walwyn, Opportunities, Constraints and Critical Supports for Achieving Sustainable Local Pharmaceutical Manufacturing in Africa: With a Focus on the Role of Finance, Final Report, March 18, 2021 (Nova Worldwide), https://nova-worldwide.com/OSF-PHP_report.

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²⁷ Recall that one of the policy concepts underlying negotiation of the Convention on Biological Diversity was that governments would be encouraged to protect biological resources if a system of benefit sharing based on access to those resources was established. See Frederick M. Abbott, *Preservation and Use of Genetic Resource Assets and the International Patent System* (Mar. 31, 2005), reprinted in F. ABBOTT, T. COTTIER & F. GURRY, INTERNATIONAL INTELLECTUAL PROPERTY IN AND INTEGRATED WORLD ECONOMY 185–89 (4th ed. 2019).

²⁸ Glob. Health L. Comm. of the Int’l L. Ass’n and the Glob. Health Programme of the Graduate Inst. Geneva, Global Health Security Challenges: Towards Strengthening Global Governance: Summary of Feb. 19, 2015, Meeting (Mar. 6, 2015), https://frederickabbott.com/sites/default/files/Report%20on%20Global%20Health%20Security%20Meeting%20GH-LC-GHP_0.pdf.

²⁹ European Council Press Release 860/20, President Charles Michel on an International Treaty on Pandemics (Dec. 3, 2020), <https://www.consilium.europa.eu/en/press/press-releases/2020/12/03/press-release-by-president-charles-michel-on-an-international-treaty-on-pandemics/>.

³⁰ See, e.g., Jan van Aken & Edward Hammond, *Genetic Engineering and Biological Weapons*, 4 EMBO REPORTS 57 (2003).

LEILA NADYA SADAT, PANDEMIC NATIONALISM, COVID-19, AND INTERNATIONAL LAW

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² *Novel Coronavirus (2019-nCoV) Situation Report – 1*, WORLD HEALTH ORG., (Jan. 21, 2020), https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep-1-2019-ncov.pdf?sfvrsn=20a99c10_4.

³ Allyn L. Taylor, Roojin Habibi, Gian Luca Burci, Stephanie Dagron, Mark Eccleston-Turner, Lawrence O. Gostin, Benjamin Mason Meier, Alexandra Phelan, Pedro A. Villareal, Alicia Ely Yamin, Danwood Chirwa, Lisa Forman, Gorik Ooms, Sharifah Sekalala, Steven J. Hoffman, *Solidarity in the Wake of COVID-19: Reimagining the International Health Regulations*, 396 LANCET 82 (2020) (citing Chaolin Huang et al., *Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China*, 395 LANCET 497–506 (2020)).

⁴ Chang-fa Lo, *The Missing Operational Components of the IHR (2005) from the Experience of Handling the Outbreak of COVID-19: Precaution, Independence, Transparency and Universality*, 15 ASIAN J. WTO & INT’L HEALTH L. & POL’Y 1, 16(2020). The first confirmed case of COVID-19 occurred on December 1, 2019. Doctor Li Wenliang in Wuhan, China created a message group to discuss the novel outbreak with his colleague on December 30 but was accused of fear mongering and “subject to a police disciplinary measure.” *Id.*

⁵ *Novel Coronavirus – Thailand (ex-China)*, WORLD HEALTH ORG. (Jan. 14, 2020), <https://www.who.int/csr/don/14-january-2020-novel-coronavirus-thailand/en/>. Under the headline of “WHO risk assessment,” the report notes that “[b]ased on the available information there is no clear evidence of human-to-human transmission,” though “[a]dditional investigation is needed.” *Id.*

⁶ Mark Eccleston-Turner, *COVID-19 Symposium: The Declaration of a Public Health Emergency of International Concern in International Law*, OPINIOJURIS (2020), <https://opiniojuris.org/2020/03/31/covid-19-symposium-the-declaration-of-a-public-health-emergency-of-international-concern-in-international-law/> (noting that, by January 23, only four cases of coronavirus had been reported outside of China and that all four people “appeared to have travel history to the affected region”).

⁷ *WHO Coronavirus Disease (COVID-19) Dashboard*, WORLD HEALTH ORG. (last visited Feb. 13, 2021) <https://covid19.who.int/>.

⁸ *Id.*

⁹ *China, WHO Coronavirus Disease (COVID-19) Dashboard*, WORLD HEALTH ORG. (last visited Feb. 13, 2021), <https://covid19.who.int/region/wpro/country/cn>

¹⁰ *Global Outlook*, GLOB. ECON. PROSPECTS 1, 4 (Jan. 2021) (reporting a 4.3 decline in global GDP).

¹¹ See Lauren Tonti, *The International Health Regulations: The Past and the Present, But What Future*, HARV. INT’L L.J. (2020), <https://harvardilj.org/2020/04/the-international-health-regulations-the-past-and-the-present-but-what-future/>; Lawrence O. Gostin, Roojin Habibi & Benjamin Mason Meier, *Has Global Health Law Risen to Meet the COVID-19 Challenge? Revising the International Health Regulations to Prepare for Future Threats*, 48 J.L. MED. & ETHICS 376 (2020); see also Barry R. Bloom, Paul E. Farmer & Eric J. Rubin, *WHO’s Next—The United States and the World Health Organization*, 7 NEW ENG. J. MED. 676, 676–77 (2020) (rebuking the threat by the United States to withdraw from the World Health Organization); Pedro Villarreal, *COVID-19 Symposium: “Can They Really Do That?” States’ Obligations Under the International Health Regulations in Light of COVID-19 (Part II)*, OPINIOJURIS (Mar. 31, 2020), <http://opiniojuris.org/2020/03/31/covid-19-symposium-can-they-really-do-that-states-obligations-under-the-international-health-regulations-in-light-of-covid-19-part-ii/>.

¹² See, e.g., Ching-Fu Lin, *COVID-19 and the Institutional Resilience of the IHR (2005): Time for a Dispute Settlement Redesign?*, 13 CONTEMP. ASIA ARB. J. 269, 274–76 (2020) (proposing both that China delayed notifying the WHO of the emergence of COVID-19 and that the WHO was too slow to declare a PEHIC in response to COVID-19).

¹³ Sebastien Ricci & Nina Larson, *Here’s why the WHO hasn’t Declared China’s Coronavirus a Global Health Emergency*, SCI. ALERT (Jan. 24, 2020), <https://www.sciencealert.com/here-s-why-the-who-hasn-t-declared-the-wuhan-virus-as-a-global-health-emergency>.

¹⁴ See Ayelet Berman, *The World Health Organization and COVID-19: How Much Legal Authority Does the WHO Really Have to Manage the Pandemic?*, CTR. FOR INT’L L. (2020), <https://cil.nus.edu.sg/the-world-health-organization-and-covid-19-how-much-legal-authority-does-the-who-really-have-to-manage-the-pandemic-by-dr-ayelet-berman/>.

¹⁵ See generally Lo, *supra* note 4 (criticizing the response from China and the WHO). *But cf.* Berman, *supra* note 14 (arguing that the WHO’s authority to mandate greater cooperation from China was limited).

¹⁶ See Jonathon Rothwell & Christos Madrikis, *Politics is wrecking America’s pandemic response*, BROOKINGS INST. (Sept. 17, 2020), <https://www.brookings.edu/blog/up-front/2020/09/17/politics-is-wrecking-americas-pandemic-response/> (correlating attitudes to the pandemic with political party affiliation and demonstrating that partisanship, not science, is driving public pandemic response).

¹⁷ Shane Harris, Greg Miller, Josh Dawsey & Ellen Nakashima, *U.S. intelligence reports from January and February warned about a likely pandemic*, WASH. POST (Mar. 20, 2020, 7:10 PM), https://www.washingtonpost.com/national-security/us-intelligence-reports-from-january-and-february-warned-about-a-likely-pandemic/2020/03/20/299d8cda-6ad5-11ea-b5f1-a5a804158597_story.html.

¹⁸ Tara Subramaniam & Christopher Hickey, *Timeline: Charting Trump’s public comments on COVID-19 versus what he told Woodward in private*, CNN (Sept. 16, 2020), <https://www.cnn.com/interactive/2020/09/politics/coronavirus-trump-woodward-timeline/>.

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²⁰ World Health Org., 2005 International Health Regulations (3d ed. 2016), <https://www.who.int/publications/i/item/9789241580496> [hereinafter IHR].

²¹ *Statement of the Global Health Law Committee of the International Law Association regarding the COVID-19 pandemic*, INT’L L. ASS’N (Apr. 5, 2020),

<https://frederickabbott.com/sites/default/files/Statement%20of%20the%20ILA%20Global%20Health%20Law%20Committee%20regarding%20COVID-19%20-%205%20April%202020%20r3.pdf>.

