

INTERNATIONAL AND OPERATIONAL RESPONSES TO DISEASE CONTROL: BEYOND EBOLA AND EPISTEMOLOGICAL CONFINES

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[E]pidemics resemble great warning signs on which the true statesman is able to read that the evolution of his nation has been disturbed to a point which even a careless policy is no longer allowed to overlook...Don't crowd disease point everywhere to deficiencies of society?...Abnormal conditions always produce abnormal situations. War, plague and famine condition each other, and we don't know any period in world history where they did not appear in more or less large measure either simultaneously or following each other.

Rudolf Virchow, REPORT ON THE TYPHUS EPIDEMIC IN
UPPER SILESIA 307 (1848).

I. INTRODUCTION

The twentieth major outbreak of Ebola Virus Disease (“EVD”) began undetected in December 2013 in Guéckédou, Guinea. A one-year old boy, Emile Oumnoouno, died on 28 December 2013, in Meliandou, Guinea, with symptoms of diarrhea and fever as the first casualty of the current and ongoing EVD outbreak.¹ By early 2014, high fatality rates had already sieged three West African nations: Guinea, Liberia² and Sierra Leone.³ While cholera and Lassa fever were first thought to be the likely cause of the fatalities, laboratory confirmation of EVD was received on 23 March 2014;⁴ the date on which the Ministry of Health of Guinea notified WHO of its rapidly evolving EVD outbreak.⁵ From here on, things progressed rapidly and “members of the United Nations Security Council expressed ‘their deep concern over the current outbreak of the Ebola virus in some countries in West Africa’” early in July 2014⁶ as the

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1. Kevin Sack et al., *How Ebola Roared Back*, N.Y. TIMES (Dec. 29, 2014), http://www.nytimes.com/2014/12/30/health/how-ebola-roared-back.html?hp&action=click&pgtype=Homepage&module=a-lede-package-region®ion=top-news&WT.nav=top-news&_r=2 [https://perma.cc/ZJ34-UGXF].

2. *Ebola Virus Disease in Liberia*, WHO REGIONAL OFF. AFR. (Mar. 30, 2014), http://www.who.int/csr/don/2014_03_30 Ebola_lbr/en/ [https://perma.cc/H8W-56C6].

3. *Ebola Virus Disease West Africa—Update*, WHO REGIONAL OFF. AFR. (May 28, 2014), http://www.who.int/csr/don/2014_05_28 Ebola/en/ [https://perma.cc/N4SU-NPJ5].

4. Anna Petherick, *Ebola in West Africa: Learning the Lessons*, 385 LANCET 591, 591 (2015).

5. *Ebola Virus Disease in Guinea*, WHO REGIONAL OFF. AFR. (Mar. 23, 2014), http://www.who.int/csr/don/2014_03_23 Ebola/en/ [https://perma.cc/42AA-6P89].

6. Gian Luca Burci & Jakob Quirin, *Ebola, WHO, and the United Nations: Convergence*

virus subsequently spread, through human-to-human transmission, to Nigeria (22 July 2014).⁷ Isolated incidences were also reported in Senegal (29 August 2014),⁸ the United States of America (“U.S.”) (30 September 2014),⁹ Mali (30 September 2014),¹⁰ and the UK (29 December 2014).¹¹ On 8 August 2014, the World Health Organisation (“WHO”) declared the Ebola outbreak to be a *Public Health Emergency of International Concern* (“PHEIC”) in terms of the International Health Regulations (“IHR 2005”) and because it was an “extraordinary event with public health risks to other countries.”¹² This pronouncement called into action the 194 signatory nations to the WHO to participate in the prevention, surveillance, control, response, and reporting of the disease which had, by then, already reached epidemic status.¹³ And, on 18 September 2014, the United Nations (“U.N.”) Security Council unanimously adopted Resolution 2177, “determining that the unprecedented extent of the Ebola outbreak in Africa constitutes a threat to international peace and security.”¹⁴ This meeting was described as “historic” by the Secretary-General as being the first instance where the Security Council has considered a disease outbreak to be “a threat to international peace and security”¹⁵ and only the second time that the Security

of Global Public Health and International Peace and Security, 18 AM. SOC’Y INT’L L. 1 (2014).

