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The Containment Bias of the WHO International Health Regulations

By Ginevra Le Moli*

Abstract

The ordinary meaning of the term 'prevention' is to prevent harm from occurring. But what 'harm'? For over 170 years, the system now embodied in the World Health Organization's (WHO) International Health Regulations (IHRs) has answered this question by focusing on the prevention of disease 'spread' across countries, rather than on the 'spillover' of pathogens from animals to humans, which constitute the main source of pandemic risk today. This bias towards the containment of disease has deep roots. In the historical context from the IHRs emerged, focusing on pathogen spillover was beyond the possibilities of the science of the time; it was also pointless to the extent that the effort focused on pathogens which were already prevalent in humans, causing diseases such as cholera or plague. Transposed to the present day, this containment bias has important consequences for global health governance. Most importantly among these is that the global health security architecture still lacks a specific system to prevent spillovers of pathogens at the origin of outbreaks and subsequent spread of diseases such as COVID-19, SARS, MERS or Ebola. This article investigates the roots of this focus on containment. Relying on the proceedings of the International Sanitary Conferences that preceded the IHRs, as well as on an untapped documentary archive relating to the revision of the IHRs between 1995-2005, the article explains the reasons underpinning this enduring bias and its implications for global health governance.

Keywords: International Health Regulations, COVID-19, WHO, structural bias, containment bias.

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I. Introduction

The ordinary meaning of the term 'prevention' is to prevent harm from occurring. But what 'harm'? For over 170 years, the system now embodied in the World Health Organization's (WHO) International Health Regulations (IHRs or the Regulations)[1] has answered this question by focusing on the prevention of disease 'spread' across countries, rather than on the 'spillover' of pathogens from animals to humans, which constitutes the main source of pandemic risk today.[2] This bias towards the containment of disease has deep roots. In the historical context from which the IHRs emerged, a focus on pathogen spillover was beyond the possibilities of the science of the time; it was also futile to the extent that containment focused on pathogens already prevalent in humans, such as those which cause diseases such as cholera or plague. Transposed to the present day, however, this containment bias has important consequences for global health governance. Most importantly among these is that the global health security architecture still lacks a specific system to prevent spillovers of pathogens at the origin of outbreaks and subsequent spread of diseases such as COVID-19, Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS) or Ebola. This article investigates the roots of this focus on containment. Relying on the proceedings of the International Sanitary Conferences that preceded the IHRs, as well as on an untapped documentary archive relating to the 1995-2005 IHRs revision process, the article explains the reasons underpinning this bias and its implications for global health governance.

In 1851, the French Ministry of Foreign Affairs convened the first International Sanitary Conference in Paris with the aim to regulate 'in a uniform manner the systems of quarantines and of lazarettos in the

[1] International Health Regulations (adopted 23 May 2005, entered into force 15 June 2007) 2509 UNTS 79.

[2] AS Bernstein and others, 'The Costs and Benefits of Primary Prevention of Zoonotic Pandemics' (2022) 8 Science Advances 1, 1-2; SS Morse and others, 'Prediction and Prevention of the Next Pandemic Zoonosis' (2012) 380 Lancet 1956; MEJ Woolhouse and S Gowtage-Sequeria, 'Host Range and Emerging and Reemerging Pathogens' (2005) 11 Emerging Infectious Diseases 1842.

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Mediterranean'.[3] The objective was to work out an agreement 'on the measures to be taken to *limit the spread of epidemic diseases*',[4] without excessive interference with trade and travel. Cholera had long been restricted primarily to India, but, since 1829, it had begun to spread rapidly to other parts of the world, including to the water systems of European urban centres, finding European medicine unprepared. The 1851 conference, and the thirteen conferences that followed up until 1938,[5] were an effort to build a uniform system of maritime quarantine as a line of defence between Western Europe and 'the East.'[6] The agenda of these meetings was set by European powers to protect themselves from diseases coming from abroad.[7] The aim of all the fourteen conferences was to prevent the spread of five so-called pestilential diseases (cholera, plague, yellow fever, smallpox, and typhus) while limiting disruptions of international trade and traffic. The approach was to define permissible quarantine measures and establish a network of mutual information. All five diseases had long affected humans. The spillover events of the relevant pathogens had already happened, at an unknown moment in the past. The focus on containment of disease spread reflected that fact. Moreover, a focus on the prevention of pathogen spillover was still far beyond the possibilities of nineteenth century science. Containment of the spread of these diseases was therefore a reasonably, even obvious approach, and an unsurprising reaction from European powers with respect to the 'uncivilized' world.

However, more than 170 years after the first International Sanitary Conference, what may have seemed obvious at the time is not necessarily so today. Despite the sea change in the scientific understanding of

[3] Procès-verbaux de la Conférence sanitaire internationale ouverte à Paris le 27 juillet 1851 (Paris, Imprimerie Nationale 1851) first session, 1 (Paris 1851).

[4] N Howard-Jones, *The Scientific Background of the International Sanitary Conferences, 1851–1938* (WHO 1975) 9 (emphasis added); See also 11, 12, 16.

[5] The thirteen International Sanitary Conferences held after 1851 were Paris, 1859; Istanbul, 1866; Vienna, 1874; Washington, 1881; Rome, 1885; Venice, 1892; Dresden, 1893; Paris, 1894; Venice, 1897; Paris, 1903; Paris, 1911–1912; Paris, 1926; Paris, 1938. The most extensive study on the international sanitary conferences is Howard-Jones, *The Scientific Background of the International Sanitary Conferences*. See also NM Goodman, *International Health Organizations and Their Work* (2nd edn, Churchill Livingstone 1971); A Barkhuus, 'The Sanitary Conferences' (1943) 5 Ciba Symposium 1563; A Kramer, M Maylott, and J Foley, 'International Health Security in the Modern World: The Sanitary Conventions and the World Health Organisation' (1947) 437 Department of State Bulletin 953; WHO, *The First Ten Years of the World Health Organization* (WHO 1958). For recent accounts, see B Hillemand and A Ségal, 'Les Six Conférences Sanitaires Internationales de 1851 a 1885: Prémices de l'Organisation Mondiale de la Santé (OMS)' (2014) 48 Histoire des Sciences Médicales 131; P Baldwin, *Contagion and the State in Europe, 1830–1930* (CUP 1999); K Maglen, *Intercepting Infection: Quarantine, the Port Sanitary Authority and Immigration in Late Nineteenth and Early Twentieth Century Britain* (PhD thesis, University of Glasgow 2001).

[6] See M Cueto, T Brown, E Fee, *The World Health Organization: A History* (CUP 2019) 10-15; R Peckham (ed), *Empires of Panic: Epidemics and Colonial Anxieties* (HKU Press 2015).

[7] M Cueto, 'The History of International Health: Medicine, Politics, and Two Socio-Medical Perspectives, 1851 to 2000' in C McInnes, K Lee, and J Youde (eds), *The Oxford Handbook of Global Health Politics* (OUP 2018) 20, 20. See also AE Birn, 'The Stages of International (Global) Health: Histories of Success or Successes of History?' (2009) 4 Global Public Health 50; M Harrison, *Contagion: How Commerce Has Spread Disease* (YUP 2012).

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infectious diseases, in political conditions, and in the nature of the threats posed by emerging and re-emerging infectious diseases, the same focus on containment remains at the heart of the global health security architecture. The IHRs, first adopted in 1951 (under the name International Sanitary Regulations, 'ISRs'), then revised in 1969 (renamed as IHRs) and, lastly, in 2005, constitute a modern version of the first conventions on infectious diseases. A revision process was prompted in the mid 1990s by concerns about increasing global health threats and the need to respond with more effective surveillance and control practices. In the very terms used by the World Health Assembly (WHA) when the revision process was set in motion, the IHRs were aimed at '*preventing infection from spreading* from countries where it exists or by containing it upon arrival'.[8] During the 1995-2005 revision process, there was a strong consensus that the IHRs had 'to provide an effective basis *for preventing international spread of infectious diseases*'.[9] Following a 'defensive' and 'reactive' approach, the revised IHRs were meant to 'ensure that States were well prepared to detect and respond to public health threats and emergencies of international concern'.[10] By assuming and entrenching this containment focus in the revision process, the 2005 version of the IHRs was thus confined mainly to 'rules for global disease triage rather than global disease prevention'.[11]

The purpose of this article is to unveil and characterize this 'containment bias'. It will rely on the concept of 'structural bias', developed in the work of Martti Koskenniemi,[12] which will be applied to two sets of documentary sources. This question will be investigated on the basis of the proceedings of the Sanitary Conferences (Appendix A) and contemporaneous studies, as well as from 76 documents concerning the latest revision process of the IHRs, adopted or submitted between 1994 and 2005 (Appendix B).[13] This material offers a solid documentary basis to chart the influence of the containment bias, identifying its continuous presence over time and, importantly, assessing its present implications for the operation of the global health security architecture.

[8] World Health Assembly (WHA), 'Revision and Updating of the International Health Regulations' (12 May 1995) WHA48.7, preamble (emphasis added) (WHA48.7 (1995)).

[9] WHO, Second Regional Consultation on the Proposed Revised IHRs, WHO-SEARO, 29 June–1 July 2004 (2004), Project: ICP CSR 002, updated 27 September 2004, at 11 (emphasis added) (WHO, Second Regional Consultation, WHO-SEARO); WHO, 'Report: Consultation on the Revision of the IHRs in The Western Pacific Region, Manila, Philippines 28-30 April 2004' (June 2004) (WP) ICP/CSR/1.1/001, 2 (WHO Report Consultation, Western Pacific Region).

[10] D Fidler, 'From International Sanitary Conventions to Global Health Security: The New International Health Regulations' (2005) 4 Chinese Journal of International Law 325, 389.

[11] ibid.

[12] M Koskenniemi, *From Apology to Utopia: The Structure of International Legal Argument: Reissue with a New Epilogue* (CUP 2005) 607.

[13] There is no direct record of the *travaux préparatoires* of the 1951, 1969 and 2005 versions of the IHRs. On this point, see also A Kamradt-Scott, 'The International Health Regulations (2005): Strengthening Their Effective Implementation and Utilisation' (2019) 16 International Organizations Law Review 242, 266-267.

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The inquiry is timely. During a special session of the WHA held in December 2021, WHO member states agreed to start negotiations on an international instrument on pandemic prevention and established an intergovernmental negotiating body for such an end.[14] The final outcome will be presented at the 77th WHA in 2024. In addition, on January 2022, the WHO Executive Board urged member states 'to take all appropriate measures to consider potential amendments' to the IHRs.[15] The challenges involved in attempting to contain disease spread in a highly interconnected global system became all too visible during the COVID-19 pandemic. These and other shortcomings of the existing global health architecture built the momentum for such initiatives.[16] It remains to be seen whether these processes will ultimately result in a new international instrument or in amendments to the IHRs addressing spillover prevention. Notwithstanding the outcome, emerging zoonoses represent a primary threat to human health[17] and, if all known pathogens constitute only a small part of the total potential pathogens that are (or can be) present in nature,[18] it is predominantly the risk posed by the yet-to-emerge (or unknown) pathogens that requires more attention from a policy perspective. There is a need to

[14] WHA, 'Decision SSA2(5): The World Together: Establishment of an Intergovernmental Negotiating Body to Strengthen Pandemic Prevention, Preparedness and Response' (1 December 2021) WHA74(16); See, WHO, 'Resolution WHA 74.16: Social Determinants of Health' in WHO, 'Seventy-Forth World Health Assembly, Geneva, 24 May – 1 June 2021, Resolutions and Decisions Annexes' (2021) WHA74/2021/Rec/1, 60. See, 'Carbis Bay G7 Summit Communiqué: Our Shared Agenda for Global Action to Build Back Better' (13 June 2021) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1001128/Carbis_Bay_G7_Summit_Communique__PDF__430KB__25_pages_.pdf>.

[15] WHO, (Resolution of the Executive Board) 'Strengthening the International Health Regulations (2005): A Process For Their Revision Through Potential Amendment' (26 January 2022) EB150(3). The United States delegation will lead a series of 'informal' member state negotiations to reach consensus on an IHRs reform resolution for approval at the 2022 75th WHA.

[16] WHA, 'Resolution WHA73.1: COVID-19 Response' Seventy-Third World Health Assembly (19 May 2020) WHA73.1; WHO, 'Report of the Review Committee on the functioning of the IHR (2005) during the COVID-19 response' (30 April 2021) A74/9 Add.1. See also Council of the European Union, Council Decision (EU) 2021/1101 of 20 May 2021 on the position to be taken on behalf of the European Union in the seventy-fourth session of the World Health Assembly (2021) OJ L 238/79, 80; Statement by the President of the European Council, Charles Michel, at the Special Session of the General Assembly in Response to the Coronavirus Disease (COVID-19) Pandemic, New York (3 December 2020).

[17] Bernstein, and others, 'The Costs and Benefits of Primary Prevention of Zoonotic Pandemics', 1-2; KE Jones, and others e, 'Global Trends in Emerging Infectious Diseases' (2008) 451 Nature 990–93; MEJ Woolhouse and S Gowtage-Sequeria, 'Host Range and Emerging and Reemerging Pathogens'; M Woolhouse and E Gaunt, 'Ecological Origins of Novel Human Pathogens' (2007) 33 Critical Reviews in Microbiology 231; LH Taylor, Latham SM and ME Woolhouse, 'Risk Factors for Human Disease Emergence' (2001) 356 Philosophical Transactions of the Royal Society B: Biological Sciences 983; P Daszak, AA Cunningham and AD Hyatt, 'Emerging Infectious Diseases of Wildlife—Threats to Biodiversity and Human Health' (2000) 287 Science 443.

[18] SJ Anthony, JH Epstein, KA Murray, I Navarrete-Macias, CM Zambrana-Torrelio, A Solovyov, R Ojeda-Flores and others, 'A Strategy to Estimate Unknown Viral Diversity in Mammals', (2013) 4 mBio 1; DP Bebber and others, 'Predicting Unknown Species Numbers Using Discovery Curves' (2007) Philosophical Transactions of the Royal Society B: Biological Sciences 1651.