²² In July 2020, WHO Director-General Tedros Adhanom Ghebreyesus announced the establishment of an “Independent Panel for Pandemic Preparedness and Response,” to evaluate the world’s response to the COVID-19 pandemic. *Independent Evaluation of Global COVID-19 Response Announced*, WORLD HEALTH ORG. (July 9, 2020), <https://www.who.int/news/item/09-07-2020-independent-evaluation-of-global-covid-19-response-announced>. The Independent Panel issued a first report on November 5, 2020 and a second, relatively brief, progress report in January 2021. INDEP. PANEL FOR PANDEMIC PREPAREDNESS & RESPONSE, SECOND REPORT ON PROGRESS (Jan. 2021), https://theindependentpanel.org/wp-content/uploads/2021/01/Independent-Panel_Second-Report-on-Progress_Final-15-Jan-2021.pdf [hereinafter SECOND REPORT]. The Panel is scheduled to release a further report in May 2021 at the 74th World Health Assembly. *Id.*

²³ The United States and China make for particularly interesting case studies. Both countries’ nationalistic interests (arguably) impaired compliance with the IHR and cooperation with other nations. Because of the important standing of both nations, their behavior had outsized consequences for the rest of the world. However, future case studies on other jurisdictions, such as Brazil, Russia, or the United Kingdom, could be similarly illustrative.

²⁴ David P. Fidler, *The Future of the World Health Organization: What Role for International Law?*, 31 VAND. J. TRANSNAT’L L. 1079 (1998).

²⁵ See generally *Human Rights Dimensions of COVID-19 Response*, HUM. RTS WATCH (Mar. 19, 2020), <https://www.hrw.org/news/2020/03/19/human-rights-dimensions-covid-19-response>.

²⁶ See, e.g., Oona Hathaway, Mark Stevens & Preston Lim, *COVID-19 and International Law: Refugee Law – The Principle of Non-Refoulement*, JUST SECURITY (Nov. 30, 2020), <https://www.justsecurity.org/73593/covid-19-and-international-law-refugee-law-the-principle-of-non-refoulement/>.

²⁷ See *supra* note 21.

²⁸ Patrick Mellacher, *Cooperation in the Age of COVID-19: Evidence from Public Goods Games*, ARXIV.ORG (Nov. 18, 2020), <https://arxiv.org/ftp/arxiv/papers/2011/2011.09189.pdf>.

²⁹ Alejandro Capparos & Michael Finus, *The Corona-Pandemic: A Game-Theoretic Perspective on Regional and Global Governance*, 76 ENV’T & RES. ECON. 913 (2020).

³⁰ Constitution of the World Health Organization art. 2(a), July 22, 1946, 4 Bevans 119, 14 U.N.T.S. 185 [hereinafter WHO Constitution].

³¹ IHR, *supra* note 20, art. 6.

³² Raymond Zhong, Paul Mozur, Jeff Kao & Aaron Krolik, *No ‘Negative’ News: How China Censored the Coronavirus*, N.Y. TIMES (Dec. 19, 2020), <https://www.nytimes.com/2020/12/19/technology/china-coronavirus-censorship.html>.

³³ *Coronavirus: Trump terminates U.S. relationship with WHO*, BBC NEWS (May 30, 2020), <https://www.bbc.com/news/world-us-canada-52857413/>.

³⁴ See Harold Hongju Koh & Lawrence O. Gostin, *How to Keep the United States in the WHO*, FOREIGN AFFS. (2020), <https://www.foreignaffairs.com/articles/world/2020-06-05/how-keep-united-states-who>; Erica Werner, *Congressional Democrats allege Trump’s move to defund World Health Organization is illegal*, WASH. POST (Apr. 15, 2020), <https://www.washingtonpost.com/us-policy/2020/04/15/trump-who-democrats/>.

³⁵ Press Release, Stéphane Dujarric (Spokesman for the Secretary-General), Note to Correspondents in answer to questions regarding the World Health Organization, U.N. Press Release (July 7, 2020), <https://www.un.org/sg/en/content/sg/note-correspondents/2020-07-07/note-correspondents-answer-questions-regarding-the-world-health-organization>.

³⁶ Koh & Gostin, *supra* note 34.

³⁷ *Coronavirus: Trump terminates U.S. relationship with WHO*, *supra* note 33; see also Letter from The White House, to Dr. Tedros Adhanom Ghebreyesus, Director-General of the World Health Org. (May 18, 2020), https://www.whitehouse.gov/wp-content/uploads/2020/05/Tedros-Letter.pdf?fbclid=IwAR37I6eg33gvIDfse0-iLERvoNLtGVpLNdt31uK_AEs5OMiFNZCjLxjkuds.

³⁸ See, e.g., *US ends 5 cultural programs with China in further escalation*, AP NEWS (Dec. 5, 2020), <https://apnews.com/article/donald-trump-beijing-china-united-states-mike-pompeo-e25097dd1879243a71268479d54f4be6>; Paul Mozur & Raymond Zhong, *U.S. Tightens Visa Rules for Chinese Communist Party Members*, N.Y. TIMES (Dec. 3, 2020), <https://www.nytimes.com/2020/12/03/world/asia/us-visa-china-communist-party.html>.

³⁹ Chris Buckley, *China’s Combative Nationalists See a World Turning Their Way*, N.Y. TIMES (Dec. 14, 2020), <https://www.nytimes.com/2020/12/14/world/asia/china-nationalists-covid.html>.

⁴⁰ See Armin von Bogdandy & Pedro Villarreal, *International Law on Pandemic Response: A First Stocktaking in Light of the Coronavirus Crisis* (Max Planck Inst. for Compar. Pub. L. & Int'l L. (MPIIL), Research Paper No. 2020-07, 2020), <https://ssrn.com/abstract=3561650>.

⁴¹ After initially refusing to allow WHO investigators to enter the country, China permitted a team of fourteen scientists to visit “laboratories, disease-control centers and live-animal markets” in Wuhan. Javier C. Hernandez, *China Scores a Public Relations Win After W.H.O. Mission to Wubao*, N.Y. TIMES (Feb. 12, 2021), <https://www.nytimes.com/2021/02/09/world/asia/wuhan-china-who-covid.html>. But see Javier C. Hernandez & James Gorman, *On W.H.O. Trip, China Refused to Hand Over Important Data*, N.Y. TIMES (Feb. 12, 2021), <https://www.nytimes.com/2021/02/12/world/asia/china-world-health-organization-coronavirus.html>.

⁴² Seth Berkley, *COVAX explained*, GAVI (Sept. 3, 2020), <https://www.gavi.org/vaccineswork/covax-explained>.

⁴³ Anthony D. So & Joshua Woo, *Reserving Coronavirus Disease 2019 Vaccines for Global Access: Cross Sectional Analysis*, BMJ 371 (2020), <https://www.bmj.com/content/371/bmj.m4750> (finding that wealthy nations have purchased more vaccines than they need); cf. Robin Cohen, *COVID Vaccines: Rich Countries Have Bought More than They Needed – Here’s How They Could Be Redistributed*, CONVERSATION (Feb. 9, 2021), <https://theconversation.com/covid-vaccines-rich-countries-have-bought-more-than-they-need-heres-how-they-could-be-redistributed-153732>.

⁴⁴ Hong et al., *supra* note 19. The Bloomberg resilience ratings offer only a rough proxy for responsiveness to the pandemic, and of course, change over time. Although Brazil now ranks higher than only seven other listed countries, it ranked significantly higher in earlier iterations the list and appeared to be outperforming countries without a strong nationalist element, such as Italy, Belgium, and Portugal. Brazil continues to rank better than Mexico and Argentina, whose responses have arguably demonstrated fewer nationalist tendencies.

⁴⁵ *Joe and Kamala’s Plan to Beat COVID-19*, BIDEN HARRIS, <https://joebiden.com/covid19/> (last visited Dec. 15, 2020); Letter from Joe Biden, President U.S., to António Guterres, United Nations Secretary-General (Jan. 20, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/letter-his-excellency-antonio-guterres/>.

⁴⁶ National Security Memorandum on United States Global Leadership to Strengthen the International COVID-19 Response and to Advance Global Health Security and Biological Preparedness, WHITE HOUSE (Jan. 21, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/21/national-security-directive-united-states-global-leadership-to-strengthen-the-international-covid-19-response-and-to-advance-global-health-security-and-biological-preparedness/>. JOSEPH R. BIDEN, JR., NATIONAL STRATEGY FOR THE COVID-19 RESPONSE AND PANDEMIC PREPAREDNESS (2021), <https://www.whitehouse.gov/wp-content/uploads/2021/01/National-Strategy-for-the-COVID-19-Response-and-Pandemic-Preparedness.pdf>.

⁴⁷ Frida Ghiti, *Opinion: Which world leader has the worst pandemic record? The competition is fierce.*, WASH. POST (Mar. 30, 2021), <https://www.washingtonpost.com/opinions/2021/03/30/which-world-leader-has-worst-pandemic-record-competition-is-fierce/>. See also Genaro Lozano, *Vaccine Diplomacy: A New Cold War*, AMS. Q. (Feb. 11, 2021), <https://americasquarterly.org/article/vaccine-diplomacy-a-new-cold-war/>; Amanda McGowan, *China’s ‘Vaccine Diplomacy’ Fills Void in Developing World Left by US ‘Vaccine Nationalism’*, WORLD (Jan. 12, 2021), <https://www.pri.org/stories/2021-01-12/china-s-vaccine-diplomacy-fills-void-developing-world-left-us-vaccine-nationalism>.