7. *Ebola Virus Disease West Africa—Update*, WHO REGIONAL OFF. AFR. (July 27, 2014), http://www.who.int/csr/don/2014_07_27_ebola/en/ [https://perma.cc/DPE2-9AQ8].

8. *Ebola Virus Disease Update—Senegal*, WHO REGIONAL OFF. AFR. (Aug. 30, 2014), http://www.who.int/csr/don/2014_08_30_ebola/en/ [https://perma.cc/EG7W-6HLS].

9. *Ebola Virus Disease—United States of America*, WHO REGIONAL OFF. AFR. (Oct. 1, 2014), <http://www.who.int/csr/don/01-october-2014-ebola/en/> [https://perma.cc/8KA9-K57M]. To date, have been a total of four cases reported and first diagnosed in the U.S. *Cases of Ebola Diagnosed in the United States* CTNS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/united-states-imported-case.html> [https://perma.cc/M5QA-J9SH].

10. *Ebola Virus Disease—Mali*, WHO REGIONAL OFF. AFR. (Oct. 31, 2014), <http://www.who.int/csr/don/31-October-2014-ebola/en/> [https://perma.cc/6JQ3-45GZ]; John M. Drake et al., *Ebola Cases and Health System Demand in Liberia*, 13 PLOS BIOLOGY 1, 2 (2015).

11. *Ebola Situation Report*, WORLD HEALTH ORG. (Feb. 4, 2015), <http://apps.who.int/ebola/en/ebola-situation-report/situation-reports/ebola-situation-report-4-february-2015>.

12. *Notes on the Interim U.S. Guidance for Monitoring and Movement of Persons with Potential Ebola Virus Exposure*, CTNS. FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/vhf/ebola/exposure/monitoring-and-movement-of-persons-with-exposure.html> [https://perma.cc/M7P7-QUDZ] (last updated Feb. 19, 2016).

13. An epidemic occurs when a disease affects a greater number of persons than usual for the locality or the disease spreads to areas not usually associated with the disease. A pandemic is an epidemic of world-wide proportions. *Statement on the Meeting of the International Health Regulations Emergency Committee Regarding the 2014 Ebola Outbreak in West Africa*, WHO REGIONAL OFF. AFR. (Aug. 8, 2014), <http://www.who.int/mediacentre/news/statements/2014/ebola-20140808/en/> [https://perma.cc/P4KE-56SG]; Drake et al., *supra* note 10 at 1.

14. S.C. Res. 2177, ¶ 5 (Sept. 18, 2014).

15. Burci and Quirin suggest that Resolution 2177 “represents the most cogent recognition

Council has dealt directly with a public health problem—the other being HIV/AIDS.¹⁶

However, the most recent Ebola outbreak will not only be remembered for this “historic” adoption of U.N. Security Council resolution 2177. The most recent EVD outbreak will also be remembered for what has been described as the “criminally late” response of the WHO in recognising the potential severity of the outbreak and in reacting timeously with the necessary, appropriate, and effective measures.¹⁷ According to the most recent WHO situation report,¹⁸ a total of over 28,616 reported, confirmed, probable, and suspected cases of EVD and over 11,310 deaths have been recorded in the three most affected countries: Guinea, Liberia, and Sierra Leone.¹⁹ In the last report in which specific statistics on health worker infections were included, it was stated that a total of 881 confirmed health worker infections have been reported in these three countries and that 513 of these health workers had succumbed due to the infection.²⁰ And, although the most recent EVD outbreak is now generally regarded as having been contained, it is also important to note that due to widespread under-reporting, the true number of infections and fatalities will never really be known and is widely believed to be considerably higher.²¹

Much has already been written on this most recent EVD outbreak—evaluating and dissecting the contributions and failings of the various role-players involved, and considering what can be done differently in future. This article will contribute to this important and ongoing debate and will specifically focus on the international, operational, and national legal frameworks in terms of which large-scale health crises like that of Ebola play out. It will be argued that the very culture and architecture of this transnational legal and operational framework for public health emergencies is isolated from the national realities in which it operates and merely offers a hierarchical authority of what legally ought to be done, with little regard to what is actually necessary and

to date of the security implications of widespread outbreaks of lethal infectious diseases.” Burci & Quirin, *supra* note 6.