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understand why addressing spillover prevention (also called 'deep prevention')[19] may be warranted.

In Part II of the article, I briefly characterize what I understand by a containment bias, in order to prepare the ground for subsequent, and more detailed, discussion. Then, in Part III, I survey the state of the literature and explain the methodology retained to analyse the documentary evidence for my argument. Parts IV and V provide deep dives into the two periods covered by the documentary sources, but they do so in different ways because the first period is much longer and the related volume of materials vast. Part IV covers material (Appendix A) that will be familiar to those with expertise in global health law and governance, but far less so beyond those circles. Even for the specialized reader, my hope is that the detailed examination of the archival evidence in this Part will be informative of how deeply rooted was the focus on containment or, in other words, how natural it seemed at the time. Part V provides a fine-grained analysis of 76 documents relating to the 1995-2005 revision of the IHRs (Appendix B). The seamless transition from the pre- to the post-2005 IHRs system is charted in order to emphasise the stark contrast between, on the one hand, this continuity of approach and, on the other hand, the sea change in the nature of the threats and scientific possibilities. The basic contention of the article is that what may have been obvious historically no longer is so today. The second archive is methodologically significant in its own right because of the lack of direct records of the *travaux préparatoires* of this revision process. But here it is only used to shed light on the persistence of a containment bias in the 2005 version of the IHRs. Part VI outlines possible directions for further research and concludes.

II. The Containment Bias

Historically, the driver of international health co-operation was 'not a wish for the general betterment of the health of the world, but the desire to protect certain favoured (especially European) nations from contamination by their less-favoured (especially Eastern) fellows'.[20] From the middle of the nineteenth century onwards, the system was built on the assumption that the spread of exotic diseases could at best be contained. As noted earlier, the selection of a containment approach, seen in the light of the limited scientific understanding of disease emergence and spread in the nineteenth century and considering that the most dreaded diseases were prevalent in what, to European eyes, were mere colonies or uncivilized countries, is unsurprising. What is puzzling is the persistence

[19] The expression is used by JE Viñuales, S Moon, G Le Moli, GL Burci, 'A Global Pandemic Treaty Should Aim For Deep Prevention' (2021) 397(10287) *The Lancet* 1791.

[20] N Howard-Jones, 'Origins of International Health Work' (1950) 1(4661) British Medical Journal 1032, 1035 (emphasis added).

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of this focus in today's global health security architecture, as embodied in the IHRs.

The literature on the IHRs, and its shortcomings, has concentrated on specific institutional and legal developments included in the 2005 revision, but has not examined this more macroscopic aspect. At the time, prominent scholars quite rightly hailed the adoption of the new IHRs as a 'landmark achievement'[21] or as 'the high-watermark' in the WHO's influence on trade and human rights issues[22] or, still, as 'one of the most radical and far-reaching changes in international law on public health since the beginning of international health co-operation in the mid-nineteenth century'.[23] Obijifor Aginam noted that the revised IHRs empowered the WHO with 'the authority to deploy non-Westphalian strategies in future global disease outbreaks'.[24] Ijaz and colleagues noted that '[p]roperly and fully implemented, IHR should usher in a new global era of international communication, cooperation, and unprecedented security against the epidemic threats that have plagued humanity since ancient times'.[25] These views contrasted with those of other scholars, who were more critical of the 2005 revision outcome. It was noted, for example, that the 2005 IHRs prioritized disease surveillance[26] or security and economic concerns over health,[27] or that they lacked specificity on ways of collaboration among countries where 'core capacities' were not (or not fully) developed.[28] It was also argued that the IHRs unduly affected state sovereignty[29] and did not have sufficient enforceability mechanisms[30] or adequate dispute resolution means.[31] Another line of criticism concerned the high risk of politicization of disease outbreaks[32] or the intended beneficiaries of the new framework.[33]

[21] Kamradt-Scott, 'The International Health Regulations (2005)', 248.
[22] LO Gostin, 'A Proposal for a Framework Convention on Global Health' (2007) 10 Journal of International Economic Law 996.
[23] Fidler, 'From International Sanitary Conventions to Global Health Security', 326.
[24] O Aginam, 'Globalization of Health Insecurity: The World Health Organization and the New International Health Regulations' (2006) 25 Medicine & Law 672.
[25] K Ijaz, E Kasowski, R Arthur, F Angulo and SF Dowell, 'International Health Regulations – What Gets Measured Gets Done' (2012) 18 Emerging Infectious Diseases 1054.
[26] P Calain, 'Exploring the International Arena of Global Public Health Surveillance' (2007) 22 Health Policy and Planning 2.
[27] ibid.
[28] D Bhattacharya, 'An Exploration of Conceptual and Temporal Fallacies in International Health Law and Promotion of Global Public Health' 35 Journal of Law, Medicine & Ethics (2007) 588.
[29] E Mack, 'The World Health Organization's New International Health Regulations: Incursion on State Sovereignty and Ill-Fated Response to Global Health Issues' (2006) 7 Chicago Journal of International Law 365.
[30] JL Sturtevant, A Anema and JS Brownstein, 'The new International Health Regulations: considerations for global public health surveillance' (2007) 1 Disaster Medicine and Public Health Preparedness 117.
[31] SJ Hoffman, 'Making the International Health Regulations Matter: Promoting Compliance Through Effective Dispute Resolution' in S Rushton and J Youde (eds), *Routledge Handbook of Global Health Security* (Routledge 2015) 239.
[32] JE Suk, 'Sound Science and the New International Health Regulations' (2007) 1 Global Health Governance 1.
[33] S Rushton, 'Global Health Security: Security for Whom? Security from What?' (2011) 59 Political Studies 779.

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Beyond their many differences, none of these works is directly concerned with the broader choice made historically, and preserved in the 2005 IHRs, to organize the entire system as one of prevention of disease spread, i.e. containment, rather than one addressing the prevention of pathogen spillover. For the work that considers the historical roots of the IHRs, this gap might be due to the implicit premise that a focus on pathogen spillover was, at the time, neither scientifically possible nor relevant for pathogens already prevalent in humans. But that alone cannot explain why, in the context that led to the 2005 revision of the IHRs, this containment bias did not receive more attention. It may have been that the emerging research on the drivers of pathogen spillover and their consequences, which was developed enough for structured literature reviews to published on the topic in 2001 and 2005,[34] had not yet permeated governance discussions. But even as an emerging topic, one would have expected more attention. The examination of the second archive (Appendix B) suggests, instead, that the focus on disease containment was so deeply ingrained in the structure of the IHRs that it implicitly limited the range of options that the revision process could pursue. As discussed next, this implicit limitation can be understood by reference to the concept of 'structural bias'.

III. Overview of the Literature and Methodology

Scholars have studied the relationship between health and law from various perspectives. Sustained attention has been paid to the history of international co-operation and international law on infectious diseases.[35] The emergence, development and consolidation of the international legal framework has been periodized into phases. One, which will be discussed later, is characterized as the 'classical regime'[36] and extends from 1851 to 1951, when the WHO adopted the ISRs.[37] Thereafter begins a phase of 'marginalization and stagnation' of the classical regime,[38] which leads to the adoption of the IHRs in 1969[39] and their

[34] Woolhouse, Gowtage-Sequeria, 'Host range and emerging and reemerging pathogens', 1842–1847; LH Taylor, SM Latham and ME Woolhouse, 'Risk Factors for Human Disease Emergence' (2001) 356 Philosophical Transactions of the Royal Society B: Biological Sciences 983.

[35] See Goodman, *International Health Organizations and Their Work*; Howard-Jones, *The Scientific Background of the International Sanitary Conferences* and 'Origins of International Health Work'; D Fidler, *International Law and Infectious Diseases* (OUP 1999) 21–57.

[36] D Fidler, 'Emerging Trends in International Law Concerning Global Infectious Disease Control' (2003) 9 Emerging Infectious Diseases 285, 285–6.

[37] International Sanitary Regulations (adopted on 25 May 1951, entered into force 1 October 1952) 175 UNTS 214. On the first International Sanitary Conference, see Goodman, *International Health Organizations and Their Work*, 42-50; Howard-Jones, *The Scientific Background of the International Sanitary Conferences*, 12-16.

[38] Fidler, 'From International Sanitary Conventions to Global Health Security', 333-338.

[39] International Health Regulations (adopted on 25 July 1969, entered into force 1 January 1982) 764 UNTS 3, art 1.

revision in 2005,[40] with a focus on specific institutional and legal developments. In the past two decades, there has been an effort at conceptualizing 'public health law',[41] including its definition and theoretical foundations.[42] There is an important emerging literature on the international dimensions of health,[43] also providing a systematic exposition of a field defined as 'global health law'.[44] Historical studies have in turn examined the interrelations between international health and imperialism, philanthropy, humanitarianism, multilateralism, bilateralism, decolonization and development.[45]

Within historical studies, one line of inquiry of particular relevance for this article has focused on how modern medicine served both as a symbolic legitimation of colonial rule and as a means for the colonial state to regulate and discipline the bodies of colonial subjects.[46] Some scholars have examined how western science was used to 'promot[e] the security and legitimacy of colonial rule, and concurrently eliminat[e] or subordinat[e] all rival systems of authority'.[47] It was meant to protect the colonizers,[48] the improvement of colonial economies, and the construction of an image of 'humanitarianism' to validate the colonial

[40] WHA, 'Revision of the International Health Regulations' (23 May 2005) WHA58.3 (WHA58.3 (2005)). Fidler, 'From International Sanitary Conventions to Global Health Security', 338-358. For academic analyses of the early stages of the IHR revision process, see D Fidler, 'Globalization, International Law and Emerging Infectious Diseases' (1996) 2 Emerging Infectious Diseases 77; D Fidler, 'Mission Impossible? International Law and Infectious Diseases' (1996) 10 Temple International & Comparative Law Journal 493; BJ Plotkin, 'Mission Possible: The Future of the International Health Regulations' (1996) 10 Temple International & Comparative Law Journal 503; D Fidler, 'Return of the Fourth Horseman: Emerging Infectious Diseases and International Law' (1997) 81 Minnesota Law Review 771; AL Taylor, 'Controlling the Spread of Infectious Diseases: Toward a Reinforced Role for the International Health Regulations' (1997) 33 Houston Law Review 1327.

[41] D Fidler, *International Law and Public Health* (Transnational Publishers 2000); R Martin and L Johnson (eds), *Law and the Public Dimension of Health* (Cavendish Publishing 2001); C Reynolds and G Howse, *Public Health: Law and Regulation* (Federation Press 2004); LO Gostin and AL Taylor, 'Global Health Law: A Definition and Grand Challenges' (2008) 1 Public Health Ethics 53.

[42] LO Gostin and LF Wiley, *Public Health Law: Power, Duty, Restraint* (UCP 2008).

[43] D Fidler, 'The Globalization of Public Health: The First 100 Years of International Health Diplomacy' (2001) 79 Bulletin of the World Health Organization 842; O Aginam, *Global Health Governance: International Law and Public Health in a Divided World* (UTP 2005); LO Gostin, 'Meeting Basic Survival Needs of the World's Least Healthy People: Toward a Framework Convention on Global Health' (2008) 96 Georgetown Law Journal 331–392; AL Taylor and KC Sokol, 'The Evolution of Global Health Law in a Globalized World' in G Ziccardi Capaldo (ed), *The Global Community Yearbook of International Law and Jurisprudence 2007* (OUP 2008) 19.

[44] Gostin and Taylor, 'Global Health Law'; LO Gostin, *Global Health Law* (HUP 2014).

[45] SS Amrith, *Decolonizing International Health, India and South Asia, 1930– 1965* (Palgrave Macmillan 2006); Birn, 'The Stages of International (Global) Health'; Harrison, *Contagion*; R Packard, *A History of Global Health: Interventions into the Lives of Other Peoples* (JHU Press 2016); S Watts, *Epidemics and History: Disease, Power, and Imperialism* (YUP 1997).

[46] Key works in the field include: D Arnold, *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-Century India* (UCP 1993); G Prakash, *Another Reason: Science and the Imagination of Modern India* (PUP 1999); W Anderson, 'Excremental Colonialism: Public Health and the Poetics of Pollution' (Spring 1995) 21 Critical Inquiry 640; M Vaughan, *Curing Their Ills: Colonial Power and African Illness* (SUP 1991).

[47] Arnold, *State Medicine and Epidemic Disease in Nineteenth-Century India*, 139-140; Prakash, *Science and the Imagination of Modern India*, chapter 5.

[48] Amrith, *Decolonizing International Health, India and South Asia.*

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enterprise.[49] It was also important to establish outposts in Africa, Asia and other tropical regions of the world as medical research enclaves that would produce results capable of enhancing the scientific prestige of western medicine.[50] Some medical historians have also argued the inseparability of disease and colonialism, as evidenced by the decimation of American Native Indian populations by imported European diseases (measles, mumps, scarlet fever, smallpox), and the opposite with syphilis.[51] Some studies on the origins of public health diplomacy have specifically argued that a major motivating factor behind the European-led international sanitary conferences in the nineteenth century was the goal of protecting Europe from the importation of diseases.[52]

These contributions provide important insights into the historical emergence and evolution of global health governance. However, whereas they show the colonial context in public health diplomacy, they fall short of bringing into focus its structural expression into legal institutions and, in turn, into legal provisions. In order to do so, a useful concept is that of 'structural bias' developed in the work of Martti Koskenniemi. According to Koskenniemi, international institutions have a structural bias that direct them towards preferring 'some outcomes or distributive choices to other outcomes or choices'.[53] This means that 'there is a structural bias in the relevant legal institutions that makes them serve typical, deeply embedded preferences'.[54] Thus, a structural bias is the result of 'deeply embedded preferences' that institutions form and express more or less explicitly.[55] As he explains, although 'logically speaking, all positions remain open and contrasting arguments may be reproduced at will,

[49] See Watts, *Epidemics and History*; Packard, *A History of Global Health*. On the history of colonial medicine, see also W Anderson, *Colonial Pathologies: American Tropical Medicine, Race, and Hygiene in the Philippines* (DUP 2006); J Farley, *Bilharzia: A History of Imperial Tropical Medicine* (CUP 1991); M Harrison, *Public Health in British India* (CUP 1994).