⁴⁸ See, e.g., David Bishop, *Lessons from SARS: Why the WHO Must Provide Greater Economic Incentives for Countries to Comply with International Health Regulations*, 36 GEO. J. INT’L L. 1173 (2005); Lawrence O. Gostin & Ana Ayala, *Global Health Security in an Era of Explosive Pandemic Potential*, 9 J. NAT’L SEC. L. & POL’Y 53 (2018); Tine Hanrieder & Adam Kamradt-Scott, *Same, Same But Different: Reforming the World Health Organization in an Age of Public Scrutiny and Global Complexity*, 11 GLOB. HEALTH GOV. 4 (2017); Mark Eccleston-Turner & Scarlett McArdle, *Accountability, International Law, and the World Health Organization: A Need for Reform?*, 11 GLOB. HEALTH GOVERNANCE 27 (2017).

⁴⁹ IHR, *supra* note 20, art. 1.

⁵⁰ World Health Organization (@WHO), TWITTER (January 30, 2020, 2:01 PM), <https://twitter.com/who/status/1222973217435987970?lang=en>.

⁵¹ As explained by Michael Ryan, WHO director for health emergencies. See William Wan, *WHO declares a pandemic of coronavirus disease covid-19*, WASH. POST (Mar. 11, 2020), <https://www.washingtonpost.com/health/2020/03/11/who-declares-pandemic-coronavirus-disease-covid-19/>.

⁵² Previously, the WHO utilized a six-stage classification for declaring a disease a pandemic, with a disease being classified as a pandemic when stage six was reached. This process was abandoned following H1N1. See Stephanie Debehay, *WHO says it no longer uses ‘pandemic’ category, but virus still emergency*, REUTERS (Feb. 24, 2020), <https://www.reuters.com/article/uk-china-health-who-idUKKCN20I0PD>.

⁵³ Global Health Law Panel, International Law Association Biennial, Dec. 10, 2020 (author’s notes).

⁵⁴ *Id.*

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- ⁵⁵ World Health Org., 2005 International Health Regulations art. 2 (2d ed. 2008); see David P. Fidler, *To Declare Or Not to Declare: The Controversy over Declaring a Public Health Emergency of International Concern for the Ebola Outbreak in the Democratic Republic of the Congo*, 14 ASIAN J. WTO & INT'L HEALTH L. & POL'Y 287 (2019).
- ⁵⁶ WHO Constitution, *supra* note 30, arts. 59–64.
- ⁵⁷ Washington University School of Law, *White Paper - Global Governance: The World Health Organization (WHO) and the Need for Post-COVID-19 Reform, Addressing Challenges to Public Health and Society Through Global Collaboration* (submitted to the World Health Organization's Independent Panel for Pandemic Preparedness and Response for consideration), April 2021; *Implementation of the International Health Regulations (2005)*, Report of the Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response, Report by the Director-General, U.N. Doc. A69/21, at 43 (May 13, 2016) (“The need for an intermediate level of alert”); Gian Luca Burci, *The Outbreak of COVID-19 Coronavirus: are the International Health Regulations fit for purpose?*, EJILTALK! (Apr. 21, 2020), <https://www.ejiltalk.org/the-outbreak-of-covid-19-coronavirus-are-the-international-health-regulations-fit-for-purpose/>.
- ⁵⁸ David N. Durrheim, Laurence O. Gostin & Keymanthri Moodley, *When does a major outbreak become a Public Health Emergency of International Concern?*, LANCET (May 19, 2020) [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30401-1/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30401-1/fulltext).
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- ⁶¹ Alison Agnew, *A Combative Disease: The Ebola Epidemic in International Law*, 39 B.C. INT'L & COMPAR. L. REV. 97, 114 (2016); Gostin & Ayala, *supra* note 48 at 67.
- ⁶² Bogdandy & Villarreal, *supra* note 40, at 14.
- ⁶³ Fidler, *supra* note 24, at 1096.
- ⁶⁴ Burci, *The Outbreak of COVID-19*, *supra* note 57.
- ⁶⁵ Fidler, *supra* note 22, at 1099.
- ⁶⁶ See Rebecca Katz, *Pandemic policy can learn from arms control*, NATURE (Nov. 19, 2019), <https://www.nature.com/articles/d41586-019-03452-0>; Alison Duxbury, *The World Health Organization as Pandemic Police?*, PURSUIT (2020), <https://pursuit.unimelb.edu.au/articles/the-world-health-organization-as-pandemic-police>.
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- ⁶⁸ WHO Constitution, *supra* note 30, art. 75.
- ⁶⁹ IHR, *supra* note 20, art 56.
- ⁷⁰ STEPHAN P. MULLIGAN, CONG. RSCH. SERV., LSB10525, CAN THE UNITED STATES SUE CHINA OVER COVID–19 IN AN INTERNATIONAL COURT? (2020). This argument has also surfaced in neoconservative writings in Canada and the United Kingdom and seemed to be implicit in a Statement by Australia's Prime Minister who suggested there should be an independent investigation into the origins of the pandemic & the WHO's response and seemed to suggest that China acted wrongly. Paul Karp & Helen Davidson, *China bristles at Australia's call for investigation into coronavirus origin*, GUARDIAN (Apr. 29, 2020), <https://www.theguardian.com/world/2020/apr/29/australia-defends-plan-to-investigate-china-over-covid-19-outbreak-as-row-deepens>.
- ⁷¹ IHR, *supra* note 20, art. 6(1).
- ⁷² SECOND REPORT, *supra* note 22, at 17.
- ⁷³ Int'l L. Comm'n, Draft articles on Responsibility of States for Internationally Wrongful Acts art. 2, U.N. Doc. A/56/10, in 2001 Y.B. Int'l L. Comm'n, vol. II, pt. 2 (hereinafter ILC Draft on Resp. of States for Int. Wrongful Acts); Corfu Channel (U.K. v. Alb.), Judgment, 1949 I.C.J. 4, ¶¶ 18–23 (Apr. 9); Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosn. & Herz. v. Serb. & Montenegro), Judgment, 2007 I.C.J. 43, ¶ 379 (Feb. 26); Armed Activities on the Territory of the Congo (Dem. Rep. Congo v. Rwanda), Jurisdiction and Admissibility, Judgment, 2006 I.C.J. 6, ¶ 31 (Feb. 3) [hereinafter Armed Activities].
- ⁷⁴ ILC Draft articles on Responsibility of States for Internationally Wrongful Acts, *supra* note 73, art. 12; Gabčíkovo-Nagymaros Project (Hung./Slovak.), Judgment, 1997 I.C.J. 7 ¶ 78 (Sept. 25); Military and Paramilitary Activities in and against Nicaragua (Nicar. v. U.S.), Judgment, 1986 I.C.J. 14 (June 27).
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- ⁸⁰ *Diversion of Water from the Meuse (Neth. v. Belg.)*, Judgment, 1937 P.C.I.J. (ser. A/B) No. 70, at 76–78, ¶ 323 (June 28).
- ⁸¹ *Id.*
- ⁸² Alexis Robert, *Lessons from New Zealand's COVID-19 outbreak response*, 5 LANCET (Oct. 13, 2020).
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- ⁸⁴ David Fidler, *COVID-19 and International Law: Must China Compensate Countries for the Damage?*, JUST SECURITY (Mar. 27, 2020), <https://www.justsecurity.org/69394/covid-19-and-international-law-must-china-compensate-countries-for-the-damage-international-health-regulations/>. Other commentators have argued that the ICJ might require both negotiation and World Health Assembly Settlement before accepting jurisdiction over the case, which could make it quite difficult to use Article 75 to obtain jurisdiction. Mike Videler, *ICJ Jurisdiction over Obligations to Share Information with the WHO*, EJIL:TALK! (Jan. 21, 2021), <https://www.ejiltalk.org/ici-jurisdiction-over-obligations-to-share-information-with-who/>.
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- ⁹⁵ Joint Resolution Providing for Membership and Participation by the United States in the World Health Organization and Authorizing an Appropriation Therefor, H.R.J. Res. 469, 80th Cong. (1949).
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https://treaties.un.org/Pages/ShowMTDSGDetails.aspx?src=UNTSO&tabid=2&mtdsg_no=IX-1&chapter=9&lang=en#11 (Feb. 16, 2021).

98 See TIJAJI SALAAM-BLYTHER, LUISA BLANCHFIELD, MATTHEW C. WEED & CORY R. GILL, CONG. RSCH. SERV., R46575, U.S. WITHDRAWAL FROM THE WORLD HEALTH ORGANIZATION: PROCESS AND IMPLICATIONS (Oct. 21, 2020).

99 See Frederick Abbott, *Confronting COVID-19 in a World without WHO—Seriously?*, HEALTH POL’Y WATCH (Apr. 14, 2020), <https://healthpolicy-watch.news/confronting-covid-19-in-a-world-without-who-seriously/>.

100 VCLOT, *supra* note 92, art. 60.

101 Under the WHO Constitution, countries not fulfilling their obligations may lose their voting rights in the organization. WHO Constitution, *supra* note 30, art. 7. In my example, the U.S. is arguably violating a separate agreement with the organization which results in *both* a material breach of the WHO Constitution and the U.S. agreement with the organization.

102 Armed Activities, *supra* note 73, ¶¶ 96, 99.

103 Legality of the Use by a State of Nuclear Weapons in Armed Conflict, Advisory Opinion, 1996 I.C.J. 66, ¶ 226 (July 8).