16. See S.C. Res. 1308 (July 17, 2000); S.C. Res. 1983 (June 7, 2011); Burci & Quirin, *supra* note 6.

17. Marc DuBois et al., *The Ebola Response in West Africa: Exposing the Politics and Culture of International Aid*, HUMANITARIAN POL’Y GROUP (Oct. 2015), <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9903.pdf> [<https://perma.cc/A66L-9DC7>].

18. *Situation Report: Ebola Virus Disease*, WHO REGIONAL OFF. AFR. (June 10, 2016), http://apps.who.int/iris/bitstream/10665/208883/1/ebolaitrep_10Jun2016_eng.pdf?ua=1 [<https://perma.cc/R5ES-C4M8>].

19. Drake et al., *supra* note 10, at 8 (noting that the fatality rate for those cases with known clinical outcome is around 70%).

20. *Ebola Situation Report—30 September 2015*, WHO REGIONAL OFF. AFR. (Sept. 16, 2015), <http://apps.who.int/ebola/current-situation/ebola-situation-report-30-september-2015> [<https://perma.cc/CV6K-QKHZ>].

21. Drake et al., *supra* note 10, at 2.

possible on the ground. In considering the most recent Ebola outbreak, and juxtaposing it with the Severe Acute Respiratory Syndrome (“SARS”) outbreak of 2003, it will be shown that a more nuanced transnational legal understanding of public health emergencies is indeed needed—a holistic approach that goes beyond biomedical/scientific and legalistic confines in dealing with disease outbreak and control. It is again important to emphasize here, for the sake of clarity, that this article is exclusively focused on the transnational legal and operational framework in which public health emergencies play out. International humanitarian responses, general public health considerations, as well as other national systemic considerations—like those relating to health systems—although important, will not be considered here.

A brief interlude on the methodology of this article also deserves a place here. As already indicated above, much literature exists on the Ebola outbreak, and with the attention now shifting to the Zika virus, it is important to further distinguish the contribution of this article. This article utilizes a primarily transdisciplinary lens in narrating the rise and fall of two notable epidemics of the modern world. A variety of sources, from different disciplines and bases, are used in presenting an easily accessible text that recounts key themes of both epidemics—highlighting similarities and differences, and raising important questions for the future. As with most narrative research methodologies, reliance is also placed on newspaper articles in constructing an account of how the two epidemics played out, each in its own particular time and space.²² The disease narrative ultimately presented in this article, therefore simultaneously serve as a chronical of the two epidemics, while also reflecting why a more nuanced transnational legal understanding of public health emergencies is indeed needed.

To facilitate this discussion and analysis, the content of this article is divided into four parts. First, in Part II, the lifecycle of two epidemics will be considered, Ebola, and the 2003 SARS outbreak. Considering these two outbreaks and the international legal responses thereto provides a valuable lens through which the multiple layers of disease outbreaks and control from the past to the present can be observed. In Part III, this paper provides an overview of the international legal and operational framework for public health emergencies, confined to references and examples from the two outbreaks selected for and discussed in Part II. Part IV considers the national legal responses of those countries most affected by the recent Ebola outbreak and the 2003 SARS outbreak. Part V discusses the question of whether to quarantine or not. Part VI discusses lessons to be learned, and why knowledge production beyond disciplinary confines is necessary. And finally, Part VII of this article concludes with a critical analysis of two observed failings of the current international legal and operational framework for public health emergencies. In considering the shortcomings of the current framework it will be argued that a more holistic approach to disease control is required that looks beyond disciplinary confines.