[50] See H Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950* (UCP 2011); D Neill, *Networks of Tropical Medicine: Internationalism, Colonialism, and the Rise of a Medical Specialty* (SUP 2012); Amrith, *Decolonizing International Health, India and South Asia*; NL Stepan, *Eradication: Ridding the World of Diseases Forever?* (SUP 2011).

[51] See Watts, *Epidemics and History*; JN Hays, *The Burdens of Disease: Epidemics and Human Response in Western History* (RUP 1998); D Porter, *Health, Civilization and the State: A History of Public Health from Ancient to Modern Times* (Routledge 1999).

[52] See Howard-Jones, 'Origins of International Health Work', 1032; and Howard-Jones, *The Scientific Background of the International Sanitary Conferences*, 9, and also 11, 12, 16, 85; Goodman, *International Health Organizations and Their Work*; D Fidler, 'The Globalization of Public Health: Emerging Infectious Diseases and International Relations' (1997) 5 *Indiana Journal of Global Legal Studies* 11, 22. See also O Aginam, 'Between Isolationism and Mutual Vulnerability: A South-North Perspective on Global Governance of Epidemics in an Age of Globalization' (2004) 77 *Temple Law Review* 297, 301.

[53] Koskenniemi, *From Apology to Utopia*, 607; M Koskenniemi, 'Constitutionalism as Mindset: Reflections on Kantian Themes about International Law and Globalization' (2006) 8 Theoretical Inquiries in Law 9, 17; M Koskenniemi, 'The Fate of Public International Law: Between Technique and Politics' (2007) 70 Modern Law Review 1, 1-30; M Koskenniemi, 'The Politics of International Law – 20 Years Later' (2009) 20 European Journal of International Law 7, 11.

[54] Koskenniemi, *From Apology to Utopia*, 607.

[55] ibid. See also Koskenniemi, 'The Politics of International Law', 9.

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in practice it is easy to identify areas of relative stability, moments where a mainstream has consolidated or is only marginally threatened by critique'.[56] As a result, choosing one among several applicable legal regimes 'refers back to what is understood as significant in a problem. And the question of significance refers back to what the relevant institution understands as its mission, its structural bias'.[57]

For present purposes, this work offers a conceptual basis to investigate the containment bias ingrained in the IHRs, the process that led to its formation and, importantly, its present implications. Seen from this perspective, the literature discussed earlier can be re-examined to shed light on the circumstances and vicissitudes of global health governance's focus on containment. As already noted, I use the term 'containment' to emphasise the assumption that pathogen spillover cannot be prevented and that only disease spread can be contained and extinguished. I contrast it to spillover prevention, which shifts the focus from the spread of the disease to the original spillover event(s) whereby a pathogen infects a new species.

In this context, there are three methodological problems that any attempt at charting the historical roots of a structural bias in the design of the IHRs must overcome. The first concerns the sheer volume of an archival basis covering fourteen International Sanitary Conferences held between 1851 and 1938, with some 8000 pages of printed proceedings reproducing the debates almost verbatim (see Appendix A).[58] Whereas a detailed discussion of this archive would exceed the limits of an article, an analysis which only focused on some key documents would merely raise the spectre of methodological bias. To reduce the risk of bias, I have used two safeguards. First, I have discussed sources that have also been selected as milestones in the specialised literature. Second, I have conducted a systematic search of the term 'prévention' and its derivatives (in French and English) in the digitalised archives, and I have reported its meaning in my analysis, whether supportive of my argument or not. The fact that the term and its derivatives are systematically understood as prevention of disease spread, rather than applying to the causes of spillover events, is therefore driven by the evidence. With these safeguards, the selection of some documents to illustrate the argument is therefore not dictated by bias, but by the needs of the narrative.

[56] ibid.

[57] Koskenniemi, 'The Fate of Public International Law', 6.

[58] The proceedings are available in digitalized copies in two collections: (i) Harvard's Contagion collection, which brings together for the first time digitalized copies of the proceedings of the first 11 International Sanitary Conferences, between 1851 and 1903, see Harvard Library, 'Contagion: Historical Views of Diseases and Epidemics' <https://curiosity.lib.harvard.edu/contagion/feature/international-sanitary-conferences>; (ii) the Wellcome' Collection, which offers the paper copies of all the proceedings and the online copies of the proceedings only of the 1866, 1874, 1881, 1903, 1911 conferences, see <https://wellcomecollection.org/works?query=%22International+Sanitary+Conference%22&production.dates.from=1850&production.dates.to=1950>.

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The second methodological problem is quite different from the previous one. It arises from the dearth of *travaux préparatoires* of the process leading to the IHRs revision in 2005. To address this problem, I researched and compiled a set of 76 documents relating to this revision process from the period between 1995 and 2005 (listed in Appendix B). This documentary set includes eight WHA Resolutions, sixteen WHO Reports, eight WHO reports from regional consultations, twenty-one comments and documents submitted by states and international organisations as part of the intersessional regional consultation, fourteen reports and drafts of the Intergovernmental Working Group on the revision of the IHRs, and nine WHO Weekly Epidemiological Records.

The third methodological problem stems from the fact that any compilation involves an element of selectiveness. The risk of bias is limited here by the diversity of sources researched and the different nature of the documents retained. The assumption is that, if a thread in the understanding of prevention as disease containment can be found despite such diversity, it likely reflects a widely shared understanding.

And indeed, although heterogeneous in character, when closely examined, these sources reveal a clear and consistent focus on containment and, no less importantly, a profound neglect of spillover prevention as a regulatory goal. The heterogeneity of the documentary basis makes this finding all the more intriguing, and it suggests that the containment bias has played out at a level which is deep and widespread enough to be 'structural', influencing the overall framing of the problem and its response.

IV. Defending Borders from Epidemic Diseases

A. The Paris International Sanitary Conference of 1851

The first concerted attempt to formulate an international health framework was triggered by the new wave of cholera against a background of other long-established epidemic diseases, plague most notably, which regularly threatened Europe from 'the East'.[59] Between 1828 and 1831, cholera, originally incubated in Central Asia, had moved from India, via the Ottoman Empire, to Russia, Europe and the United States. Recent advances in transportation, eg the fast steamship, and communications, eg the telegraph, had also increased the discourse relating to a world without borders.[60]

[59] RJ Evans, 'Epidemics and Revolutions: Cholera in Nineteenth Century Europe' (1988) 120 *Past and Present* 123.

[60] For statements on this point, see Paris 1851, Protocol No 25, 31 Oct. 1851, delegate of the Two Sicilies Carbonaro, 6. Similarly, see also Procès-verbaux de la Conférence sanitaire internationale ouverte à Constantinople le 13 février 1866 (Constantinople, 1866), Annexe au Procès-Verbal de la 24° Seance, Rapport sur les mesures d'hygiène à prendre contre le choléra Asiatique, 4.

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At the time, lack of consensus on how cholera and other infectious diseases were contracted and transmitted was a major obstacle in designing a common strategy to tackle diseases from abroad.[61] The traditional methods to build protection from epidemic diseases, such as the plague, were quarantine systems and sanitary cordons.[62] Yet, international cooperation in this area was most urgently needed to sort out the extraordinary inconsistencies in quarantine policy that still prevailed. International spread of infectious diseases could no longer be dealt only as a matter of national policy.[63]

In this context, the debate on fending off epidemic diseases was essentially framed as a policy borders *defence*, aimed at building a uniform system of maritime quarantine to protect Western Europe and North America from 'Asiatic diseases'.[64] An attempt at reaching a multilateral agreement on disease control was made in 1851, when the French Government convened, in Paris, the first of a long series of international conferences. This International Sanitary Conference was attended by delegations from twelve states,[65] each represented by two delegates (diplomatic and medical) enjoying independent votes. Whereas the stated objective of the conference was to 'regulate in a uniform way the quarantines and lazarettos in the Mediterranean,'[66] the real agenda was much broader, including discussions on the contagiousness of cholera, the role and function of quarantine regulations for public safety, measures to inspect travellers and goods, and, for plague, the relevant date to commence the period of quarantine.[67] Given the foundational character of this conference, it is worth delving into the different stances taken by delegates on the overall approach.

The debates lasted from 23 July 1851 to 19 January 1852, and delegates spent most of their time discussing the relative merits of 'contagionist' vs 'sanitary' theory and policy. Some considered that barriers, like quarantines and sanitary cordons, were simply unfeasible. The Austrian medical delegate[68] and the British delegate even proposed the complete abolition of quarantine for cholera.[69] The French position, instead, was divided.

[61] Howard-Jones, 'Origins of International Health Work', 1034.

[62] See O Schepin and W Yermakov, *International Quarantine* (IUP 1991); GE Rothenberg, 'The Austrian Sanitary Cordon and the Control of the Bubonic Plague: 1710–1871' (1973) 27 Journal of the History of Medicine and Allied Sciences 15.

[63] See V Huber, 'The Unification of the Globe by Disease? The International Sanitary Conferences on Cholera, 1851–1894' (2006) 49 The Historical Journal 453.

[64] Cueto, Brown and Fee, *The World Health Organization*, 10-15; Howard-Jones, 'Origins of International Health Work', 1035; Goodman, *International Health Organizations and Their Work*, 389.

[65] The states represented were Austria, the two Sicilies, the Papal States, Spain, France, Great Britain, Greece, Portugal, Russia, Sardinia, and Turkey. Howard-Jones, *The Scientific Background of the International Sanitary Conferences*, 15.

[66] Paris 1851, 1.

[67] Goodman, *International Health Organizations and Their Work*, 40.

[68] See Paris 1851, Séance du 14 Août 1851, 39-50, Austrian delegate Ménis, at 8.

[69] ibid N. 11, Séance du 27 Septembre 1851, at 16, seq. 182 and at 25, seq. 191; N. 14, Séance du 4 Octobre 1851, at 9, seq. 239; N. 24, Séance du 29 Octobre 1851, at 11-12, seq. 358. See also Goodman, *International Health Organizations and Their Work*, 40.

Marseilles, as a port city, strongly supported strict quarantine measures, but the government was worried about inhibiting trade.[70] The Spanish, Greek and Tuscan delegates supported the adoption of quarantine measures. Out of the twenty-three diplomatic and medical delegates present during the vote, fifteen voted in favour, four against, and four abstained.[71]

The result was a compromise in favour of a more uniform form of quarantine, itself understood as a 'preventive measure' ('mesures préventives'),[72] organised by a convention with eleven articles and one hundred and thirty-seven regulations. The convention dealt specifically with plague, yellow fever, and cholera but also established that a port could introduce measures against any ship having on board passengers with diseases reputed to be 'importable and transmissible'.[73] These measures were, however, aimed only at particular vessels, not entire countries of destination. The convention standardised but also relaxed common practices, clarifying minimum and maximum periods of quarantine and classifying goods into categories varying from 'quarantine and disinfection obligatory' to 'quarantine exempt.'[74] Each ship was to carry a bill of health ('clean' or 'foul,' on a standardised form) from its port of debarkation,[75] which allowed land passengers, crew and goods to disembark without restriction, unless in cases of suspicious illness or death during the journey. Interestingly, some provision was made for a deeper form of prevention, akin to what today would be called surveillance and early alert. Regulations 112-136 focused on 'the East,' particularly with regard to relations between European powers and the Supreme Health Council of Constantinople and the Health Directorate of Egypt.[76] They stipulated that twenty-six medical officers were to be stationed in the East to examine conditions in these areas, also with regular tours, and prepare weekly reports.

The proceedings of the 1851 Conference show that the discussion of preventive measures revolved around how to best limit the spread of a disease, i.e. containment of the spread, and, for this specific purpose, quarantine measures were considered the main strategy.[77] It was

[70] ibid N. 21, Séance du 21 Octobre 1851, at 16, seq. 358; N. 22, Séance du 24 Octobre 1851, at 9, seq. 407; see also N. 24, Séance du 29 Octobre 1851, at 3, seq. 407.

[71] ibid Annex au Procès Verbal de la 7e Séance, 10-11, at 69. See also Howard-Jones, *The Scientific Background of the International Sanitary Conferences*, 15.

[72] See Paris 1851, N. 12 Sèance du 30 Septembre 1851, at 8, seq. 206. See also Annexe au procès verbal de la 7e Séance, at 39, seq. 97; N. 12 Sèance du 30 Septembre 1851, at 7, seq. 205 and Annexe n. 2 au Rapport de la Commission, at 4, seq. 110, n. 9.

[73] ibid N. 16, Séance du 9 Octobre 1851, at 11, 269. See also N. 5 Séance du 14 Aout 1851, at 9, seq. 47; N. 16, Séance du 9 Octobre 1851, at 11, seq. 269. On this point, see also Goodman, *International Health Organizations and Their Work*, 29.

[74] ibid N. 21 Séance du 21 Octobre 1851, at 17, seq. 359. See also N. 22 Séance du 24 Octobre 1851, at 22, seq. 386;

[75] ibid Annexe au Procès-Verbal de la 7e Séance, at 23, seq. 81 (my translation from the original formulation in French '*la patente nette et la patente brute*').

[76] ibid Annexe au Procès-Verbal de la 7e Séance, at 19-20, seq. 77-78.

[77] ibid N. 12 Sèance du 30 Septembre 1851, at 7-8, seq. 205-206.