104 Interpretation of the Agreement of 25 March 1951 between the WHO and Egypt, Advisory Opinion, 1980 I.C.J. 73, 74 (Dec. 20).

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106 See Sean D. Murphy, *The United States and the International Court of Justice: Coping with Antinomies, in THE UNITED STATES AND INTERNATIONAL COURTS AND TRIBUNALS* (Cesare Romano ed., 2008) (noting that “the United States has never been willing to submit itself to the plenary authority of the Court, and has typically reacted negatively to decisions by the Court that are adverse to U.S. interests.”); Julian G. Ku, *China and the Future of International Adjudication*, 27 MD. J. INT’L L. 154 (2012).

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⁸ *Id.* art. 13(1).

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¹⁴ Taylor et al., *supra* note 5, at 82.

¹⁵ For an overview of the history of IHR monitoring mechanisms, see Seventy-first World Health Assembly, WHO Director-General, Public health preparedness and response: Implementation of the International Health Regulations (2005), DWHA A71/8 at appx. 2 (Apr. 11, 2018).

¹⁶ The Sixty-First World Health Assembly (WHA) in 2008 adopted a resolution in accordance with Article 54 to this end. The IHR Secretariat provides an annual report to the World Health Assembly detailing progress on IHR core capacity implementation. To this end, the Secretariat gathers standardized data from the Member States. See Sixty-first World Health Assembly, Resolution WHA61.2 (Implementation of the International Health Regulations (2005)), WHA61/2008/REC/1 (2008).

¹⁷ Two IHR core capacity monitoring framework: checklist and indicators for monitoring progress in the development of IHR core capacities in States Parties. See WORLD HEALTH ORG., IHR CORE CAPACITY MONITORING FRAMEWORK:

CHECKLIST AND INDICATORS FOR MONITORING PROGRESS IN THE DEVELOPMENT OF IHR CORE CAPACITIES IN STATE PARTIES, at 6 (2013), http://apps.who.int/iris/bitstream/10665/84933/1/WHO_HSE_GCR_2013.2_eng.pdf?ua=1 (WHO/HSE/GCR/2013.2); IHR Monitoring, WORLD HEALTH ORG., <https://www.who.int/ihr/procedures/monitoring/en/> (last visited Dec. 20, 2020); WORLD HEALTH ORG., MONITORING AND EVALUATION FRAMEWORK, at 6 (2018), <https://apps.who.int/iris/bitstream/handle/10665/276651/WHO-WHE-CPI-2018.51-eng.pdf?sequence=1> (WHO/WHE/CPI/2018.51) [hereinafter MONITORING AND EVALUATION FRAMEWORK].

¹⁸ Eight core capacities, capacities of points of entry and four hazards (biological, chemical, radiological and nuclear). World Health Org., *IHR Core Capacity Monitoring Framework: Questionnaire for Monitoring Progress in the Implementation of IHR Core Capacities in States Parties* (2015), https://apps.who.int/iris/bitstream/handle/10665/163737/WHO_HSE_GCR_2015.8_eng.pdf;jsessionid=4C23D71E4B7C83F2F4407CF1BD18BDFD?sequence=1 (WHO/HSE/GCR/2015.8).

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²² Gostin & Katz, *supra* note 12, at 276, 278; Gostin & Ayala, *supra* note 11, at 66.

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²⁴ *Id.* at 61.

²⁵ MONITORING AND EVALUATION FRAMEWORK, *supra* note 17.

²⁶ *Id.* at 12. SPAR consist of twenty-four indicators for thirteen IHR capacities. *Id.*

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²⁹ See, e.g., Pedro Villarreal, *COVID-19 Symposium: “Can They Really Do That?” States’ Obligations Under the International Health Regulations in Light of COVID-19 (Part II)*, OPINIOJURIS (2020), <http://opiniojuris.org/2020/03/31/covid-19-symposium-can-they-really-do-that-states-obligations-under-the-international-health-regulations-in-light-of-covid-19-part-ii/> (noting IHR enforcement strategies); Svět Lustig Vijay, *WHO’s Legal Mandate Is Weak In Responding to COVID-19 Emergency: But Changes Are Up to Member States*, HEALTH POL’Y WATCH (2020), <https://healthpolicy-watch.news/whos-legal-mandate-is-weak-in-responding-to-covid-19-emergency-but-changes-are-up-to-member-states/> (critiquing weakness of current enforcement mechanisms).

³⁰ Taylor et al., *supra* note 5.

³¹ Council of the European Union, *Draft Conclusions of the Council and the Representatives of the Governments of the Member States on the role of the EU in strengthening the World Health Organization*, Oct. 27, 2020, <https://data.consilium.europa.eu/doc/document/ST-12276-2020-INIT/en/pdf>.

³² See, e.g., Craig Murray, *Implementing the New International Health Regulations: The Role of the WTO’s Sanitary and Phytosanitary Agreement*, 40 GEO. J. INT’L L. 625 (2009) (comparing IHR enforcement mechanisms with those under the WTO’s Sanitary and Phytosanitary Agreement).

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³⁶ MONITORING AND EVALUATION FRAMEWORK, *supra* note 17, at 14–15.

³⁷ See Giulio Bartolini, *Are You Ready for a Pandemic? The International Health Regulations Put to the Test of Their 'Core Capacity Requirements'*, EJIL:TALK! (June 1, 2020), <https://www.ejiltalk.org/are-you-ready-for-a-pandemic-the-international-health-regulations-put-to-the-test-of-their-core-capacity-requirements/>; see also Jaouad Mahjour, Stella Chungong, Michael Dumiak, Olaa Mohamed-Ahmed, Margot Nauleau, Abbas Omaar & Beatrice Progida, *Thematic Paper on the Status of Country Preparedness Capacities*, WORLD HEALTH ORG. (Sept. 15, 2019), https://apps.who.int/gpmb/assets/thematic_papers/tr-2.pdf.

³⁸ *Implementation Report*, CITES, https://cites.org/eng/resources/reports/Implementation_report#:~:text=Implementation%20reports%20provide%20an%20opportunity,incentives%20and%20wildlife%20trade%20policies (last visited Dec. 30, 2020).

³⁹ Single Convention on Narcotic Drugs art. 18, Dec. 13, 1964, 520 U.N.T.S. 7515.

⁴⁰ *Id.* art. 14. Article 14 provides the board with a list of legal powers. Among others, Article 14(1)(a) and (c) determine that if the board has reason to believe that the “aims of the Convention are being seriously endangered by reason of the failure if any Party, country or territory to carry out the provisions” of the convention, it may “propose to the Government concerned that a study of the matter be carried out in its territory by such means as the Government deems appropriate.”

⁴¹ *Id.* art. 15.

⁴² *Id.* art. 14(3) determines that the Board may publish information on the actions of States even without their consent, saying that it “has the right to publish a report on any matter dealt with under the provisions of this article, and communicate it to the Council., which shall forward it to all Parties.”

⁴³ OIE Observatory: For a better understanding of the implementation of OIE International Standards, WORLD ORG. FOR ANIMAL HEALTH, <https://www.oie.int/standard-setting/overview/oie-observatory/> (last visited Jan. 4, 2021).

⁴⁴ *Id.*

⁴⁵ *Compliance Monitoring Program*, WORLD ANTI-DOPING AGENCY, <https://www.wada-ama.org/en/compliance-monitoring-program> (last visited Jan. 4, 2021).

⁴⁶ For example, it could be integrated into and included in the World Health Assembly meetings.

⁴⁷ INT'L ENERGY AGENCY, <https://www.iea.org/> (last visited Jan. 4, 2021).

⁴⁸ Taylor et al., *supra* note 5; cf. Alison Duxbury, *The World Health Organization as Pandemic Police?*, PURSUIT (May 29, 2020), <https://pursuit.unimelb.edu.au/articles/the-world-health-organization-as-pandemic-police>.

⁴⁹ See, e.g., Taylor et al., *supra* note 5; Gostin & Katz, *supra* note 12, at 291.

⁵⁰ Implementation of the IHR, *supra* note 3, at 10–11, 61.

⁵¹ *Id.* at 61.

⁵² Suerie Moon, Devi Sridhar, Muhammad A. Pate, Ashish K. Jha, Chelsea Clinton, Sophie Delaunay et al., *Will Ebola change the game? Ten essential reforms before the next pandemic. The report of the Harvard-LSHM Independent Panel on the Global Response to Ebola*, 386 LANCET 2204 (2015).

⁵³ The academy also recommended that the World Bank and others declare that funding is conditional on independent assessments.

⁵⁴ The panel also recommended that independent assessment be tied to guarantees of financial and technical assistance.

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⁵⁶ *Joint External Evaluation Mission Reports*, WORLD HEALTH ORG., <https://www.who.int/ihr/procedures/mission-reports/en/> (last visited Dec. 30, 2020).

⁵⁷ Gostin & Ayala, *supra* note 11, at 66.

⁵⁸ Gian Luca Burci & Jakob Quirin, *Implementation of the International Health Regulations (2005): Recent Developments at the World Health Organization*, 22 ASIL INSIGHTS (Sept. 25, 2018), <https://www.asil.org/insights/volume/22/issue/13/implementation-international-health-regulations-2005-recent-developments>.

⁵⁹ Gostin & Katz, *supra* note 12, at 291–92; Gostin & Ayala *supra* note 56, at 67.