22. JON D. LEE, AN EPIDEMIC OF RUMORS: HOW STORIES SHAPE OUR PERCEPTIONS OF DISEASE 9 (2014).

II. EBOLA AND SARS AS NARRATIVES OF INFECTION DISEASES, EPIDEMICS,
AND PUBLIC HEALTH EMERGENCIES*A. Ebola: Forty Years in the Making of an Epidemic*

The unfolding events of the twentieth major global EVD outbreak²³ stands in stark contrast to the first recorded outbreak of EVD in 1976 in Sudan and the Democratic Republic of Congo (then Zaire), and not for the obvious reasons. One would imagine that with the advances in medical technology as well as the knowledge gained from the various major and individualized or isolated cases of Ebola infection over the past forty years that we would have been well-prepared when the most recent outbreak was confirmed on 23 March 2014. We were not, and considering the collective EVD literature available, it seems as though we have made little progress since 1976 with regard to the response to, and management of, this infectious disease.

The first outbreak of the acute viral haemorrhagic fever occurred between June and November of 1976 in southern Sudan, with a reported 284 people infected and a 53% infected mortality rate (151 people died).²⁴ The first identifiable case in Sudan was that of a storekeeper in a cotton factory who became ill on 27 June 1976, and died in hospital on 6 July 1976.²⁵ Patients presented with influenza-like symptoms, including fever, headache, and joint and muscle pains, and eventually with diarrhea, vomiting, chest pain, pain and dryness of throat, and a rash. Seventy-one percent of the infected patients also had haemorrhagic manifestations.²⁶ The source town of this outbreak in Sudan was Nzara, which is also believed to have been the source of infection for the outbreak in the Bumba Zone of Zaire, although the link between these two outbreaks could never be established conclusively.²⁷

The outbreak in Zaire²⁸ raged only a number of weeks, from 1 September 1976 to 24 October 1976, and was localized in the Bumba Zone of the Equateur Region, with most cases recorded within a radius of seventy kilometers of Yambuku. Three hundred and eighteen cases were reported with thirty-eight serologically confirmed survivors. Patient zero in this Zaire outbreak was a forty-four-year-old male instructor from the local Mission School who started to show symptoms on 1 September 1976, five days after having received an injection of chloroquine at the outpatient clinic of Yambuku Mission Hospital for

23. There have been at least thirty-five reported incidences of Ebola worldwide from 1976 to date. WHO Ebola Response Team, *Ebola virus disease in West Africa—The first 9 months of the epidemic and forward projections*, 1481 NEW ENG. J. MED. 371, 1481-95 (2014).

24. WHO Int'l Study Team, *Ebola Haemorrhagic Fever in Sudan 1976*, 56 BULL. WHO 247, 247 (1978).

25. *Id.* at 248.

26. *Id.* at 247.

27. *Id.*

28. Now the Democratic Republic of Congo.

presumptive malaria.²⁹ Within one week, several other patients who had received treatment at the clinic for various ailments and diseases also reported the same symptoms. The Yambuku Mission Hospital was eventually forced to close down on 3 October 1976 after eleven of its seventeen medical members of staff had died.³⁰

Much clinical data on EVD, or acute viral haemorrhagic fever as it was then referred to, was collected during its first outbreak in Sudan and Zaire. It was documented, for example, that the incubation period and duration of the disease averaged about one week, that patients presented non-specific symptoms after three to four days, and that some of these non-specific symptoms included a progressively severe sore throat, a maculopapular rash, intractable abdominal pain, and eventually also bleeding from multiple sites, principally the gastrointestinal tract.³¹ Laboratory tests confirmed that this constellation of symptoms was caused by a virus morphologically similar to the Marburg virus but immunologically distinct, and it was eventually named the Ebola virus—the name of a river close to the Yambuku village and a word which translates to “Black River” in the local language of Lingala.³² The spread of the virus was interrupted by, *inter alia*, isolating patients in their villages, using protective clothing and respirators, and carefully disposing of potentially contaminated excreta.³³ With regard to possible treatments for the disease, it was reported that a total of 201 (200–300 ml each) of plasma containing Ebola virus antibodies in titres of at least 1:64 were obtained and frozen, and that these units were used to treat a laboratory worker injected with the Ebola virus.³⁴ Since the laboratory worker recovered, it was generally accepted that the antibodies may have helped therapeutically.³⁵ Ebola virus antibodies were also found in five other persons from the area who were not ill and who did not have any contact with the infected villages or the Yambuku hospital during the epidemic.³⁶ An international commission³⁷ consequently stated in their report to the WHO in 1976 that “this suggests that the virus is in fact endemic to the region and [that this] should lead