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considered that, in the typical contagion scenario of a sick traveller spreading disease exponentially,[78] only quarantine measures would be adequate. The option of expanding the discussion to an earlier stage was neither considered nor mentioned, despite the fact that the surveillance system set out in Regulations 112-136 could have provided a basis for a deeper form of prevention. If a focus on pathogen spillover was, at the time, scientifically beyond reach, some further consideration of preventing outbreaks in the 'East' would have been possible. But, aside from the aforementioned regulations, this other road did not seem workable.

The convention was signed by all of the delegates at the Paris conference, but only France, Portugal and Sardinia formally ratified the instrument.[79] Whereas this may appear as a meagre result, the Paris Conference was a real turning point, opening formal collaborations among European governments and setting what would become their common approach, one of containment of specific diseases.

B. *Migrants, geopolitics and the focus of early international sanitary law*

Throughout the second half of the nineteenth century, a number of additional sanitary conferences were convened, each time after a cholera scare in Europe. These meetings were an effort to 'ensure the *defence* of Europe against exotic pestilences' while removing 'hindrances to international commerce and transport.'[80] The purpose of protecting Europe from 'Asiatic cholera' dominated the discussions, and the fear of disease importation into Europe was highly influential to their outcome.[81]

Historian Akira Iriye has argued that the fundamental flaw of internationalism in this context was its Eurocentrism, with European countries referring to the conferences as a civilising mission for the benefit of the 'Orient'.[82] The emphasis on such a mission also served to soften the perception of what was fundamentally a border defence strategy. COVID-19 measures have reminded us of these inward reflexes which,

[78] That of 'an individual [who] arrives from an infected place . . . falls ill during the trip, or a few days after his arrival; soon this disease reaches some other members of the family or of the house where he had stayed, and it is from this house, centre of infection or contagion . . . that the disease spreads to the entire village', ibid N. 12 Sèance du 30 Septembre 1851, at 7, seq. 205 (my translation from the French original: '*il arrive un individu d'un endroit infecté; il tombe malade pendant le voyage, ou bien peu de jours après son arrivée: bientôt cette maladie atteint quelques autres membres de la famille ou de la maison où il s'était arrêté, et c'est de cette maison-là, foyer d'infection ou de contagion, comme vous le voudrez, que la maladie se propage par tout le village.*').

[79] Portugal and Sardinia ultimately withdrew in 1865, finding the new regulations administratively too onerous, see Goodman, *International Health Organizations and Their Work*, 44.

[80] Y Beigbeder, *The World Health Organization* (Nijhoff 1998), 73. See also Huber, 'The Unification of the Globe by Disease?', 460-461. According to Sheldon Watts, whereas Britain recorded 130,000 deaths from cholera in the nineteenth century, more than 25 million died of the disease in India between 1800 and 1925, see Watts, *Epidemics and History*, 167. Noting the role of countries in east of Europe as 'buffer zones' protecting Western Europe, see Paris 1851, Protocol N. 12, 30 Sept. 1851, delegate of the Two Sicilies Carbonaro, 18–19.

[81] Fidler, *International Law and Infectious Diseases*, 28-35.

[82] See A Iriye, *Cultural Internationalism and World Order* (JHU Press 1997) 50.

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also at that time, stigmatised foreign migrants and travellers. Migration, like other forms of human movement across political boundaries, may be a vector of disease spread. As a phenomenon, migration may be regulated for many different purposes. When regulated from the specific perspective of disease spread, it is a manifestation of a focus on containment. Two instruments concluded in the 1890s are particularly apposite to illustrate this focus, and its wider embeddedness in a Eurocentric defensive strategy. The 1892 International Sanitary Convention was specifically devoted to containing the importation of cholera through the Suez Canal by Mecca Muslim pilgrims,[83] whereas the 1893 International Sanitary Convention focused on restricting and containing cholera from crossing European boundaries. In the proceedings of the 1892 Conference, this approach is presented as one of 'prevention'.[84] Similarly, at the opening of the 1893 Conference, it was stated that the delegates had been entrusted with a 'task [...] of unquestionable importance', namely, 'avoiding, as far as possible, the *invasion* and *propagation* of cholera and at the same time regulating *preventive measures* in a manner conformable to the interests of life and public commerce'.[85] The proceedings provide clear evidence that, in the understanding of the time, preventive measures were a response to the 'invasion' of cholera[86] (or of the 'dangers of the infection').[87]

As noted earlier in this article, given the scientific limitations of the time and the focus on diseases already prevalent in humans, such as cholera, this focus is unsurprising. As noted by the Chief Medical Officer for the Port of London, William Collingridge, in 1893 letter: '[t]his inspection is necessary not only for the detection of infected persons but also to *prevent the importation* of pauper aliens with the danger attendant thereon'.[88] Subsequent conferences kept this focus, further regulating specific routes. During the 1894 Conference, given the wide perception that the entry of Mecca pilgrims was the main vector of cholera spread in Europe, certain quarantine measures applied to this route were not extended to other possible routes (e.g. the Russo-Afghan border).[89] This

[83] On the regulation of the Mecca pilgrimage, see M Harrison, 'Quarantine, Pilgrimage, and Colonial Trade' (1992) 29 The Indian Economic and Social History Review 117.

[84] Protocoles et procès-verbaux de la Conférence sanitaire internationale de Venise inaugurée le 5 janvier 1892, Rome, Imprimerie nationale de J. Bertero, 1892, 29 (Venise 1892). See also Séance du 26 Janvier (Après-Midi) - Protocole N° 13, 229.

[85] Protocoles et procès-verbaux de la Conférence sanitaire de Dresde, 11 mars-15 avril 1893, Dresde, Imprimerie B. G. Teubner, 1893, 4 (my translation from the French original, emphasis added: '*La tâche qui vous est déférée est d'une importance incontestable. En vue d'éviter, autant que possible, l'invasion et la propagation du choléra et de régler en même temps les mesures préventives d'une manière conforme aux intérêts de la vie et du commerce public* [...]) (Dresde 1893).

[86] ibid 40 and 222.

[87] ibid 135.

[88] Letter from Collingridge to Port Sanitary Committee, Corporation of London Records Office, Port Sanitary Committee Papers (January-March 1893) 3 January 1893 (emphasis added).

[89] Conférence sanitaire internationale de Paris, 7 février–3 avril 1894, Procès-verbaux. Paris, Imprimerie nationale, 1894, 1re Partie, Procès Verbaux des Séances Pléniéres, Première Séance, Mercredi 7 Fevrier 1894, at 28, seq. 50 (Paris 1894); Annexe au Procès-verbal de la séance du 13

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inconsistency was raised in some cases, most notably by representatives of the UK, who had – in light of the empire and its commercial interests – a different position on quarantines.[90] But the framing was, by this point, deeply embedded in the discussion, whether to state a stance or to criticize it. The British suggestion was to 'soften preventive measures' as a way of limiting interference with trade.[91] During the 1897 Conference on plague, the UK stance – as colonial administrator of India – came under much criticism from other European nations, in the context of plague spread from Bombay to the north-west littoral of India. France repeatedly condemned what it considered Britain's irrational opposition to quarantine in any form on maritime travel through the Suez Canal, which had been opened in 1869 and was under the control of the British after 1882.[92] For present purposes, it is the common language of 'preventive measures' that must be noted. Ultimately, it was agreed that '*preventive measures* [would] be applied to the contaminated territory from the moment cases of plague have been officially recorded.'[93]

C. *The consolidation of the 'classical regime'*

By the 1890s, fourteen nations had reached agreement on the adoption of binding conventions on quarantine. The problem of the spread of diseases across borders pushed states to engage in an effort that set the

février 1894, Mémoire sur la propagation et la marche du choléra, at 62-70. See also Paris 1894, 2e Partie Procès Verbaux des Séances de la Commission relative à la Mer Rouge et à la Prophylaxie Générale du Pèlerinage. Procès Verbal N. 1, Séance du Mercredi 14 Fevrier 1894, at 258, 284, and du Mardi 6 Mars at 364, seq. 390; 1re Partie, Procès Verbaux des Séances Pléniéres, Cinquième Séance, Mardi 13 Mars 1894, at 125, seq. 151.

[90] See Letter of E. D. Dickson to Sir P. Currie, Constantinople, 13 May 1894, London, NA, Government Offices Correspondence. Cholera: Dresden Sanitary Convention (1893 to 1896); Paris Sanitary Convention (1894 to 1897) MH/19/238.

[91] Paris 1894, 1re Partie, Procès-Verbaux des Séances Pléniéres, Première Sèance, Mercredi 7 Février 1894, 26, seq. 48. The official British anti-quarantine stance was mainly a result of Britain's interest in preserving international trade and traffic. See Howard-Jones, 'Origins of International Health Work', 1033. On the threat to its sovereignty expressed by the British Indian administration: 'India ought not to be fettered or cramped by any International Convention', see Letter India Office, 14 Oct. 1875, London, NA, International Sanitary Convention, Commission of Enquiry, Permanent Council, vol. 1. Proposals for preventing the spread of plague, cholera, etc., in the East (Dec. 1874–Dec. 1876) FO/7/982.

[92] See International Sanitary Conference (10th: 1897: Venice, Italy), Conférence Sanitaire Internationale de Venise, 16 février–19 mars 1897: Procès–verbaux, Rome: Forzani et Cie, Imprimeurs du Sénat, 1897 3me partie, Première Sous-Commission Technique, Procès Verbal n. 3, at 339, seq. 359 (Venise 1897); 4me Partie, Deuxième Sous-Commission Technique, Procès-Verbal n.1, at 450, seq. 468; 1re Partie Séances Plénières, Huitième Séance, at 120, seq. 138. See also Goodman, *International Health Organizations and Their Work*, 60; S Watts, 'From Rapid Change to Stasis: Official Responses to Cholera in British-Ruled India and Egypt, 1860 to c. 1921' (2001) 12 Journal of World History 321; S Watts, 'Cholera and the maritime environment of Great Britain, India and the Suez Canal: 1860-1883' (2006) 63 International Journal of Environmental Studies 19.

[93] Venise 1897, 4me Partie, Deuxième Sous-Commission Technique, Procès-Verbal N. 1, at 444, seq. 462; and 1re Partie Séances Plénières, Quatorzième Séance Procès-Verbal de Signature at 250, seq. 268 (my translation from the French original, emphasis added: '*Le mesures préventives seront appliquées au territoire contaminé à partir du moment où des cas de peste auront été officiellement constatés.*').

foundations of what Fidler has called 'the classical regime's architecture'.[94] This architecture was clearly aimed 'to protect States against the international spread of infectious diseases in a way that minimized interference with international trade and travel'.[95] As clearly stated in the preamble to the International Sanitary Convention of 1893, states parties had 'decided to establish common measures for protecting public health during cholera epidemics without uselessly obstructing commercial transactions and passenger traffic'.[96]

At the dawn of the twentieth century, the Italian government proposed an eleventh International Sanitary Conference, which was convened in Paris in 1903.[97] One of the main achievements of this conference, which makes it noteworthy for present purposes, was the unification of earlier conventions (1892, 1893, 1894, 1897) in light of contemporaneous scientific knowledge, in what became the International Sanitary Convention of 1903. The 1903 Convention, which was ratified by most participating states, consolidated the overall approach built piece by piece in previous decades. It was structured around the policy of disease non-importation, setting standardized measures against the importation of cholera and plague. Scholars generally consider the 1903 Convention as a milestone in the effort to unify the purpose and approach of previous instruments.[98] In the previous Conferences, delegates had discussed the importance of adopting 'preventive measures' in order to contain the spread of the disease. The terminology and focus was broadly consistent, with references such as: 'prevent' the spread[99] or 'contain the principle of the disease';[100] 'oppose the reception'[101] or prevent the

[94] Fidler, 'From International Sanitary Conventions to Global Health Security', 328.

[95] ibid.

[96] International Sanitary Convention (adopted 15 April 1893) 1894 Great Britain Treaty Series No. 4, preamble.

[97] International Sanitary Conference (11th: 1903: Paris, France) 'Conférence Sanitaire Internationale de Paris, 10 octobre–3 décembre 1903: Procès–verbaux' (Paris: Imprimerie Nationale, 1904)(Paris 1903), which led to the adoption of the International Sanitary Convention of Paris, 1903 (1903 Convention).

[98] Howard-Jones, *The Scientific Background of the International Sanitary Conferences*, 85; Fidler, 'From International Sanitary Conventions to Global Health Security', 331. The 1903 Convention was later superseded by the conventions relating to maritime traffic of 1912 and 1926, and the latter was modified in 1938 and again in 1944.

[99] Paris 1851, N. 12 Sèance du 30 Septembre 1851, at 9, seq. 206 and Annexe au procès verbal de la 7e Séance, at 39, seq. 97; International Sanitary Conference (3rd: 1866: Istanbul, Turkey), 'Report to the International Sanitary Conference of a Commission from That Body, to Which Were Referred the Questions Relative to the Origin, Endemicity, Transmissibility and Propagation of Asiatic Cholera'(Boston Mass.: s.n.) at 38 ; Dresde 1893 : Protocole n. 9, at 135, seq. 161 ; Notification des cas de choléra et mesures intérieurs à prendre, at 209, seq. 237 and at 222, seq. 250 (Istanbul 1866) ; Paris 1894, Première Séance, Mercredi 7 fevrier 1894, at 26, seq. 48 ; Venise 1897, Deuxième Séance, at 49, seq. 67 ; Conférence sanitaire internationale de Paris, 7 novembre 1911-17 janvier 1912, Procès-verbaux (Paris, Imprimerie Nationale, 1912) 117 (Paris 1911).

[100] Istanbul 1866, 54.

[101] International Sanitary Conference (4th: 1874: Vienna, Austria), 'Procès-verbaux de la Conférence Sanitaire Internationale ouverte à Vienne le 1 juillet 1874' (Vienne: Impr. Impériale et Royale, 1874) Programme de la Conférence Sanitaire Internationale de Vienne 1874, at 416 (Vienna 1874).