⁶⁰ The INCB is composed of thirteen expert members with medical or pharmacological backgrounds. Allyn Taylor, *Addressing the global tragedy of needless pain: rethinking the United Nations Single Convention on Narcotic Drugs*, 35 J.L. MED. & ETHICS 556 (2007).

⁶¹ Single Convention on Narcotic Drugs, *supra* note 38, art. 14(2).

⁶² *IAEA Safeguards Overview*, International Atomic Energy Agency, <https://www.iaea.org/publications/factsheets/iaea-safeguards-overview> (last visited Dec. 30, 2020).

⁶³ *Id.*

⁶⁴ *Compliance Monitoring Program*, *supra* note 44.

⁶⁵ The panel said that “this proposal builds on analogous efforts to strengthen system-wide accountability for other global efforts, such as the UN Commission on Information and Accountability for Women’s and Children’s Health and the Independent Monitoring Board of the Global Polio Eradication Initiative, credited with helping to reinvigorate the performance of this effort. The Accountability Commission would be a more permanent institution, however, with a broader mandate than these two previous initiatives.” Moon et al., *supra* note 51, at 2212–13.

⁶⁶ *Id.* at 2215–16 (providing details in Recommendation 8).

⁶⁷ For further details concerning the proposed accountability commission, see *id.*, which provides details in Recommendations 5 and 8.

⁶⁸ *Id.* at 2212–13 (providing details in Recommendation 5).

⁶⁹ *Id.* at 2216.

⁷⁰ *Id.* at 2215–16.

⁷¹ *Reviewing COVID-19 Response and Strengthening the WHO’s Global Emergency Preparedness and Response WHO ROADMAP*, HHS.GOV (Sept. 9, 2020) <https://www.hhs.gov/about/agencies/oga/about-oga/what-we-do/international-relations-division/multilateral-relations/who-roadmap-2020.html>.

⁷² *Non-Paper on Strengthening WHO’s leading and coordinating role in global health with a specific view on WHO’s work in health emergencies and improving IHR Implementation*, GENEVA GLOB. HEALTH HUB (Aug. 2020), <http://g2h2.org/wp-content/uploads/2020/08/Non-paper-1.pdf>.

⁷³ The INCB is composed of thirteen expert members with medical or pharmacological backgrounds, and they are elected by the UN Economic and Social Council. Single Convention on Narcotic Drugs, *supra* note 38, art. 9.

⁷⁴ *Id.* art. 14.

⁷⁵ *Compliance Review Committee*, WORLD ANTI-DOPING AGENCY, <https://www.wada-ama.org/en/who-we-are/governance/compliance-review-committee> (last visited Jan. 4, 2021).

PEDRO A. VILLARREAL, TOWARDS A TIMELESS LEGAL DEFINITION OF A PANDEMIC

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² Joshua Berlinger, *Coronavirus has now spread to every continent except Antarctica*, CNN (Feb. 26, 2020, 5:12 PM), <https://edition.cnn.com/2020/02/25/asia/novel-coronavirus-covid-update-us-soldier-intl-hnk/index.html>.

³ See Tedros Adhanom Ghebreyesus, World Health Org. Director-General, Opening Remarks at the Media Briefing on COVID-19 (Mar. 11, 2020), <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>.

⁴ World Health Org., 2005 International Health Regulations art. 2 (3d ed. 2016), <https://www.who.int/publications/i/item/9789241580496> [hereinafter IHR].

⁵ H.L.A. HART, *THE CONCEPT OF LAW* 121–44 (Oxford Clarendon Press 1961); see also Brian Bix, *H.L.A. Hart and the ‘Open Texture’ of Language*, 10 L. & PHIL. 51, 52 (1991).

⁶ See, e.g., David Morens, Gregory Folkers & Anthony Fauci, *What Is a Pandemic?*, 200 J. INFECTIOUS DISEASES 1018, 1019–20 (2009); Peter Doshi, *The elusive definition of a pandemic*, 89 BULL. WORLD HEALTH ORG. 532 (2011), <https://www.who.int/bulletin/volumes/89/7/11-086173/en/>.

⁷ WORLD HEALTH ORG., PANDEMIC INFLUENZA RISK MANAGEMENT, at 26 (2017) (WHO/WHE/IHM/GIP/2017.1).

⁸ In 2019, the WHO listed a potential influenza pandemic as one of the top ten global threats. *Ten threats to global health in 2019*, WORLD HEALTH ORG. (2019), <https://www.who.int/news-room/spotlight/ten-threats-to-global-health-in-2019> (last visited Jan. 13, 2021).

⁹ IHR, *supra* note 4.

¹⁰ David Heymann, *Zika virus and microcephaly: why is this situation a PHEIC?*, 387 LANCET 719, 720 (2016).

¹¹ See generally TIMOTHY ENDICOTT, *VAGUENESS IN THE LAW* (Oxford Univ. Press 2000).

¹² See IHR, *supra* note 4, art. 48.

¹³ *Statement on the Meeting of the International Health Regulations (2005) Emergency Committee for Ebola Virus Disease in the Democratic Republic of the Congo on 12th April 2019*, WORLD HEALTH ORG. (Apr. 12, 2019), <https://www.who.int/news->

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¹⁴ See e.g., David P. Fidler, *To Declare or Not to Declare: The Controversy over Declaring a Public Health Emergency of International Concern for the Ebola Outbreak in the Democratic Republic of the Congo*, 14 ASIAN J. WTO & INT'L HEALTH L. & POL'Y 287, 302–04 (2019); c.f. J. Benton Heath, *Global Emergency Power in the Age of Ebola*, 57 HARV. INT'L L.J. 1 (2016) (critiquing response to Ebola); Laurie Garrett, *Ebola's Lessons: How the WHO Mishandled the Crisis*, 94 FOREIGN AFFS. 80 (2015).

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¹⁶ Benedict Kingsbury, Nico Krisch & Richard Stewart, *The Emergence of Global Administrative Law*, 68 L. & CONTEMP. PROBS. 15, 17 (2005).

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¹⁸ *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*, WORLD HEALTH ORG. (2011), https://apps.who.int/iris/bitstream/handle/10665/75235/9789241564335_eng.pdf?sequence=1 [hereafter “WHO, 2011 Report of the Review Committee”].

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²³ WORLD HEALTH ORG., *WHO CHECKLIST FOR INFLUENZA PANDEMIC PREPAREDNESS PLANNING*, at vi (2005) (WHO/CDS/CSR/GIP/2005.4).

²⁴ WORLD HEALTH ORG., *PANDEMIC INFLUENZA PREPAREDNESS AND RESPONSE* 14 (2009).

²⁵ LAWRENCE GOSTIN, *GLOBAL HEALTH LAW* 202–03 (Harvard Univ. Press 2014); c.f. SUDEYPA ABEYSINGHE, *PANDEMICS, SCIENCE AND POLICY: H1N1 AND THE WORLD HEALTH ORGANIZATION* 64–10 (Palgrave Macmillan 2015).

²⁶ Villarreal, *supra* note 20.

²⁷ David Morens & Jeffery Taubenberger, *Understanding Influenza Backward*, 302 JAMA 679 (2009).

²⁸ WHO, 2011 Report of the Review Committee, *supra* note 18, at 80.

²⁹ Abeysinghe, *supra* note 25.

³⁰ World Health Org., *Interim Guidance, Pandemic Influenza Risk Management* (2013) (WHO/HSE/HEA/HSP/2013.3), https://www.who.int/influenza/preparedness/pandemic/GIP_PandemicInfluenzaRiskManagementInterimGuidance_Jun2013.pdf.

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³⁸ Cohen & Carter, *supra* note 19.

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⁴⁴ Int'l L. Ass'n, *Global Health Law*, Resolution No. 2/2020, ¶ 13 [hereafter "ILA Resolution"].

⁴⁵ Constitution of the World Health Organization art. 24, July 22, 1946, 4 Bevans 119, 14 U.N.T.S. 185.

⁴⁶ *Id.* art. 25.

⁴⁷ ILA Resolution, *supra* note 44, ¶¶ 8, 13.

⁴⁸ See generally WORLD HEALTH ORG., COMPARATIVE ANALYSIS OF NATIONAL PANDEMIC INFLUENZA PREPAREDNESS PLANS (Jan. 2011), https://www.who.int/influenza/resources/documents/comparative_analysis_php_2011_en/en/.

⁴⁹ World Health Org., Interim Guidance, Considerations for Implementing and Adjusting Public Health and Social Measures in the Context of COVID-19 (Nov. 4, 2020), <https://www.who.int/publications/i/item/considerations-in-adjusting-public-health-and-social-measures-in-the-context-of-covid-19-interim-guidance>.

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AYELET BERMAN & FONG HAN TAN, WHEN CRISIS MEETS PREPARATION AND DISCIPLINE: SINGAPORE'S SUCCESSFUL RESPONSE TO COVID-19

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¹² *Id.* Singapore only scored relatively low (3=developed capacity) on radiation emergencies.

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¹⁹ *Id.* at 6-7.

²⁰ *Id.* at 12.

²¹ *Id.* at 13.

²² *Id.* at 15.

²³ *Id.* at 16.

²⁴ *Id.* at 17.

²⁵ *Id.* at 18.

²⁶ *Id.* at 8, Table 1.

²⁷ *Id.* at 8, Table 1.