29. Int'l Comm'n Rep., *Ebola haemorrhagic fever in Zaire 1976*, 56(2) BULL. WHO 271, 278 (1978).

30. *Id.* For a chronology of Ebola Virus Disease outbreaks, see *Outbreaks Chronology: Ebola Virus Disease*, CTRS. FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/vhf/ebola/outbreaks/history/chronology.html> [<https://perma.cc/F4EE-2E8C>] (last visited Feb. 15, 2018).

31. Int'l Comm'n Rep., *supra* note 29, at 271.

32. It is interesting to note that many such infectious diseases have been named after rivers. A few include: the Crimean-Congo hemorrhagic fever named after the Congo River, the Machupo virus which causes Bolivian hemorrhagic fever or black typhus named after a Bolivian river, and the mosquito-borne Ross river virus which is named after a river in northern Queensland, Australia.

33. Int'l Comm'n Rep., *supra* note 29 at 272.

34. *Id.*

35. *Id.*

36. *Id.*

37. *Id.* This commission was established on 18 October 1976 and tasked to report on the outbreak to the WHO.

to further effort to uncover a viral reservoir in Zaire.”³⁸

The Zaire commission described this first outbreak of EVD as follows:

No more dramatic or potentially explosive epidemic of a new acute viral disease has occurred in the world in the past 30 years. The case mortality rate of Ebola haemorrhagic fever in Zaire of 88% is the highest on record except for rabies infection. In the circumstances it was not surprising that much desired information was never obtained. Delays in recognition, notification to international health agencies, and specific diagnosis of the disease contributed greatly to this outcome. No better example comes to mind to illustrate the need for national disease surveillance and the prompt solicitation of international assistance, nor of the need for the development of international resources, comprising personnel, equipment, transport, communication, and finance, that can be made available in a very few days to cope with such emergencies.³⁹

The Sudanese commission, in turn, recommended that the following procedure be followed once a possible Ebola case is identified: first, blood specimens must be collected for diagnosis, then a surveillance system must be put in place to identify other cases of influenza-like symptoms with or without haemorrhagic manifestations.⁴⁰ Medical staff must wear protective clothing including gowns, gloves and masks (or better respirators), and must disinfect patients’ excreta with an effective disinfectant like formaldehyde.⁴¹ A follow-up system must also be put in place to check on those with whom the infected persons have had contact and their temperature must be taken daily, isolating them immediately if there is any indication of a fever.⁴² Once a diagnosis is made, convalescent plasma must be dispatched to the geographical areas of concern as soon as possible.⁴³ The commission also stated that “[w]ith such a simple system, these diseases can be identified, isolated, and patients properly treated.” And added that

[w]ith experience, no doubt, more outbreaks of these diseases will be identified. We shall probably find that large outbreaks are rare and can be prevented with simple precautions. However, if appropriate precautions are not taken early, as was the case with the first outbreak of viral haemorrhagic fever in Sudan, these diseases can spread far and wide, and across international borders. The hospital, especially the referral hospital, is the site where such outbreaks can either be recognised and halted, or unrecognized and disseminated. With them rests the

38. *Id.*

39. *Id.* at 288.