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'importation',[102] 'introduction'[103] or 'invasion'[104] and 'propagation'[105] of a disease. The 1903 Convention consolidates this containment focus in the international health framework,[106] with two important implications.

First, the classical regime did not demand improvements in national sanitation or health services, despite the recognition that such efforts would have been necessary to prevent cholera outbreaks, upstream from their spread. Interestingly, some influential scientific voices were arguing, already in the 1890s, for deeper prevention with a focus on the pathogen itself. In 1894, Robert Koch, a German physician and microbiologist who had a central role during the negotiation of the international sanitary conventions on cholera, argued that all the agreements were 'quite superfluous' because what was necessary was for every country was 'to seize cholera by the throat and stamp it out'.[107] Containment was therefore a regulatory choice, seen as the most workable for the reasons discussed so far, but not the only possible one. Even in a context where a focus on pathogen spillover was scientifically out of reach, more could have been done to regulate outbreaks, ie sudden increases in cases in a given geographical context. However, that raised difficulties of a political nature.[108] The focus remained clearly on containment of disease spread, including in cases where an element of surveillance was added, as in Regulations 112-136 of the 1903 Convention.

Second, the list of diseases included in the classical regime was the outcome of European states' sense of vulnerability to diseases endemic in non-European regions and colonies.[109] It is indeed noteworthy that, despite their cross-border transmissibility, diseases indigenous to Europe, such as tuberculosis, were not addressed in the regime. This is yet another indication that sanitary conventions were specifically designed to contain the importation of infectious diseases where trade and travel were possible vectors. This included plague, cholera, and yellow fever, which were all regarded as not endemic to Europe and North America.[110] In many ways, limiting the importation of non-European diseases was an

[102] ibid Programme de la Conférence Sanitaire Internationale de Vienne 1874, at 444; Paris 1903, Annexe, at 705, seq. 732.

[103] International Sanitary Conference (5th: 1881: Washington, D.C.) 'Proceedings of the International Sanitary Conference: Provided for by Joint Resolution of the Senate and House of Representatives in the Early Part of 1881' (Washington: G.P.O., 1881) Annex n. 3, at 162, seq. 170; Annex n. 7, at 182, seq. 190; Protocol n. 4, Session of January 26, 1881, at 29, seq. 37; Venise 1892, Protocol n.2, at 29, seq. 45; Paris 1911, at 132-133 and 157.

[104] Dresde 1893, Protocole n. 1, at 4, seq. 30; Protocole n. 3, at 40, seq. 66.

[105] Istanbul 1866, at 37-38; Dresde 1893, Protocole n. 1, at 4, seq. 30; Paris 1911, at 15.

[106] Paris 1903: Procès-verbaux des seances de la Commission de Codification, Sixième Séance, at 629, seq. 656; Annexe, at 705, seq. 732 and at 746, seq. 773.

[107] Quoted in Howard-Jones, *The Scientific Background of the International Sanitary Conferences*, 41 and 76.

[108] Howard-Jones, 'Origins of International Health Work', 1035.

[109] See Fidler, *International Law and Infectious Diseases*, 28-35.

[110] Typhus and smallpox were included for the first time to the main International Sanitary Convention in 1926, see International Sanitary Convention (adopted 21 June 1926, entered into force 28 March 1928) 78 LNTS 229 art 1(3).

'imperialistic' concern.[111] But, it proved fertile from a normative standpoint, as it lead to the adoption of several legal instruments on infectious diseases, not only on maritime trade, travel and quarantine, but also on aerial navigation.[112] In all cases, the focus on containment was kept.

D. The entrenchment of containment in the post-1945 architecture

The containment focus of the classical regime remained a constant in health regulations adopted since 1851. It turned, step by step, into a structural bias, which was later to be transferred to subsequent instruments and institutions. At the institutional level, in addition to the International Sanitary Conferences described above, there were also several national or regional health councils, which included diplomatic representatives of foreign powers.[113] From the late 1890s onwards, the trend towards institutionalization intensified. Although this will be known to those specialized in health law and diplomacy, the general reader may benefit from some contextualization.

French epidemiologist Adrien Proust, father of the famous novelist, played a major role in this context. In 1896, he proposed the creation of a 'Bureau International de Santé' at the foundations of an 'Union Sanitaire', whose main object would be to protect the health of European countries and limit the importation of diseases from non-European countries.[114] The underlying assumption was that co-operation would work more efficiently with the coordination of a central body, especially for sharing surveillance information.[115] This is relevant to understand the place of the containment focus in the emerging institutionalization of health governance. In the first decade of the twentieth century, states established a permanent international health body regionally (the Pan American Sanitary Bureau, 1902)[116] and internationally (*Office International d'Hygiène Publique* (OIHP) 1907).[117] At its inception, the OIHP was very largely, if not exclusively, a European body whose

[111] See Fidler, 'From International Sanitary Conventions to Global Health Security', 332; Cueto, 'The History of International Health', 20.

[112] International Sanitary Convention for Aerial Navigation (adopted 12 April 1933, entered into force 1 August 1935) 161 LNTS 65. See P Dorolle, 'Old Plagues in the Jet Age. International Aspects of Present and Future Control of Communicable Disease' (1968) 4 British Medical Journal 789, 789.

[113] These included the Conseil Superieur de Santé de Constantinople, which dates from 1839; the Conseil Sanitaire, Maritime et Quarantinaire d'Egypte, created in Alexandria in 1831; the Conseil Sanitaire International de Tanger, which had its beginnings in 1792 but was not constituted until 1840; and the Conseil Sanitaire de Teheran, created in 1867.

[114] See Howard-Jones, 'Origins of International Health Work', 1035.

[115] Fidler, *International Law and Infectious Diseases*, 47-48.

[116] Pan American Health Organization, *Pro Salute Novi Mundi: A History of the Pan American Health Organization* (Pan American Health Organization 1992) 19.

[117] Protocol Concerning the Office International d'Hygiène Publique (signed 9 December 1907, entered into force 20 October 1947) 9 UNTS 3, 66.

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mandate and purpose was to protect its mainly European signatory states from transmissible diseases originating abroad.[118]

That European dimension changed significantly in the proposal for the creation of the WHO, which emerged from the 1945 San Francisco Conference of the United Nations.[119] Yet, by then, the containment focus had become a natural design feature of the institutional system, which was subsequently transferred into the new institutional structure. The WHO was established in 1946.[120] Among various functions and duties ascribed to the WHO by the founders, the main function and objective of the organization was indeed to control and eliminate the scourge of infectious diseases.[121] Under article 21(a) of the WHO Constitution, the WHA was given the authority to adopt binding regulations concerning 'sanitary and quarantine requirements and other procedures designed to *prevent the international spread of disease*'.[122] Under article 22, regulations adopted under article 21 are automatically binding on all WHO member states, unless there is an explicit rejection of the regulations or a reservation. This provision constituted the legal basis for the adoption of what would become the IHRs.

Indeed, in 1951, one hundred years later after the first International Sanitary Conference in Paris, the WHA adopted the ISRs on the basis of article 21(a). The ISRs 'followed the same substantive legal approach to international infectious disease control developed since 1851'.[123] They were, first and foremost, still designed to prevent, ie contain, the international spread and importation of infectious diseases. When compared to the classical regime, some variations can be noticed with respect to earlier instruments. Yet, the list of diseases to which the ISRs applied emphasised the historical continuity: cholera, plague, yellow fever, smallpox, typhus and relapsing fever. Throughout the century which preceded the ISRs, health governance at the international level had come to be framed and understood as a matter of containment of the spread of certain infectious diseases. At each juncture ever since, this focus was kept.

[118] This spirit was apparently still evident in the early 1920s, at least to United States representative Rupert Blue, U.S. Surgeon General, in late 1922, when he submitted his 'Report of the October Meeting of the Office International d'Hygiène Publique, October 20th to November 2nd, 1922. Blue wrote: 'all nations [represented] were convinced of the necessity of a line of defense between the Orient and Europe' see United States National Archives, College Park, Maryland, RG 90, Group 12, Box 1.

[119] In 1946, the UN Economic and Social Council convened the International Health Conference to develop the new international organization's constitution, see Kamradt-Scott, 'The International Health Regulations (2005)', 243; N Howard-Jones, *International Public Health Between the Two World Wars – the Organizational Problems* (WHO 1978).

[120] See Constitution of the WHO (adopted on 22 July 1946, entered into force on 7 April 1948) 14 UNTS 185 (WHO Constitution).

[121] See also Kamradt-Scott, 'The International Health Regulations (2005)', 243; A Kamradt-Scott, *Managing Global Health Security: The World Health Organization and Disease Outbreak Control* (Palgrave Macmillan 2015).

[122] WHO Constitution, art 21(a) (emphasis added). See GL Burci and CH Vignes, *World Health Organization* (Kluwer Law International 2004) 132.

[123] Fidler, 'From International Sanitary Conventions to Global Health Security', 328.

In 1969, the WHA revised the ISRs, renaming them 'International Health Regulations' and removing typhus and relapsing fever from the list. The reason is quite revealing. These two diseases no longer were deemed to pose a challenge to high-income countries.[124] The containment bias remained at the heart of the IHRs, the stated objective of which was 'to ensure the *maximum security against the international spread of diseases* with a minimum interference with world traffic'.[125] The scope of the IHRs was very limited, considering that only four and later three diseases were included in its list (plague, cholera, and yellow fever).[126] In line with the principle of non-intervention, the IHRs refrained from addressing 'aspects of public health governance that touch on how a government prevents and control infectious diseases in its sovereign territory'.[127]

The containment bias ran through much of the 1969 IHRs' structure and content. Whereas the IHRs did not provide a definition of the principle of maximum security against the international spread of diseases,[128] in order to guarantee protection against the importation of infectious diseases from other countries, the Regulations established a global surveillance system for the diseases listed in the IHRs,[129] demanded certain health capabilities at ports and airports to contain the spread of disease,[130] and established disease-related provisions for the diseases covered by the Regulations.[131] Part V of the IHRs also included specific provisions allowing member states to adopt certain actions against plague, cholera, and yellow fever that were meant to contain or minimize the international spread of disease.[132] As regards, instead, the principle of minimum interference with world traffic, the 1969 IHRs set out restrictive health measures that a member state could adopt to protect its territory against the diseases listed in the Regulations.[133]

Importantly, by the time the WHA called for fundamental revision of the 1969 IHRs in 1995, the Regulations were applicable to the very same three diseases as the first Sanitary Conference in 1851 —cholera, plague, and yellow fever— much like as if global health threats had been frozen

[124] Kamradt-Scott, 'The International Health Regulations (2005)', 243.

[125] IHR 1969, Foreword (emphasis added). For an analysis, see Fidler, 'Return of the Fourth Horseman', 832-842; Fidler, *International Law and Infectious Diseases*, 61-65; Fidler, 'From International Sanitary Conventions to Global Health Security', 344.

[126] IHR, 1969, art 1. After the success of the smallpox eradication programme, it was removed from the list by the WHA in 1981.

[127] D Fidler, 'SARS: Political Pathology of the First Post-Westphalian Pathogen' (2003) 31 Journal of Law, Medicine and Ethics 485, 487.

[128] See IHR 1969, 1, 7 (on definitions). See also E Roelsgaard, 'Health Regulations and International Travel' (1974) 28 WHO Chronicle 265, 267.

[129] See IHR 1969, arts 2-13, at 10-15.

[130] ibid arts 14-22, at 15-18.

[131] ibid arts 50-75, at 26-33.

[132] ibid see for instance art 52(1), at 26; art 62(1), at 30.

[133] ibid Part IV, arts 23-29 (General Provisions); art 30 (Health Measures on Departure); arts 31-34 (Health Measures Applicable between Ports or Airports of Departure and Arrival); arts 35-45 (Health Measures on Arrival); arts 46-49 (Measures concerning the International Transport of Cargo, Goods, Baggage, and Mail); Part VI, arts 76-81 (Health Documents).

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in a remote past. In earnest, this limited scope resulted from the fact that prevention and control of the international spread of disease was by now a low priority among WHO members, mainly due to the benefit of the great powers' trading interests.[134] Although the reform process began in 1995, it did not gain traction until the world faced the very real and concrete threat presented by SARS in 2003.[135] Thereafter, the initially protracted process was completed in two years, reflecting in the text of the newly adopted 2005 IHRs the practices that the WHO had applied despite lacking a clear legal basis. Yet, far from eliminating the containment bias, the 2005 revision further entrenched it in the law, this time on the assumption that the only response to any and all health security threat is to manage disease spread.

V. An Enduring Bias: Containment of Disease Spread in the 1995-2005 Revision of the International Health Regulations

A. The revision of the International Health Regulations in context

The process that led to the adoption of the revised 2005 IHRs unfolded at a time in which infectious diseases were increasingly being regarded and approached in novel security terms. It is important to note that the focus on disease containment persisted despite this novel context, marked by an increasingly serious and recognised threat posed by emerging diseases of animal origin. The classification of infectious diseases as threats to international security began in the 1990s with various prominent scholars and institutions emphasizing the risk and threat that emerging and re-emerging zoonotic diseases presented.[136] Describing retrospectively the increasing securitisation of health, Fidler has noted that '[e]fforts to approach public health challenges through security concepts ha[d] prevailed in a way that constitute[ed] a transformative development for public health governance.'[137] This recognition, in turn, prompted the WHO 'to strengthen its disease outbreak policies and procedures while also seeking several new powers to better coordinate the containment and elimination of disease'.[138] The revised IHRs

[134] Fidler, 'SARS', 488.

[135] DL Heymann and G Rodier, 'Global Surveillance, National Surveillance, and SARS' (2004) 10 Emerging Infectious Diseases 173, 174; Kamradt-Scott, 'The International Health Regulations (2005)', 248.