²⁸ *Id.* at 8.

²⁹ *Id.* at 10, Table 2.

³⁰ *Id.* at Annex C.

³¹ *Id.* at 4.

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⁴⁵ Singapore Ministry of Health, *Additional Precautionary Measures in Response to Escalating Global Situation* (Mar. 3, 2020), ¶ 9, <https://www.moh.gov.sg/news-highlights/details/tighter-measures-to-minimise-further-spread-of-covid-19>.

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⁸ *COVID-19 Dashboard*, JOHNS HOPKINS UNIV. MED., <https://coronavirus.jhu.edu/map.html> (last visited Feb. 18, 2021).

⁹ The SARS pandemic claimed 774 lives. *Summary of probable SARS cases with onset of illness from 1 November 2002 to 31 July 2003*, WORLD HEALTH ORG. (July 24, 2015), <https://www.who.int/publications/m/item/summary-of-probable-sars-cases-with-onset-of-illness-from-1-november-2002-to-31-july-2003>.

¹⁰ See *The Global Economic Outlook During the COVID-19 Pandemic: A Changed World*, WORLD BANK (June 8, 2020), <https://www.worldbank.org/en/news/feature/2020/06/08/the-global-economic-outlook-during-the-covid-19-pandemic-a-changed-world>; see also David M. Cutler & Lawrence H. Summers, *The COVID-19 Pandemic and the \$16 Trillion Virus*, 324 *JAMA* 1495 (2020).

¹¹ Nita Madhav, Ben Oppenheim, Mark Gallivan, Prime Mulembakani, Edward Rubin & Nathan Wolfe, *Pandemics: Risks, Impacts, and Mitigation*, in *DISEASE CONTROL PRIORITIES: IMPROVING HEALTH AND REDUCING POVERTY* (Dean T. Jamison, Hellen Gelband, Susan Horton, Prabhat Jha, Ramanan Laxminarayan, Charles N. Mock & Rachel Nugent eds., 3d ed. 2017). Of note, between 1940 and 2004 there were more than 335 emerging infectious diseases reported. Kate E. Jones, Nikkita G. Patel, Marc A. Levy, Adam Storeygard, Deborah Balk, John L. Gittleman & Peter Daszak, *Global trends in emerging infectious diseases*, 451 *NATURE* 990 (2008).

¹² *Emerging Infectious Diseases*, CTRS. DISEASE CONTROL, <https://www.cdc.gov/niosh/topics/emerginfectediseases/default.html#:~:text=Emerging%20infectious%20diseases%20are%20those,which,increase%20in%20the%20near%20future> (last visited Mar. 15, 2021).

¹³ See Catharine I. Paules, Robert W. Eisinger, Hilary D. Marston & Anthony S. Fauci, *What Recent History Has Taught Us About Responding to Emerging Infectious Disease Threats*, 167 *ANNALS INTERN. MED.* 805 (2017) (including a figure of emerging diseases).

¹⁴ An emerging infectious disease is a disease whose rate of new infection has increased in the past two decades and could increase in the future. Some infectious diseases can reemerge, such as when there is acquired drug resistance and a lack of prevention control measures (e.g., drug resistant tuberculosis, measles).

¹⁵ The CDC has several terms used to classify the spread of diseases. See CTRS. FOR DISEASE CONTROL & PREVENTION, *PRINCIPLES OF EPIDEMIOLOGY IN PUBLIC HEALTH PRACTICE: AN INTRODUCTION TO APPLIED EPIDEMIOLOGY AND BIostatistics* 72 (3d ed. 2012), <https://www.cdc.gov/csels/dsepd/ss1978/lesson1/section11.html> (“Occasionally, the amount of disease in a community rises above the expected level. Epidemic refers to an increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area. Outbreak carries the same definition of epidemic, but is often used for a more limited geographic area. Cluster refers to an aggregation of cases grouped in place and time that are suspected to be greater than the number expected, even though the expected number may not be known. Pandemic refers to an epidemic that has spread over several countries or continents, usually affecting a large number of people.”).

¹⁶ World Health Org., 2018 Annual Review of Diseases Prioritized Under the Research and Development Blueprint (2018), https://www.who.int/docs/default-source/blue-print/2018-annual-review-of-diseases-prioritized-under-the-research-and-development-blueprint.pdf?sfvrsn=4c22e36_2.

¹⁷ Deaths and economic damage are not always positively correlated, and we have seen instances with the economic toll has been high even though deaths have been low. Anas El Turabi & Philip Saynisch, *Appendix C: Modeling the Economic Threat of Pandemics*, in *THE NEGLECTED DIMENSION OF GLOBAL SECURITY: A FRAMEWORK TO COUNTER INFECTIOUS DISEASE CRISES* (2016), <https://www.ncbi.nlm.nih.gov/books/NBK368393/>.

¹⁸ David M. Morens & Anthony S. Fauci, *Emerging Pandemic Diseases: How We Got to COVID-19*, 182 *CELL* 1077 (2020), [https://www.cell.com/cell/pdf/S0092-8674\(20\)31012-6.pdf](https://www.cell.com/cell/pdf/S0092-8674(20)31012-6.pdf).

- ¹⁹ Felicia Keesing, *Impacts of biodiversity on the emergence and transmission of infectious diseases*, NATURE (2010), <https://www.nature.com/articles/nature09575?page=12#auth-1>; Anthony S. Fauci & David M. Morens, *Zika Virus in the Americas—Yet Another Arbovirus Threat*, 374 NEW ENG. J. MED. 601 (2016).
- ²⁰ CTRS. DISEASE CONTROL, A CDC FRAMEWORK FOR PREVENTING INFECTIOUS DISEASES: SUSTAINING THE ESSENTIALS AND INNOVATING FOR THE FUTURE (Oct. 2011), <https://www.cdc.gov/ddid/docs/ID-Framework.pdf>; *One Health*, CTRS. DISEASE CONTROL, <https://www.cdc.gov/onehealth/basics/index.html#:~:text=One%20Health%20is%20a%20collaborative,plants%2C%20and%20their%20shared%20environment> (last visited Mar. 15, 2021).
- ²¹ Lawrence O. Gostin & Rebecca Katz, *The International Health Regulations: The Governing Framework for Global Health Security*, 94 MILBANK Q. 264 (2016).
- ²² For example, in the third Emergency Committee meeting for COVID-19, the Committee called for coordination with World Organisation for Animal Health (OIE), Food and Agriculture Organization of the United Nations (FAO), and WHO Member States to identify zoonotic virus sources and prevent transmission. Statement, World Health Org., Statement on the Third Meeting of the International Health Regulations (2005) Emergency Committee Regarding the Outbreak of Coronavirus Disease (COVID-19) (May 1, 2020), [https://www.who.int/news/item/01-05-2020-statement-on-the-third-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-outbreak-of-coronavirus-disease-\(covid-19\)](https://www.who.int/news/item/01-05-2020-statement-on-the-third-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-coronavirus-disease-(covid-19)).
- ²³ IHR, *supra* note 2, at annex 1.
- ²⁴ See Lawrence O. Gostin & Ana Ayala, *Global Health Security in an Era of Explosive Pandemic Potential*, 9 J. NAT'L SEC. L. & POL'Y 53, 65 (2018). “Although the IHR is designed to build and maintain capacities to detect, assess, report, and respond to a potential PHEIC [public health emergency of international concern], the core capacity obligation also indirectly strengthens national public healthcare systems and, ultimately, the global health risk framework.” *Id.*
- ²⁵ Gostin & Katz, *supra* note 21, at 270 (“State Parties were required to develop and maintain core capacities by 2012, with a possible extension to 2014, and an additional extension to 2016.”).
- ²⁶ Adam Kamradt-Scott, *Achieving Global Health Security: The Implementation of International Health Regulations*, GENEVA CTR. FOR SEC. POL'Y (2016). Reliable and detailed data about IHR compliance is difficult to obtain, as compliance is measured via self-assessments by Member States. These assessments do not use quantitative metrics and, as such, have been criticized as unreliable. Gostin & Katz, *supra* note 21, at 278. Nonetheless, it is widely agreed that most States do not have sufficient domestic systems to comply with their surveillance and mitigation responsibilities. A 2014 study, for example, found that only 64 of 194 Member States had achieved IHR’s obligations for essential surveillance, laboratory, data management, and other services as of 2014. WORLD HEALTH ORG., ONE YEAR INTO THE EBOLA EPIDEMIC, at ch. 13 (2015) (chapter title: “The Warnings the World Did Not Heed”).
- ²⁷ Nirmal Kandel, Stella Chungong, Abbas Omaar & Jun Xing, *Health Security Capacities in the Context Of COVID-19 Outbreak: An Analysis of International Health Regulations Annual Report Data from 182 Countries*, 395 LANCET 1047 (2020).
- ²⁸ There is a general consensus that low-income regions face greater challenges in obtaining IHR compliance than those with greater income. See, e.g., Craig Murray, *Implementing the New International Health Regulations: The Role of the WTO’s Sanitary and Phytosanitary Agreement*, 40 GEO. J. INT’L L. 625, 641 (2009); Gostin & Katz, *supra* note 21; see also WHO – World Bank Strategic Partnership Financing Preparedness, WORLD HEALTH ORG. (2019), <https://extranet.who.int/sph/news/who-%E2%80%93-world-bank-strategic-partnership-financing-preparedness> (“Health security threats have an especially destructive impact on development investment and GDP in low-income and lower-middle income countries.”).
- ²⁹ See David Bishop, *Lessons from SARS: Why the WHO Must Provide Greater Economic Incentives for Countries to Comply with International Health Regulations*, 36 GEO. J. INT’L L. 1173 (2005); Murray, *supra* note 28 (“[C]ountries may be forced to decide between dedicating resources to the IHR or to more urgent public health crises, such as malaria.”).
- ³⁰ See, e.g., Laurie Garrett, *Ebola’s Lessons: How the WHO Mishandled the Crisis*, 94 FOREIGN AFFS. 80, 86–87 (2015).
- ³¹ See generally *id.* (describing the domestic effects of the 2014 Ebola outbreak on countries with weak healthcare systems).
- ³² See, e.g., Monica Rull, Ilona Kickbusch & Helen Lauer, *International Responses to Global Epidemics: Ebola and Beyond*, 6 INT’L DEV. POL’Y (2015) (detailing how Ebola spread undetected due to poor healthcare infrastructure).
- ³³ This contribution does not seek to delve into the pros and cons of proposed financial reforms, but acknowledges that several ideas have been proposed. These reforms generally fall into three different categories: (1) those seeking increased contributions from wealthy Member States, e.g., Bishop, *supra* note 28; (2) those looking to create collaborations with other non-governmental organizations (NGOs), see Murray, *supra* note 28; and (3) those proposing new mechanisms for resource distribution, see 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 (2015).
- ³⁴ Jones et al., *supra* note 11.