40. WHO Int’l Study Team, *supra* note 24, at 255.

41. *Id.*

42. *Id.*

43. *Id.*

responsibility for stopping the spread of these dangerous diseases.⁴⁴

The recommendations of the two commissions are still very relevant today because, as in 1976, no vaccine or cure for Ebola exists, and the only way in which to curb the spread of this infectious disease is to break the chains of infection. Health workers must therefore identify people who are infected and isolate them from society. This is pivotal to ensure that no further infections take place, either by way of direct contact with the patient and his or her bodily fluids (like blood or sweat which contains high concentrations of Ebola particles) or by droplet infection.⁴⁵ Everybody who has been exposed to the virus (had contact with an infected person) must furthermore be identified and then monitored for the onset of symptoms. This is pivotal as Ebola is extremely infectious. But while this monitoring of such persons at risk is important, draconian measures, like an outright quarantine order, are not necessary as people infected with the Ebola virus only become contagious after they had developed a fever and other symptoms like diarrhea, vomiting, or severe headaches. And, Ebola is furthermore only contagious when the person is symptomatic and the first symptom is almost always a fever, which makes the modern day temperature screening at airports particularly effective.⁴⁶

After the first major outbreaks of EVD in the Democratic Republic of Congo (then Zaire) and Sudan, individualised infections were reported in England and Zaire in 1976 and 1977, respectively. The virus was also identified and isolated in the Philippines in 1989-1990 in a primate facility responsible for exporting animals to the U.S., and in 1989, 1990 and 1996 at facilities in Virginia, Pennsylvania, and Texas receiving monkeys imported from the Philippines.⁴⁷ A recurrent outbreak with a 65% mortality rate⁴⁸ was recorded at the same site in Nzara South Sudan in 1979.⁴⁹ However, major Ebola outbreaks on the African continent were only observed again in 1994/1995, approximately twenty years

44. *Id.*

45. When the virus travels inside droplets of fluid released into the air, for example when a person coughs, it is known as droplet infection. Airborne transmission refers to when the droplets carrying the virus dry out and the virus remains airborne travelling on dust particles. Another common route of entry is thought to be the wet membrane on the inner surface of the eyelid, which a person may touch with a contaminated fingertip. Richard Preston, *The Ebola wars*, THE NEW YORKER (Oct. 27, 2014), <http://www.newyorker.com/magazine/2014/10/27/ebola-wars> [<https://perma.cc/7P75-F4RZ>].

46. Editorial Bd., *The dangers of quarantines: Ebola policies made in panic cause more damage*, N.Y. TIMES (Oct. 27, 2014), http://www.nytimes.com/2014/10/28/opinion/ebola-policies-made-in-panic-cause-more-damage.html?_r=0 [<https://perma.cc/P9GF-NFKN>].

47. Also in 1992 at a facility in Italy importing primates from the Philippines. *See, Outbreaks Chronology: Ebola Virus Disease*, CTNS. FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/vhf/ebola/outbreaks/history/chronology.html> [<https://perma.cc/F4EE-2E8C>] (last updated July 28, 2017).

48. *Id.* Thirty-four people were infected and twenty-two died.

49. *Id.*

after the first outbreaks in Zaire and South Sudan. In 1994, a total of fifty-two people were infected, of which thirty-one died at various sites of gold-mining camps deep in the rainforest of Gabon.⁵⁰ In 1995, another outbreak in the Democratic Republic of Congo claimed the lives of 250 people.⁵¹ In this instance, the index patient was identified as having worked in the rainforest adjoining the city of Kikwit. Further outbreaks in Gabon occurred in 1996,⁵² 1996/1997⁵³ and 2001/2002,⁵⁴ in the Republic of Congo in 2001/2002,⁵⁵ 2002/2003⁵⁶ and 2003,⁵⁷ and in the Democratic Republic of Congo in 2007,⁵⁸ 2008/2009,⁵⁹ and 2012.⁶⁰ Another African country, Uganda, reported its first incidence of Ebola in 2000/2001,⁶¹ and had another outbreak in 2007/2008.⁶² And the most recent outbreak of EVD in the Democratic Republic of Congo (“DRC”) was in August/November 2014 in multiple villages across the DRC, an outbreak that was completely unrelated to the ongoing outbreak of Ebola in West Africa.⁶³