[136] Fidler, 'Globalization, International Law, and Emerging Infectious Diseases'; JM Hughes, 'Addressing Emerging Infectious Disease Threats – Accomplishments and Future Plans' (1998) 4 Emerging Infectious Diseases 360; J Brower and P Chalk, *The Global Threat of New and Reemerging Infectious Diseases* (Rand 2003). For a consolidated overview see WHO, *The World Health Report 2007. A Safer Future: Global Public Health Security in the 21st Century* (WHO 2007).

[137] D Fidler, 'A Pathology of Public Health Securitism: Approaching Pandemics as Security Threats', in A Cooper, J Kirton, and T Schrecker (eds), *Governing Global Health: Challenge, Response, Innovation* (Routledge 2007) 41, 42.

[138] Kamradt-Scott, *Managing Global Health Security*, 4.

established a new legal framework for global health security, governing states' obligations to detect, report, and respond to disease outbreaks.[139] The WHO was recognized as the managing authority for the global response and containment of outbreaks.[140]

This outcome was the result of important developments in global health law and governance.[141] In the 1980s, two set of events prompted interest in health-related concerns and their implications for national and international security. First, the emergence of the HIV/AIDS disease, which had social, political, economic, and military effects, and threatened the stability of western, as well as of low-income, countries. Second, the progressive de-escalation of Cold War tension by the late 1980s[142] led to a revision of the post-Cold War security agenda, which moved away from a narrow focus on traditional military concerns and encompassed new 'threats', such as environmental degradation or emerging and re-emerging infectious diseases.[143]

Then, during the 1990s, the trend towards the securitization of global health issues intensified as a result of factors such as the threat of bioterrorism,[144] the increasing frequency of pathogen spillover and disease spread due to the interconnectedness between poor and wealthy travellers,[145] and the threat of infectious disease epidemics to national interests.[146] The world had changed and the revisions to the IHRs were expected to reflect these new challenges. In a 1998 paper titled 'Reducing the threat of infectious diseases', the US Agency for International Development (USAID) asserted that the 'capacity of all nations to recognize, prevent, and respond to the threat of emerging and re-emerging infectious diseases is the critical foundation for an effective global response'.[147] Better surveillance capacity could, in this context, control the spread.[148] The crucial factor, according to USAID, was improved coordination between international health organisations and a willingness by states to report serious outbreaks of infectious diseases.[149] This amounted to a focus on better containment tools.

[139] See Fidler, 'From International Sanitary Conventions to Global Health Security'; GL Burci, 'Ebola, the Security Council and the Securitization of Public Health' (2014) 1 Questions of International Law 27, 33.
[140] D Fidler, 'Constitutional Outlines of Public Health's "New World Order"' (2004) 77 Temple Law Review 247, 268.
[141] On the security perspective, see T Hanrieder and C Kreuder-Sonnen, 'WHO Decides on the Exception?' (2014) 45 Security Dialogue 331.
[142] K Krause and MC Williams, 'Broadening the Agenda of Security Studies: Politics and Methods' (1996) 40 Mershon International Studies Review 229.
[143] C McInnes and K Lee, 'Health, Security and Foreign Policy' (2006) 32 Review of International Studies 5.
[144] Fidler, 'Constitutional Outlines of Public Health's "New World Order"', 247-90.
[145] ibid. See also M Smolinski, M Hamburg and J Lederberg (eds), *Microbial threats to health: Emergence, Detection, and Response* (NAP 2003) 1, 8-9.
[146] See G Prins, 'AIDS and Global Security' (2004) 80 International Affairs 931.
[147] USAID, *Reducing the Threat of Infectious Diseases* (USAID 1998) 1.
[148] ibid 2.
[149] ibid 3-5.

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This is the broad context in which the 1995-2005 revision process of the IHRs unfolded. In the next sections, I provide a deeper dive into this process in order to show that, even though there was a genuine will and need to overhaul the IHRs system in the 1990s in order to reflect new health threats, the choices made remained trapped within a prior framing of the problem. This was a 'deeply embedded preference',[150] which was by then firmly rooted in the structure of the IHRs as a containment instrument.

B. Strengthening containment through improved surveillance

In May 1995, aware of major constraints of the 1969 IHRs, the WHA adopted a resolution calling upon the WHO to undertake a revision of these Regulations.[151] An informal consultation of public health experts was convened in December 1995 to consider the revision of the IHRs in the light of experience gained during outbreaks of cholera in Peru (1991), plague in India (1994), and Ebola haemorrhagic fever in Zaire (now DRC) (1995).[152] To further develop the concepts proposed by the informal consultation in December 1995, an informal working group consisting of public health and legal experts met twice in 1996, and three times in 1997. Based on the discussions of this group, the first provisional draft of the revised IHRs was prepared in late 1997. The draft sought to address the major perceived gaps in the existing regime,[153] and it was distributed to all member states and interested organizations in January 1998.[154] Member states were regularly informed on progress through six-monthly reports published in the *Weekly Epidemiological Record*, which were submitted to the Executive Board and to the WHA. However, between 1999 and 2000, the IHRs revision process was not a priority in the WHO's agenda.[155]

[150] Koskenniemi, 'From Apology to Utopia', 607.

[151] WHA48.7 (1995).

[152] WHO, 'Report by the Director-General, Executive Board of the WHO on Communicable Disease Prevention and Control: New, Emerging, and Re-Emerging Infectious Diseases' (12 January 1995) EB95/61; WHO, 'The International Response to Epidemics and Applications of the IHRs, Report of a WHO Informal Consultation, Geneva, Switzerland, 11–14 December 1995' (1996) WHO/EMC /IHR /96.1.

[153] Fidler, *International Law and Infectious Diseases*, 71–80.

[154] WHO, IHRs: Provisional Draft, English Version (January 1998), French Version (March 1998). See also WHO, 'Revision of the IHRs, Regional Office for South-East Asia, Fifty First Session, Provisional Agenda Item 15' (27 July 1998) SEAJRC51/11 Add.1.

[155] Reports were still published in the Weekly Epidemiological Record, eg WHO, 'Revision of the IHRs, Progress Report, 29 January 1999' (1999) 74 Weekly Epidemiological Record 25; WHO, 'Revision of the International Health Regulations, Progress Report, 30 July 1999' (1999) 74 Weekly Epidemiological Record 252 (for further examples, see Appendix A). Noting that the Tobacco Convention was the WHO focus at the time, see Johan Giesecke, the IHR revision project manager between 1999 and 2000, and, of the same view, Mike Ryan, heading the operational side of the WHO's outbreak alert and response operations, cited in A Kamradt-Scott, 'The WHO Secretariat, Norm Entrepreneurship and Global Disease Outbreak Control' (2010) 1 Journal of International

During this period, the WHO produced a series of reports presenting infectious diseases and emerging ones as urgent threats that required immediate attention,[156] due to urbanisation, globalization, and greater interaction between animals and humans, all of which were placing people 'at risk of diseases not commonly encountered in the past'.[157] This is noteworthy because the threat singled out came from pathogens that were not yet prevalent in humans; in other words, it came from the risk of pathogen spillover from animal reservoirs to humans. However, this issue remained within a sort of blind-spot in that, although recognized, never really came across as a focus of regulation. The WHO proposed key changes to develop revised regulations that would 'adapt to trends, emerging in the twenty-first century, shaped by changes in the epidemiology of infectious diseases and by the growth of international travel and trade'.[158] It was highlighted that the revised IHRs had to include provisions on 'prevention', but this term remained understood as applying to the spread of diseases, much in the same way as the strengthening the national and international 'capacity' concerned the 'prevention and control' of the spread of infectious diseases.[159]

This focus was confirmed in 2003, with the outbreak of a novel coronavirus causing SARS, which called for stronger containment measures and the implementation of 'strong defense systems at national as well as international levels.'[160] SARS served as a catalyst to conclude the IHRs revision process,[161] but it also contributed to exclude from the framing matters other than the need for containment of disease spread. Significantly, the WHA adopted a resolution calling for surveillance and response and emphasizing the understanding that, at the roots of the problem, was a deficient outbreak notification system (WHA56.29).[162] In particular, the WHA endorsed the use of alternative ways of circulating information about the outbreak, specifically through information gathering by the Global Outbreak Alert and Response Network (GOARN), a WHO-coordinated network of technical institutions serving to track down information about outbreaks in parallel to notifications from states. A second resolution was passed encouraging GOARN to strengthen its surveillance capacity to help countries coordinate their

Organization Studies 72, 79. See also S Davies, A Kamradt-Scott and S Rushton, *Disease Diplomacy: International Norms and Global Health Security* (JHU Press 2015) 34.

156 See Appendix B, 'WHO', *Reports*.

157 WHO, *Communicable Disease Prevention and Control*, 1.

158 WHO, *Global Crises—Global Solutions: Managing Public Health Emergencies of International Concerns through the Revised International Health Regulations* (WHO 2002) 3.

159 See WHO, *Communicable Disease Prevention and Control*, 3; WHO, *Global Crises—Global Solutions*, 3; MK Kindhauser (ed), *Communicable Diseases 2002: Global Defence Against the Infectious Disease Threat* (WHO 2003) WHO/CDS/2003.15. See also Davies, Kamradt-Scott and Rushton, *Disease Diplomacy*, 39.

160 Heymann and Rodier, 'Global Surveillance, National Surveillance, and SARS', 174.

161 ibid.

162 WHA, 'Resolution WHA56.29, Severe Acute Respiratory Syndrome', Fifty-Sixth World Health Assembly (28 May 2003) WHA56/2003/Rec/1, 2 (WHA56.29 (2003)). See also Heymann and Rodier, 'Global Surveillance, National Surveillance, and SARS', 174.

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national containment systems (WHA56.28).[163] These two elements, ie the ability to circumvent state monopoly over the notification of the outbreak, and to coordinate action between states, were seen as key aspects of what the revised IHRs would need to include.

In addition to its call for the revision of the IHRs, the WHO argued that there was a need for a global surveillance network which could gather outbreak reports at any time, from across the world, in order to manage outbreak verification and response.[164] In a 2000 report titled, '*A framework for global outbreak alert and response*',[165] the WHO fleshed out this new approach, which essentially amounted to an enhanced containment strategy. Section 3 of report, titled 'Action by the international community to *contain* outbreaks', presented outbreak verification (OV) as a new approach to global disease surveillance.[166] In focusing on the collection and verification of information on reported outbreaks, and informing public health professionals in cases of possible public health importance, it assumed that pathogen spillover and even the occurrence of outbreaks were beyond the remit of what could be achieved by international cooperation. Yet, an assumption which may have seemed reasonable in the nineteenth century, was not necessarily reasonable at the dawn of the twenty-first century, particularly in the light of the novel threats expressly recognised in scientific and policy circles. The revised system would strengthen the WHO's role and range of informational sources, eg through the Global Public Health Information Network (GPHIN).[167] The WHO was to be the first actor to manage the verification and reporting of disease outbreaks and was to be recognized as the central authority in an overall system which remained focused on containing the spread of disease.[168]

C. *The containment bias in the preparatory works: A fine-grained analysis*

After a series of intergovernmental meetings between 2004 and 2005, the 58th WHA endorsed the revised IHRs in May 2005. The new Regulations changed the approach followed by the classical regime in several important ways,[169] most notably broadening the scope of their application through a 'all hazards approach'. This means that, unlike its predecessor instruments, the application of the 2005 IHRs is no longer limited to a specific list of diseases already prevalent in humans. Rather,

[163] WHA, 'Resolution WHA56.28, Revision of the International Health Regulations' , Fifty-Sixth World Health Assembly (28 May 2003) WHA56/2003/Rec/1.

[164] WHO, 'Global Outbreak Alert and Response: Report of a WHO Meeting' (26-28 April 2000) WHO/CDS/CSR/2000/3, 23.

[165] WHO, *A Framework for Global Outbreak Alert and Response* (WHO 2000).

[166] ibid section 3 (emphasis added).

[167] W Burns, 'Openness is Key' (2006) 84 Bulletin of the World Health Organization 769, 769.

[168] See WHO, *Global Outbreak Alert and Response*, 4. See also S Davies, 'Securitizing Infectious Diseases' (2008) 84 International Affairs 295, 305.

[169] See Fidler, 'From International Sanitary Conventions to Global Health Security', 344.

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it applies to any diseases, known (re-emerging) or entirely new (emerging). With such an expansion in the scope of the IHRs, and in a context where new zoonotic diseases were clearly recognized as a serious threat, the lack of any attention to pathogen spillover, or to the underlying determinants of outbreaks, was a significant and indeed intriguing omission. One may ask whether it was a conscious and deliberate choice to leave deep prevention out.

On the evidence I have examined, the answer is negative. Rather, the evidence suggests a certain framing of the problem which, despite the enlargement of the IHRs scope, remained trapped in a containment mindset. In other words, spillover prevention stayed within a regulatory blind-spot, which was facilitated by the focus on improved surveillance prevalent in the health security narrative.[170] A close examination of what is known about the drafting process of the revised IHRs supports the view that the containment focus persisted in the new instrument mainly as a result of a structural bias. As a general matter, it was commonly agreed that the *core purpose* of the revised Regulations was to *prevent the international spread of diseases*. Whereas the original text of the first draft of the revised IHRs read that the purpose was 'to provide security against the international spread of disease while avoiding unnecessary interference with international traffic',[171] this formulation only reached consensus in a few instances.[172] The majority of member states instead suggested to explicitly include 'prevention of the international spread' as the central IHRs objective – which had already been inserted in the 1995 WHA Resolution 48.7.[173] During the revision process, this proposal was advanced with regard to the text of article 2, on the 'purpose' of the Regulations,[174] as well in relation to other specific provisions or to the IHRs more generally, as evidenced by regional consultation reports,[175]

[170] D Fidler and LO Gostin, *Biosecurity in the Global Age* (SUP 2008) 39-40, 56, 138; Fidler, 'From International Sanitary Conventions to Global Health Security', 344; JB Heath, 'Pandemics and Other Health Emergencies' in R Geiß and N Melzer (eds), *Oxford Handbook of International Law of Global Security* (OUP 2021) 585-605, 590-596 (in particular, section B.2.); Kamradt-Scott, *Managing Global Health Security*, 4.