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- ³⁵ Kandel et al, *supra* note 27.
- ³⁶ Tess Aitken, Ken Lee Chin, Danny Liew & Richard Ofori-Asenso, *Rethinking Pandemic Preparation: Global Health Security Index (GHSI) is predictive of COVID-19 burden, but in the opposite direction*, 81 J. INFECTION 318 (2020); *Global Health Security Index*, NUCLEAR THREAT INITIATIVE & JOHNS HOPKINS CRT. FOR HEALTH SEC., <https://www.ghsindex.org/> (last visited Mar. 15, 2021).
- ³⁷ *Infectious Disease Framework*, CTRS. DISEASE CONTROL, <https://www.cdc.gov/ddid/docs/ID-Framework-2pageoverview.pdf> (last visited Mar. 15, 2021).
- ³⁸ Kandel et al, *supra* note 27.
- ³⁹ See Allyn L. Taylor, Roojin Habibi, Gian Luca Burci, Stephanie Dagrón, Mark Eccleston-Turner, Lawrence O. Gostin, Benjamin Mason Meier, Alexandra Phelan, Pedro A. Villareal, Alicia Ely Yamin, Danwood Chirwa, Lisa Forman, Gorik Ooms, Sharifah Sekalala, Steven J. Hoffman, *Solidarity in the Wake of COVID-19: Reimagining the International Health Regulations*, 396 LANCET 82 (2020).
- ⁴⁰ The Ebola pandemic highlights the importance of this, as it was a non-State actor who sounded the alarm for a developing outbreak.
- ⁴¹ Emily MacDonald, Preben Aavitsland, Dounia Bitar & Katrine Borgen, *Detection of Events of Public Health Importance Under the International Health Regulations: A Toolkit to Improve Reporting of Unusual Events by Frontline Healthcare Workers*, 11 BMC PUB. HEALTH 713 (2011).
- ⁴² *Id.*
- ⁴³ Gostin & Katz, *supra* note 21.
- ⁴⁴ The four components are: Is this public health impact of the event serious?; Is the event unusual or unexpected?; Is there a significant risk of international spread?; Is there a significant risk of international travel or trade restrictions?
- ⁴⁵ Thomas Hausteijn, Helge Hollmeyer, Max Hardiman, Stephan Harbarth & Didier Pittet, *Should this event be notified to the World Health Organization? Reliability of the International Health Regulations notification assessment process*, 89 BULL. WORLD HEALTH ORG. 269 (2011), <https://www.who.int/bulletin/volumes/89/4/10-083154/en/>; Michael Edelstein, David L. Heymann, Johan Giesecke & Julius Weinberg, *Validity of International Health Regulations in Reporting Emerging Infectious Diseases*, 18 EMERGING INFECTIOUS DISEASES 1115 (2012); Aranka Anema, Eric Druyts, Helge G. Hollmeyer, Maxwell C. Hardiman & Kumanan Wilson, *Descriptive review and evaluation of the functioning of the International Health Regulations (IHR) Annex 2*, GLOB. HEALTH (2012), <https://globalizationandhealth.biomedcentral.com/track/pdf/10.1186/1744-8603-8-1.pdf>.
- ⁴⁶ Michael G. Baker & David P. Fidler, *Global Public Health Surveillance Under New International Health Regulations*, 12 EMERGING INFECTIOUS DISEASES 1058 (2006).
- ⁴⁷ IHR, *supra* note 2, at annex 1.
- ⁴⁸ Anema et al., *supra* note 45; Edelstein et al., *supra* note 45; Hausteijn et al., *supra* note 45.
- ⁴⁹ *WHO Technical Consultation on the Implementation and Evaluation of Annex 2 of the International Health Regulations (2005)*, WORLD HEALTH ORG. (2009), https://www.who.int/ihr/summary_report_annex2.pdf (WHO/HSE/IHR/2009.10).
- ⁵⁰ Internal actors have recommended revisions to this instrument, but as of this writing, none have been adopted. *E.g.* World Health Org., Report of the Ad Hoc Expert Group on Annex 2, Decision instrument for the assessment and notification of events that may constitute a public health emergency of international concern, Doc. A/IHR/IGWG/2/INF.DOC./4 (Feb. 22, 2005), https://apps.who.int/gb/ghs/pdf/IHR_IGWG2_ID4-en.pdf.
- ⁵¹ Hausteijn et al., *supra* note 45.
- ⁵² *Id.*
- ⁵³ Edelstein et al., *supra* note 45.
- ⁵⁴ *Id.*
- ⁵⁵ *Id.*
- ⁵⁶ *WHO Technical Consultation on the Implementation and Evaluation of Annex 2*, *supra* note 49.
- ⁵⁷ Edelstein et al., *supra* note 45, at 1120 (finding that more specificity was needed “about what makes an event serious or unusual” and recommending “setting more prescriptive seriousness and unusualness criteria”). The authors note that these steps “would improve specificity without decreasing sensitivity and in turn increasing PPV.” They also reinforce that “focus should be placed on keeping the number of missed events to a minimum.” *Id.*
- ⁵⁸ David N. Durrheim, Lawrence O. Gostin & Keymanthri Moodley, *When does a major outbreak become a Public Health Emergency of International Concern*, 20 LANCET 887 (2020).
- ⁵⁹ Anema et al., *supra* note 45.
- ⁶⁰ See, *e.g.*, Edelstein et al., *supra* note 45, at 1120.

⁶¹ See Barbara von Tigerstrom, *The Revised International Health Regulations and Restraint of National Health Measures*, 13 HEALTH L.J. 35, 39 (2005). Although the WHO has also declared severe outbreaks to be “pandemics” in the past, a pandemic declaration creates a semantic, not legal, distinction. Pedro A. Villarreal, *Pandemic Declarations of the World Health Organization as an Exercise of International Public Authority: The Possible Legal Answers to Frictions Between Legitimacies*, 7 GOETTINGEN J. INT’L L. 95, 122-23 (2016). See also Pedro Villarreal’s contribution in this volume.

⁶² This is broadly defined as “any illness or medical condition, irrespective of origin or source, that presents or could present significant harm to humans.” IHR, *supra* note 2, art. 1.

⁶³ IHR, *supra* note 2, art. 12; see von Tigerstrom, *supra* note 61, at 39.

⁶⁴ David P. Fidler, *To Declare Or Not to Declare: The Controversy over Declaring a Public Health Emergency of International Concern for the Ebola Outbreak in the Democratic Republic of the Congo*, 14 ASIAN J. WTO & INT’L HEALTH L. & POL’Y 287, 291–93 (2019); Chang-fa Lo, *The Missing Operational Components of the IHR (2005) from the Experience of Handling the Outbreak of COVID-19: Precaution, Independence, Transparency and Universality*, 15 ASIAN J. WTO & INT’L HEALTH L. & POL’Y 1, 9–11 (2020) (criticizing PHEIC procedure in the early days of the COVID-19 pandemic).

⁶⁵ World Health Org., Statement on the First Meeting of the International Health Regulations (2005) Emergency Committee Regarding the Outbreak of Novel Coronavirus (2019-nCoV) (Jan. 23, 2020), [https://www.who.int/news/item/23-01-2020-statement-on-the-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-\(2019-ncov\)](https://www.who.int/news/item/23-01-2020-statement-on-the-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov)) [hereinafter First Meeting of the IHR Emergency Committee].

⁶⁶ First Meeting of the IHR Emergency Committee, *supra* note 65; see also Gostin et al., *supra* note 7.

⁶⁷ The Committee acknowledged concerning information about the potential threat including that “human-to-human transmission is occurring” and that there was “a preliminary R0 estimate of 1.4-2.5,” indicating exponential transmission that is several folds higher than influenza, as well as the fact that “25% [of confirmed cases] are reported to be severe.” First Meeting of the IHR Emergency Committee, *supra* note 65.