Given the reports and recommendations by the International Commissions to Zaire and Sudan in 1976—both stressing the need for national disease surveillance and the prompt solicitation of international assistance as well as the prophetic warnings that large outbreaks, while imminent and potentially disastrous, can be prevented with simple precautions—the question can rightly be asked how it is even possible for the public health emergency of the most recent Ebola outbreak to have come about. Given our experience and knowledge of EVD over the past forty plus years, how can it be that the most recent outbreak of Ebola got so out of control with a death toll of over 28,000? Many possible

50. *Outbreaks Chronology: Ebola Virus Disease*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/vhf/ebola/outbreaks/history/chronology.html> [<https://perma.cc/F4EE-2E8C>] (last visited 28 March 2018).

51. *Id.* Three hundred and fifteen people were infected and twenty died (81% mortality rate).

52. *Id.* Thirty-seven people were infected and twenty-one died (57% mortality rate).

53. *Id.* Sixty people were infected and forty-five died (74% mortality rate).

54. *Id.* Sixty-five people were infected and fifty-three died (82% mortality rate).

55. *Id.* Fifty-seven people were infected and forty-three died (75% mortality rate).

56. *Id.* One hundred and forty-three people were infected and One hundred and twenty-eight died (89% mortality rate).

57. *Id.* Thirty-five people were infected and twenty-nine died (83% mortality rate).

58. *Id.* Two hundred and sixty-four people were infected and eighty-seven died (71% mortality rate).

59. *Id.* Thirty-two people were infected and fifteen died (47% mortality rate).

60. *Id.* Thirty-six people were infected and thirteen died (36.1% mortality rate).

61. *Id.* Four hundred and twenty-five people were infected and two hundred and twenty-four died (53% mortality rate).

62. *Id.* One hundred and forty-nine people were infected and thirty-seven died (25% mortality rate). Other isolated incidences in Uganda were also reported in May 2011, June–October 2012 and in November 2012 to January 2013.

63. *Id.* In this latest outbreak in the DRC, approximately sixty-six people were infected and forty-nine died (74% mortality rate).

factors contributing to the dire state of the current situation have been considered, including the negligent contact tracing of those infected and the inadequate provision for following-up on and checking for symptoms of those who had been exposed to the virus.⁶⁴ Some also blame the responders who had convinced themselves too early that a decline in newly reported cases marked the end of the outbreak; yet others blame the poor flow of information between the affected nations about those infected and those exposed to the virus arguing that this was not only responsible for the chain of illnesses and deaths in Sierra Leone, but also the second-wave outbreak in late May in Liberia.⁶⁵ What is clear, however, is that it is ultimately the absence of a robust and coordinated response that allowed for an invisible epidemic to thrive alongside the one assumed to be contained.⁶⁶

B. SARS: A New Chapter in the History of Infectious Diseases?

In contrast to the protracted and persistent history of the Ebola virus, SARS is generally regarded as the first new and serious contagious disease of the twenty-first century.⁶⁷ It was first reported in November 2002 in the Guangdong Province of China and became almost an instantaneous global threat as it spread along air-travel routes from China and Hong Kong to 29 other countries, including Taiwan, Singapore, Canada, Vietnam, the Philippines and the U.S.⁶⁸ Yet, while the Ebola virus has been forty years in the making, with many thousands of people having died in its wake, the SARS outbreak was comparatively short and less severe. Georges Benjamin, the executive director of the American Public Health Association, described it as follows: "...SARS was not 'the big one.' It did, however, cost over USD \$40 billion and served as a global wake-up call."⁶⁹

Contrary to the mass of information available on Ebola before its most recent outbreak, scientists from both the developed and less developed countries were equally unaware as to the cause of SARS, the ways in which to diagnose it, the treatments, and the precautionary measures that should be taken to prevent its

64. Kevin Sack et al., *How Ebola Roared Back*, N.Y. TIMES (Dec. 29, 2014), http://www.nytimes.com/2014/12/30/health/how-ebola-roared-back.html?hp&action=click&pgtype=Homepage&module=a-lede-package-region®ion=top-news&WT.nav=top-news&_r=2 [<https://perma.cc/Z9LB-9TXL>].