[171] WHO, 'International Health Regulations: Working paper for Regional Consultations, Intergovernmental Working Group on the Revision of the IHRs' (12 January 2004) IGWG/IHR/Working paper/12.2003, art 2, at 6 (WHO Working Paper 2004).

[172] In agreement, see Japanese Ministry of Health, Labour and Welfare comments on the draft of the proposed revision of the IHRs (IHRs) 30 April 2004; Second U.S. Government Comments on the First Draft of the Proposed Revision of the IHRs (IHRs), 27 April 2004, at 9; Panama, Revised IHRs, Review Questionnaire, 9 June 2004, at 1; General Comments by Mexico on the WHO, 'Draft IHRs' (30 June 2004) IGWG/IHR/Working Paper 12.2003, at 7.

[173] WHA48.7 (1995), preamble.

[174] See New Zealand, General Comment to WHO on the WHO, 'Draft of the Revised IHRs' (14 April 2004) IGWG/IHRWorking paper/12.2003, AD45-01-2, at 2, on art 2; Montevideo Document, Considerations and points of consensus between Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela with regard to Document A/IHR/IGWG/2/2, of 24 January 2005 (Review and approval of proposed amendments to the IHR - Proposal by the Chair), at 2.

[175] WHO, Regional Consultation on the Revised IHRs, Harare-Zimbabwe, 1-3 June 2004 (2004), 'Overview of revised IHRs: Content and key issues (Mr. Gonzalez Martin)', at 2, 2.1 (WHO,

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comments submitted by states in 2004[176] and 2005, as part of the intersessional regional consultation,[177] reports and drafts of the 2004 Intergovernmental Working Group (IGWG)[178] and, lastly, by the 2005 note by the Secretariat.[179] It is noteworthy that despite the diversity of sources and the different nature of these documents, the overall focus is clearly on containment, ie the prevention of disease spread. This is evidence of the presence of a structural bias because even significantly different positions in the spectrum of options under discussion remain 'trapped' by the bias. The pendulum of options never swings beyond the bounds set by the bias. Options beyond it fall into an implicit blind-spot.

In a few instances, the verb 'prevent' was used but always in relation to infectious disease spread. In some cases, an explicit reference was made to 'containment',[180] picking up the wording already adopted in previous documents related to the IHR's revision process.[181] Other reports instead made reference to the need to 'reduce the risk of spread',[182] to 'protect',[183] or to 'facilitate security'.[184] Ultimately, based on the 'new language proposed by a number of Member States', the purpose of the IHRs was revised 'to further specify the objectives sought by the Regulations'.[185] The revised text subsequently read as follows:

Regional Consultation, Harare- Zimbabwe); WHO, Second Regional Consultation, WHO-SEARO, 11; WHO Report Consultation, Western Pacific Region, 2 and Introduction.

[176] Second U.S. Government Comments, 24; New Zealand, General Comment, at 2, on art 2, and at 6; Professional Opinion of the Russian Federation Concerning the IHRs Working Paper for Regional Consultations (undated), at 1. On vaccines and prevention: Colombia (undated), at 7.

[177] See Montevideo Document, at 2 on art 2 Purpose and Scope, Proposal, similarly see also at 10, on art 27(2)(c), and at 17.

[178] On 'prevention of the spread of diseases', see: WHO, 'Intergovernmental Working Group on Revision of the IHRs (IGWG-IHRs): IGWG-IHRs, Review and Approval of Proposed Amendments to the IHRs: Draft Revision, Provisional Agenda Item 3' (30 September 2004) A/IHR/IGWG/3, 7, 8, 10-11, 13, 14, 18, 20, 39; WHO, 'IGWG-IHRs: Review and Approval of Proposed Amendments to the IHRs: Relations With Other International Instruments, Provisional Agenda Item 3' (30 September 2004) A/IHR/IGWG/INF.DOC./1, 5, para 15, 8, para 26.

[179] On 'prevention of the spread of diseases', see WHO, 'Revision of the IHRs: Note by the Secretariat' (16 May 2005) A58/4, 13, 14, 15, 18, 21, 25, 27, 28, 29, 30, 48.

[180] See WHO, Regional Consultation, Harare- Zimbabwe, at 1, opening speech of Dr Antoine Kaboré, Director of Division of Prevention and Control of Communicable Diseases; WHO, Second Regional Consultation, WHO-SEARO, at 4, 23-24 (on quarantine as a containment measure of a PHEIC); WHO, Report Consultation, Western Pacific Region, at 16 and Opening remarks of the Regional Director; WHO, IGWG-IHRs, Summary report of regional consultations, Provisional Agenda Item 2, A/IHR/IGWG/2 Geneva, 1-12 November 2004 (14 September 2004) at 1, para 4 (WHO, Summary Report of Regional Consultations_.

[181] The 'containment' purpose had also already been formulated in WHA48.7 (1995), preamble. Subsequently, see also WHA, 'Global Health Security: Epidemic Alert and Response' (21 May 2001) WHA54.14, paras 4, 7, 10; WHO, 'Revision of the International Health Regulations, Progress Report, 10 May 2002' (2002) 77 Weekly Epidemiological Record 157; WHA56.29 (2003), Preamble and Operative Paragraph 1(2), at 2.

[182] WHO, 'Report of the Consultation Meeting of the Revised IHRs for South American Countries, Rio de Janeiro, Brazil – 5-7 April, 2004, at 3, on art 2.

[183] WHO, 'Report of the North American Consultation Meeting of the Revision of the IHRs, Ottawa, Canada', 2-3 June 2004, 3; WHO, WHO, 'IGWG-IHRs', 2.

[184] WHO, 'Report of the Consultation Meeting on the Revision of the IHRs for Central America, Cuba, and the Dominican Republic', 27-29 April 2004, 4.

[185] WHO, IGWG-IHRs, Review and approval of proposed amendments to the IHRs: explanatory notes, Provisional Agenda Item 3 (7 October 2004) A/IHR/IGWG/4, at 6, on art 2.

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'The purpose and scope of these Regulations are to *prevent*, protect against, control and provide a public health response to the international *spread of disease* [. . .]'.[186] The need to implement 'containment measures' was in turn expressed in Annex I, with regard to public health response capacities at the national level.[187]

As noted earlier, one of the key departures from the 1969 IHRs was the scope of the reporting expectations. The threat posed by newly emerging and re-emerging diseases was central to the revision process and, during the 2004 negotiations, the number of diseases to be covered by the new Regulations was the subject of much discussion. The definition of a public health emergency of international concern (PHEIC)[188] was intended to be broad in scope and application. The January 2004 draft reported that a PHEIC had to be defined on a case-by-case basis, and by way of an instrument guiding states in the assessment of whether or not an outbreak demanded notification to the WHO.[189] However, many states preferred to have specific reporting parameters for certain diseases regularly occurring in some countries[190] and noted, by way of individual submissions, that the IHRs should contain a list of diseases where notification should always be made.[191] The PHEIC criteria were revised to reflect this point. This is understandable given that the expansion in the scope of notifiable outbreaks also broadened the discretion of states on what to notify. In a containment system, notification is the first step that sets the containment machinery in motion. The real challenge came from the need to encompass emerging diseases.

Another concern that arose as a consequence of the expanded scope of the IHRs concerned how responses to chemical or radiological events would be managed in coordination with existing international instruments and bodies with specific responsibility for such issues.[192] In October 2004, after consultations with regional offices and member states, the IHRs IGWG included such events on the grounds that '[t]he release of chemical or radionuclear agents often manifests itself at the outset through symptoms or signs, sometimes even before their cause is known'.[193] According to the IGWG, limiting the scope of the IHRs to

[186] WHO, 'Revision of the IHRs: Note by the Secretariat', at 15.

[187] Ibid, Annex 1, 3, at 48.

[188] WHA58.3 (2005), Annex 2.

[189] WHO Working Paper 2004.. Two of four questions had to be answered affirmatively for a notification to be sent to the WHO: 1. Is the public health impact of the event serious? 2. Is the event unusual or unexpected? 3. Is there a significant risk of international spread? 4. Is there a significant risk of trade or travel restrictions?, see WHA58.3 (2005), see Annex 2, 46–48.

[190] For responses of the WHO under the GOARN framework on such diseases, see WHO, 'Regional Consultation, Harare- Zimbabwe; WHO, European Regional Consultation on Revision of the IHRs, Copenhagen, Denmark, 9–11 June 2004.

[191] WHO, IGWG-IHRs, Review and approval of proposed amendments to the IHRs: explanatory notes, Provisional Agenda Item 3 (7 October 2004) A/IHR/IGWG/4.

[192] WHO, Summary Report of Regional Consultations, para. 6; WHO, IGWG-IHRs, A/IHR/IGWG/INF.DOC./1.

[193] WHO, IGWG-IHRs, Review and approval of proposed amendments to the IHRs: explanatory notes, Provisional Agenda Item 3 (7 October 2004) A/IHR/IGWG/4, 1.

'diseases that were already identified as being caused by infectious agents only' would have impaired the 'ability of the international community, in particular through WHO's coordination, to obtain a reliable assessment of, and response to, potentially grave health threats'.[194] It was therefore agreed that Article 12 (now Article 14) should detail the WHO's coordination activities in the event of a PHEIC, and it would share notification and response duties with other organisations.[195]

Lastly, the expanded number of diseases to be reported also raised other issues, such as the potential for confusion in following the PHEIC Annex; possible delays in reporting in light of the PHEIC criteria; the political implications of reporting an outbreak when a neighbouring state has not yet done so; the risk of trivial notifications; or the inevitable differences in surveillance and laboratory capacity among regions.[196] Despite these concerns, the IGWG remained firm in keeping the broader category of diseases, arguing that 'extending the scope to cover unknown or unforeseeable public health threats was one of the main reasons for revising the Regulations'.[197] An ad hoc expert group of members, appointed by member states from each of the WHO regions, was established to revise the Annex and to consider how the section may be reviewed to address member states' concerns.[198] Moreover, concerns about differing interpretations of the reporting process and notification requirements led the IGWG to further clarify the specific actions to be taken in PHEIC assessments in the September 2004 draft.[199]

Importantly, neither the reports of the 2004 WHO regional consultations, nor the individual government submissions to the WHO in the same year, show any serious objection to broadening the scope of the IHRs per se.[200] The main bone of contention concerned the

[194] ibid 1.

[195] ibid 2.

[196] WHO, Second Regional Consultation, WHO-SEARO, 19–22; WHO, Report Consultation, Western Pacific Region, 5–7.

[197] WHO, IGWG-IHRs, Review and approval of proposed amendments to the IHRs: explanatory notes, Provisional Agenda Item 3 (7 October 2004) A/IHR/IGWG/4, 1.

[198] As a result, Annex 2 was adjusted in 2004 and further in 2005, to include three categories of outbreaks to be reported, see WHO, WHO, 'IGWG-IHRs'; WHO, 'Decision Instrument for the Assessment and Notification of Events That May Constitute a Public Health Emergency of International Concern (PHEIC): Report of the Ad Hoc Expert Group on Annex 2' (22 February 2005) A/IHR/IGWG/2/INF.DOC./4.

[199] Specific provisions on surveillance, notification, verification, determination of a PHEIC, response to a PHEIC, and the WHO's role, were moved from 'Annexes' to Articles (see WHO, IGWG/IHR/Working paper/12.2003; WHO, WHO, 'IGWG-IHRs', modifications to arts 1, 4, 5, 6, 8, 10, 11, 12); an implementation time frame was introduced for meeting the core capacity requirements of the IHR in assessment, notification, and response. It was agreed that five years, with possible two-year extensions by request to the DG, would be given (after WHA approval) to those states which recognized themselves as having difficulties with developing the capacity needed for IHR compliance by June 2007; see WHO, 'Decision instrument for the assessment and notification of events that may constitute a public health emergency of international concern: Report of the Ad Hoc Expert Group on Annex 2' (22 February 2005) Annex 1.

[200] WHO, Regional Consultation, Harare- Zimbabwe; WHO, Report of the Consultation Meeting of the Revised IHRs for South American Countries; WHO, European Regional Consultation on Revision of the IHRs; WHO, Second Regional Consultation, WHO-SEARO;

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implications. Some states noted that the new Regulations should have an expanded but fixed list of diseases, while some others proposed removing the list.[201] The three disease list categories included in Annex 2 were the compromise resulting from this debate.[202] Yet, the debate regarding the expansion of the IHRs scope at no time raised the possibility of a change in the regulatory approach. From a regulatory standpoint, this is perhaps the most striking mismatch in the instrument, which now applies to emerging diseases resulting from pathogen spillover from animals to humans, but still remains wedded to merely containing their spread. Preventing, instead, the very spillover events at the roots of possible outbreaks and of subsequent disease spread was simply off the radar.

The foregoing analysis shows the persistence of the containment bias as evidenced in the available documentary sources. Although there was a genuine will to revise the 1969 IHRs, overhaul their systems, and align the Regulations with the changes of the time, this bias persisted and went essentially unnoticed. This is consistent with the very concept of a structural bias. During the 1851 and the subsequent sanitary conferences, as explained in Part 3, the main objective was to contain mainly three diseases (plague, yellow fever, and cholera) endemic in non-European countries, with a minimum impact on trade and commerce. Preventing pathogen spillover, rather than disease spread, was scientifically out of reach and, no less important, a moot issue for these infectious diseases which were already affecting humans. The science and the politics underpinning global health governance have experienced a sea change since those early times. But the reflexes and their regulatory expression have not. By opening up the Regulations' scope and categories of diseases, the containment bias and approach inevitably showed the inherent limitation of the system and unveiled the spillover prevention blind-spot.