⁶⁸ See Taylor et al., *supra* note 39; Mullen et al., *supra* note 5; Fidler, *supra* note 64.

⁶⁹ Mark Eccleston-Turner & Adam Kamradt-Scott, *Transparency in IHR emergency committee decision making: the case for reform*, BMJ GLOB. HEALTH, at 3 (2019).

⁷⁰ See, e.g., *The Politics of PHEIC*, 292 LANCET 2470 (2019) (“The decision [for a third time of the EC to not declare a PHEIC in the DRC] appears more political than technical and that is a mistake. The committee seems to have favoured local protectiveness over global galvanising.”); Garrett, *supra* note 30 (criticizing the politicized nature of the WHO response to the 2009 Ebola outbreak in the Democratic Republic of the Congo). Most academics agree that the WHO should be more readily able to declare a PHEIC and that such a declaration should be based on science, not politics. However, the WHO does not exist in a vacuum and the political realities of global health must be considered in any proposed modification to the IHR. See Villarreal, *supra* note 61; Fidler, *supra* note 64, at 292 (“[T]he PEIC authority is not, and was not intended to be, merely an epidemiological exercise. It demands political leadership from the Director-General. . . .”).

⁷¹ Mullen et al., *supra* note 5.

⁷² Durrheim et al., *supra* note 58; see also Mullen et al., *supra* note 5 (concluding that a “more standardised and transparent process for ECs is needed to assess the event and determine if a PHEIC declaration is warranted for the public health community to understand the decision-making process” and that “[g]uidelines that include the standardised definitions and how they should be assessed for each of the three core IHR criteria is necessary for future PHEIC declarations to ensure confidence in the IHR EC process remains”).

⁷³ Taylor et al., *supra* note 39.

⁷⁴ Barna, *supra* note 78; see also Gian Luca Burci, *The Outbreak of COVID-19 Coronavirus: Are the International Health Regulations Fit For Purpose?*, EJIL:TALK! (Feb. 27, 2020), <https://www.ejiltalk.org/the-outbreak-of-covid-19-coronavirus-are-the-international-health-regulations-fit-for-purpose/> (discussing the importance of credibility for the WHO).

⁷⁵ See, e.g., Arielle Silver, *Obstacles to Complying with the World Health Organization’s 2005 International Health Regulations*, 26 WIS. INT’L L.J. 229 (2008) (detailing, among other examples, the harsh economic consequences experienced by Peru in response to its disclosure of a cholera outbreak to the WHO); Bradley J. Condon & Tapen Sinha, *The Effectiveness of Pandemic Preparations: Legal Lessons from the 2009 Influenza Epidemic*, 22 FLA. J. INT’L L. 1 (2010) (detailing harsh response to H1N1 in Mexico and noting the economic consequences); Barbara von Tigerstrom & Kumanan Wilson, *COVID-19 travel restrictions and the International Health Regulations (2005)*, 5 BMJ GLOB. HEALTH 2020 (documenting trade and travel restrictions and resulting economic consequences imposed during the COVID-19 pandemic against the advice of the WHO). The WHO Director-General has acknowledged the negative consequences that come from PHEIC declarations. See, e.g., Statement, World Health Org., Statement on the Meeting of the International Health Regulations (2005) Emergency Committee for Ebola Virus Disease in the Democratic Republic of the Congo on 12 February 2020 (Feb. 12, 2020),

[https://www.who.int/news-room/detail/12-02-2020-statement-on-the-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-for-ebola-virus-disease-in-the-democratic-republic-of-the-congo-on-12-february-2020](https://www.who.int/news-room/detail/12-02-2020-statement-on-the-meeting-of-the-international-health-regulations-(2005)-emergency-committee-for-ebola-virus-disease-in-the-democratic-republic-of-the-congo-on-12-february-2020).

⁷⁶ Anema et al., *supra* note 45.

⁷⁷ See generally Bishop, *supra* note 29.

⁷⁸ WORLD HEALTH ORG., ERF: EMERGENCY RESPONSE FRAMEWORK, (2d ed. 2017), <https://apps.who.int/iris/bitstream/handle/10665/258604/9789241512299-eng.pdf?sequence=1>; see also Mark Barna, *WHO process for declaring health emergencies scrutinized: COVID-19 response shows limitations*, NATION'S HEALTH (2020).

⁷⁹ World Health Org., PANDEMIC INFLUENZA PREPAREDNESS FRAMEWORK FOR THE SHARING OF INFLUENZA VIRUSES AND ACCESS TO VACCINES AND OTHER BENEFITS (2011), https://www.who.int/influenza/resources/pip_framework/en/; World Health Org., Guidance, Pandemic Influenza Preparedness and Response (2009), https://www.who.int/influenza/resources/documents/pandemic_guidance_04_2009/en/. This six-phase system is designed to enhance surveillance and response given that “influenza pandemics are unpredictable, but recurring events that can have severe consequences on societies,” which is similar to the situations the IHR is meant to manage.

⁸⁰ The original six-phase pandemic paradigm was later revised to a four-phase influenza pandemic continuum that incorporated emergency risk management. *Pandemic Influenza Risk Management*, WORLD HEALTH ORG. (2017), <https://apps.who.int/iris/bitstream/handle/10665/259893/WHO-WHE-IHM-GIP-2017.1-eng.pdf?sequence=1>.

⁸¹ See Rachel Holloway, Sonja A. Rasmussen, Stephanie Zaza, Nancy J. Cox & Daniel B. Jernigan, *Updated Preparedness and Response Framework for Influenza Pandemics*, 63 CDC MORBIDITY & MORTALITY WKLY. REP. – REC. & REPS. 1 (2014), <https://www.cdc.gov/flu/pandemic-resources/pdf/mmwr-rr6306.pdf>; Noreen Quall, Alexandra Levitt, Neha Kanade, Narue Wright-Jegede, Stephanie Dopson, Matthew Biggerstaff, Carrie Reed & Amra Uzicanin, *Community Mitigation Guidelines to Prevent Pandemic Influenza – United States, 2017*, 66 CDC MORBIDITY & MORTALITY WKLY. REP. – REC. & REPS. 1 (2017), <https://www.cdc.gov/mmwr/volumes/66/rr/pdfs/rr6601.pdf>. Maintaining several different WHO processes could cause confusion, as evidenced by the simultaneous use of multiple frameworks during the Ebola crisis and influenza pandemic. Gostin & Katz, *supra* note 21.

⁸² See Andra Le Roux-Kemp, *International and Operational Responses to Disease Control: Beyond Ebola and Epistemological Confines*, 15 IND. HEALTH L. REV. 247 (2018) (commenting on the assumptions about global health systems made by the IHR and the reality of those systems).

⁸³ Taylor et al., *supra* note 39.

⁸⁴ *Id.*

⁸⁵ Lo, *supra* note 64.

⁸⁶ World Health Org., Report of the Ebola Interim Assessment Panel (July 2015), <https://www.who.int/csr/resources/publications/ebola/report-by-panel.pdf?ua=1>.

⁸⁷ *Id.* ¶ 23. The Report also documented stakeholder confusion regarding notification requirements, which supports the idea that the IHR requires more precise definitions for disease notification. Yet while the Report outlines several areas of improvement in the IHR process, it did not provide detail on what would constitute an intermediate level of warning nor what powers and next steps are triggered by such a declaration. Further efforts are needed to address these gaps.

⁸⁸ *Id.* ¶¶ 23–24.

⁸⁹ *Id.* ¶ 69.

⁹⁰ See, e.g., Gostin et al., *supra* note 7.

⁹¹ Durrheim et al., *supra* note 58.

⁹² Proposal for a Scorecard for a Public Health Emergency of International Concern, BERLIN INST. FOR GLOB. HEALTH, https://institut-fuer-globale-gesundheit.de/wp-content/uploads/2020/01/Final_Proposal_Scorecard_IGGB_310120.pdf (last visited Mar. 24, 2021).

⁹³ Cf. Silver, *supra* note 75 (detailing how the current system leads to heavy economic consequences for compliance with the IHR, thereby disincentivizing disease reporting).

⁹⁴ Gostin & Katz, *supra* note 21, at 305.

⁹⁵ Alison Agnew, *A Combative Disease: The Ebola Epidemic in International Law*, 39 B.C. INT'L & COMPAR. L. REV. 97 (2016) (describing the need for the distribution of resources by the WHO to low-income countries in the context of Ebola).

⁹⁶ J. Benton Heath, *Global Emergency Power in the Age of Ebola*, 57 HARV. INT'L L.J. 1 (2016) (discussing tensions which arise from complex national and international webs of decision-making).

⁹⁷ Lawrence O. Gostin, *The World Health Organization's Historic Moment of Peril and Promise: Reimagining a Global Health Agency Fit for Purpose in the 21st Century*, 11 GLOB. HEALTH GOV. 57 (2017).

⁹⁸ Morten Broberg, *A Critical Appraisal of the World Health Organization's International Health Regulations (2005) in Times of Pandemic: It Is Time for Revision*, 11 EUR. J. RISK REGUL. 202 (2020) (commenting on lack of respect for WHO trade/travel restrictions among Member States).