VI. Conclusion

It is rather trite to state that the COVID-19 pandemic has shown the shortcomings of the global health security framework centred on the IHRs.[203] The overhaul undergone by the IHRs in 2005 to reflect the

WHO, Report Consultation, Western Pacific Region; WHO, Summary Report of Regional Consultations.

[201] WHO, IGWG-IHRs, Review and approval of proposed amendments to the IHRs: explanatory notes, Provisional Agenda Item 3 (7 October 2004) A/IHR/IGWG/4

[202] WHO, 'Decision instrument for the assessment and notification of events that may constitute a public health emergency of international concern: Report of the Ad Hoc Expert Group on Annex 2' (22 February 2005) WHO, A/IHR/IGWG/2/INF.DOC./4.

[203] Heath, 'Pandemics and Other Health Emergencies'; A Phelan and R Katz, 'Governance Preparedness: Initial Lessons from COVID-19' (Center for Global Health Science & Security, Georgetown University, 31 July 2020) <https://www.gpmb.org/docs/librariesprovider17/default-document-library/annual-reports/gpmb-2020-arbackgroundpaper1-cghss.pdf?sfvrsn=b885442f_3&download=true>

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practices implemented by the WHO to respond to the SARS outbreak was clearly not sufficient to face COVID-19. This did not come as a surprise, however. Previous outbreaks had already laid bare two main shortcomings. First, the IHRs have unnecessary rigidities and important gaps, not least the improved but still ineffective outbreak notification system and the absence of an accountability and enforcement mechanism.[204] Second, their system is largely ignored in practice, both at the level of preparedness of national health systems to contain and control the spread of infectious diseases[205] and when it comes to implementing the WHO Director-General's recommendations for a coordinated response following a declaration of a PHEIC.[206]

As shown earlier in this article, the concept of 'prevention' in the public health understanding embodied by the IHRs means prevention of disease spread. It thus assumes that international law has little or no role to play in the prevention of pathogen spillover in the first place. One reason for this assumption is that it is very challenging to predict when, where and how spillover will happen, and its implications. However, a system to help prevent pathogen spillover of at least certain types of zoonotic diseases entailing particular risks for global health security is not scientifically unrealistic.[207]

To fix the blind-spot, it may be useful to suggest some directions for further research. Recent literature distinguishes three stages of intervention of a prevention system: 'upstream', 'midstream' and 'downstream'.[208] Downstream prevention is prevention of the spread (containment). Upstream and midstream prevention concern a series of 'drivers' and 'events' that unfold well before spread is even conceivable. They range from the factors driving the increasing probability of

[204] See S Moon, D Sridhar, MA Pate, AK Jha, C Clinton, S Delaunay and others, 'Will Ebola Change the Game? Ten Essential Reforms Before the Next Pandemic. The Report of the Harvard-LSHTM Independent Panel on the Global Response to Ebola'(2015) 386(10009) The Lancet 2204.

[205] LO Gostin and R Katz, 'The International Health Regulations: The Governing Framework for Global Health Security' (2016) 94 Milbank Quarterly 264, 276-290.

[206] See K Lee, CZ Worsnop, KA Grépin and A Kamradt-Scott, 'Global Coordination on Cross-Border Travel and Trade Measures Crucial to COVID-19 Response' (2020) 395(10237) The Lancet 1593; Gostin and Katz, 'The International Health Regulations', 276-306.

[207] Legal and policy scholars have debated this point. But a body of scientific work published mainly in the last four years suggests that spillover prevention may be increasingly within reach. See Olival, Hosseini, Zambrana-Torrelio, Ross, Bogich and Daszak, 'Host and Viral Traits Predict Zoonotic Spillover from Mammals'; Anthony, Epstein, Murray, Navarrete-Macias, Zambrana-Torrelio, A. Solovyov, R. Ojeda-Flores and others, 'A Strategy to Estimate Unknown Viral Diversity in Mammals'; CE Brook, M Boots, K Chandran, AP Dobson, C Drosten, AL Graham, BT Grenfell, MA Muller, M Ng, L-F Wang and A van Leeuwen, 'Accelerated Viral Dynamics in Bat Cell Lines, With Implications for Zoonotic Emergence' (2020) 9 eLife 1; F Young, S Rogers and DL Robertson, 'Predicting Host Taxonomic Information From Viral Genomes: A Comparison of Feature Representations' (2020) 16 PLOS Computational Biology 1; ZL Grange, T Goldstein, CK Johnson and JAK Mazet, 'Ranking the Risk of Animal-to-Human Spillover for Newly Discovered Viruses' (2021) 118(15) PNAS 1; BH Bird and JAK Mazet, 'Detection of Emerging Zoonotic Pathogens: An Integrated One Health Approach' (2018) 6 Annual Review of Animal Biosciences 121, 122.

[208] Viñuales, Moon, Le Moli and Burci, 'A Global Pandemic Treaty Should Aim for Deep Prevention'.

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pathogens hosted by animals spilling over to a human host, the circumstances facilitating spillover events, and those favouring outbreaks of new or re-emerging diseases. A regulatory approach targeting this broader set of considerations would be one of 'deep prevention', including the prevention of pathogen spillover.

Given that the vast majority of disease outbreaks with pandemic potential are of zoonotic origin,[209] including – on the available evidence – that of COVID-19,[210] and that the main drivers of zoonotic pathogen spillover are increasingly well identified (increasing levels of human and animal contact, livestock rearing, deforestation, wildlife hunting and trade),[211] upstream prevention of spillovers has received increasing attention,[212] particularly since 2020.[213] COVID-19 has renewed academic and policy interest in the nexus between environmental degradation (mainly that resulting from illicit wildlife trade and land-use change) and zoonotic pathogen spillover.[214] This research sheds new light on the importance of environmental treaty frameworks tackling those issues, such as the Ramsar Convention on Wetlands,[215] the Convention on International Trade of Endangered Species (CITES),[216] the Convention on Biological Diversity[217] or the UN Convention to

[209] IPBES, *Workshop Report on Biodiversity and Pandemics of the Intergovernmental Platform on Biodiversity and Ecosystem Services* (IPBES October 2020)(IPBES Report); R Gibb, DW Redding, K Qing Chin, CA Donnelly, TM Blackburn, T Newbold and KE Jones, 'Zoonotic Host Diversity Increases in Human-Dominated Ecosystems' (2020) 584 Nature 398; KJ Olival, PR Hosseini, C Zambrana-Torrelio, N Ross, TL Bogich and P Daszak, 'Host and Viral Traits Predict Zoonotic Spillover From Mammals' (2017) 546 Nature 646; S Cobey, 'Modeling Infectious Disease Dynamics' (2020) 368 Science 713.

[210] EC Holmes, SA Goldstein, AL Rasmussen, DL Robertson, A Crits-Christoph, JO Wertheim, SJ Anthony, WS Barclay, MF Boni, PC Doherty, J Farrar, JL Geoghegan, X Jiang, JL Leibowitz, SJD Neil, T Skern, SR Weiss, M Worobey, KG Andersen, RF Garry and A Rambaut, 'The Origins of SARS-CoV-2: A Citical Review' (2021) 184 Cell 4848; WHO, 'WHO-Convened Study on the Origins of SARS-CoV-2: China Part, Joint WHO-China Study, 14 January - 10 February 2021' (30 March 2021) < https://www.who.int/publications/i/item/who-convened-global-study-of-origins-of-sars-cov-2-china-part>; WHO, 'Report on Origin of SARS-CoV-2' (26 March 2020) WHO/2019-nCoV/FAQ/Virus_origin/2020.1.

[211] Bernstein and others, 'The Costs and Benefits of Primary Prevention of Zoonotic Pandemics', 4-7.

[212] See AA Cunningham, P Daszak and JLN Wood, 'One Health, Emerging Infectious Diseases and Wildlife: Two Decades of Progress?' (2017) 372 Philosophical Transactions of the Royal Society B: Biological Sciences 1; JS Mackenzie and M Jeggo, 'The One Health Approach—Why Is It So Important?' (2019) 4 Tropical Medicine and Infectious Disease 88.

[213] Bird and Mazet, 'Detection of Emerging Zoonotic Pathogens'; KF Smith , M Goldberg , S Rosenthal, L Carlson, J Chen, C Chen and S Ramachandran, 'Global Rise In Human Infectious Disease Outbreaks' (2014) 11 Journal of the Royal Society Interface 1; IPBES Report; United Nations Environment Programme and International Livestock Research Institute, *Preventing the Next Pandemic: Zoonotic Diseases and How to Break the Chain of Transmission', Nairobi* (UNEP 2020); Preventing Pandemics at the Source, 'Letter to the U.S. Congress' (10 February 2021) <https://www.r2haction.org/ppats-letter>.

[214] IPBES Report, 2 and 11-18.

[215] Convention on Wetlands of International Importance especially as Waterfowl Habitat (adopted on 2 February 1971, entered into force on 21 December 1975) 996 UNTS 245.

[216] Convention on International Trade in Endangered Species of Wild Fauna and Flora (adopted on 3 March 1973, entered into force on 1 July 1975) 993 UNTS 243.

[217] Convention on Biological Diversity (adopted on 5 June 1992, entry into force on 29 December 1993) 1760 UNTS 79.

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Combat Desertification.[218] It also suggests that an upstream form of spillover prevention could be strengthened, and that the 'One Health' paradigm could guide the integration of measures to protect both the environment and health.[219]

Yet, focusing, on the one hand, on this upstream approach and, on the other hand, on the downstream containment approach may leave a blind-spot insufficiently addressed, namely the midstream form of prevention. Two aspects of the midstream prevention of pathogen spillover and zoonotic disease outbreak could be considered, researched and regulated. The first concerns the pre-emptive identification of certain categories of pathogens which present a particular level of risk and spillover potential, and of their spatial distribution, including possible spillover hotspots. Despite the challenges involved in such an exercise, there have been steps already taken in this direction.[220] The second aspect would involve the design of a credible and legitimate science/policy interface. The functions of such interface could include institutionalizing the types of risks identified in research, drawing a map in each country of spillover hotspots, categorized by risk level determining in turn the level of regulatory control and possibly inspection. Regulatory action could be guided by standards adopted by the science/policy interface, in a manner analogous to nuclear safety standards. By analogy, states parties to the Convention on Nuclear Safety (CNS)[221] undergo a form of peer-review at regular intervals regarding their national regulation of nuclear facilities.

Whether these or other arrangements are explored is less significant, for present purposes, than identifying the existence of a containment bias and, consequently, of a prevention blind-spot in the international regulation of infectious diseases, as embodied in the 2005 IHRs. Spillover prevention, particularly at the midstream level, is likely to grow in importance as the probability of pathogen spillover rises driven by

[218] United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (adopted on 17 June 1994, entered into force on 26 December 1996) 1954 UNTS 3.

[219] See TR Kelly, WB Karesh, CK Johnson, KVK Gilardi, SJ Anthony, T Goldstein, SH Olson, C Machalaba and JAK Mazet, 'One Health Proof of Concept: Bringing a Transdisciplinary Approach to Surveillance for Zoonotic Viruses at the Human-Wild Animal Interface' (2017) 137 Preventive Veterinary Medicine 112; Bird and Mazet, 'Detection of Emerging Zoonotic Pathogens'; TR Gillespie, KE Jones, AP Dobson, JA Clennon and M Pascual, 'COVID-Clarity Demands Unification of Health and Environmental Policy' (2021) 27 Global Change Biology 1319.

[220] Global Virome Project, see <http://www.globalviromeproject.org>; PREDICT Project, see <https://p2.predict.global>. For example, research arising from the PREDICT Project consortium has developed a 'ranking' of the spillover risks presented by 887 viruses hosted by wildlife species. Certain newly detected wildlife viruses (i.e. hitherto unknown) ranked higher in terms of risk than known zoonotic viruses. Such a ranking would provide an important first step to design and tailor regulatory action to pursue deep prevention, i.e. to prevent the spillover of a dangerous wildlife virus from happening.

[221] See Convention on Nuclear Safety (adopted on 17 June 1994, entered into force on 24 October 1996) 1963 UNTS 293, art 5, which establishes a peer-review system.

environmental change.[222] There is now significant momentum for such a focus and there seems to be more openness to explore fresh approaches.[223] Regardless of the immediate outcome of ongoing international initiatives, by acknowledging the containment bias, it is possible to incorporate spillover prevention into the scope of more comprehensive pandemic prevention efforts and, at the same time, to rid the system of a bias with a deep colonial past.

Appendix A

1. Procès-verbaux de la Conférence sanitaire internationale ouverte à Paris le 27 juillet 1851 (Paris, Imprimerie nationale 1851).
2. Protocoles de la Conférence sanitaire internationale ouverte à Paris le 9 avril 1859 (Paris, Imprimerie imperiale 1859).
3. Procès-verbaux de la Conférence sanitaire internationale ouverte à Constantinople le 13 février 1866, Tome I, Tome II (Constantinople, Imprimerie centrale 1866).
4. Procès-verbaux de la Conférence sanitaire internationale ouverte à Vienne le 1er juillet 1874 (Vienne, Imprimerie impériale et royale 1874).
5. Proceedings of the International Sanitary Conference provided for by joint resolution of the Senate and the House of Representatives in the early part of 1881 (Washington, Government Printing Office 1881).
6. Protocoles et procès-verbaux de la Conférence sanitaire internationale inaugurée le 20 mai 1885 (Rome, Imprimerie du Ministère des Affaires Étrangères 1885).
7. Protocoles et procès-verbaux de la Conférence sanitaire internationale de Venise inaugurée le 5 janvier 1892 (Rome, Imprimerie nationale de J. Bertero 1892)
8. Protocoles et procès-verbaux de la Conférence sanitaire de Dresde le 11 mars-15 avril 1893, (Dresde, Imprimerie B. G. Teubner 1893)
9. Procès-verbaux de la Conférence sanitaire internationale de Paris le 7 février-3 avril 1894 (Paris, Imprimerie nationale 1894).
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