65. *Id.*

66. *Id.*

67. Grace Wong, *Has SARS infected the property market? Evidence from Hong Kong*, 63 J. URB. ECON. 74, 75 (2008); Lawrence O. Gostin et al., *SARS and International Legal Preparedness*, 77 TEMP. L. REV. 155, 155 (2004).

68. Matthew Rimmer, *The race to patent the SARS virus: The TRIPS agreement and access to essential medicines*, 5 MELB. J. INT'L L. 335, 336 (2004); LEE, *supra* note 22, at 9.

69. Georges C. Benjamin, *Afterword* to TIMOTHY J. BROOKES & OMAR A. KHAN, BEHIND THE MASK: HOW THE WORLD SURVIVED SARS, THE FIRST EPIDEMIC OF THE 21ST CENTURY 235 (Am. Pub. Health Ass'n 2005).

spread.⁷⁰ This lack of scientific knowledge on the disease was further exacerbated by the immense secrecy in which the Chinese government initially shrouded its occurrence. It was, for example, only on 10 February 2003, that the WHO learned from the Chinese government about the 305 cases of atypical pneumonia that had occurred in the Guangdong province since, at least, November 2002.⁷¹ But the world was introduced to SARS shortly thereafter (21-23 February 2003), when an elderly professor from Guangdong travelled to Hong Kong to attend a wedding, and infected many other guests at the hotel where he was staying. The guests eventually travelled to Vietnam, Canada, the U.S., and Singapore.⁷²

On 12 March 2003, the WHO issued a global health alert about a new flu-like disease that seemed to be highly contagious, and on 21 March the Chinese government formally requested assistance from the WHO in investigating the outbreak in Guangdong.⁷³ A WHO Multi-centre Collaborative Network on SARS Aetiology and Diagnosis was subsequently established with a network of scientists, doctors and health professionals working around the clock to identify the cause of this new disease, to develop appropriate diagnostic tests, define clinical features, and investigate its modes of transmission.⁷⁴ On 14 April 2003, Canadian scientists successfully sequenced the DNA of the then yet unknown coronavirus, and today we know that SARS is a form of atypical pneumonia caused by a new strain of the coronavirus, which is generally referred to as the SARS virus (“SARS-CoV”).⁷⁵ It is believed that SARS-CoV is an animal virus that crossed the species barrier to humans due to ecological changes and changes in human behavior that increased human exposure to the virus and also fostered virus adaptation ultimately enabling human-to-human transmission.⁷⁶ The animal reservoir for the SARS-CoV pathogen is furthermore believed to be vast, and includes wildlife species like the Himalayan masked palm civet, the Chinese ferret badger, and the raccoon dog, all of which are consumed as delicacies in southern China. Domestic cats and ferret have also been found to be infected with, and able to infect other animals with, the SARS virus.⁷⁷ Curiously, patient zero for the 2003 SARS outbreak is believed to be a Shenzhen-based cook who often prepared meals containing meat from animals caught in the wild, and who checked into the Futian Hospital of Chinese Medicine on 20 August 2002 after

70. Peter K. Yu, *Virotech Patents, Viropiracy, and Viral Sovereignty*, 45 ARIZ. ST. L.J. 1563, 1590 (2013).

71. LEE, *supra* note 22, at 14.

72. *Id.*

73. *Id.*

74. Yu, *supra* note 70, at 1590-91.

75. Rimmer, *supra* note 68, at 336; LEE, *supra* note 22, at 19.

76. WHO DEP'T OF COMMUNICABLE DISEASE SURVEILLANCE AND RESPONSE, WHO GUIDELINES FOR THE GLOBAL SURVEILLANCE OF SEVERE ACUTE RESPIRATORY SYNDROME (SARS): UPDATED RECOMMENDATIONS, OCTOBER 2004, at 6 (2004), http://www.who.int/csr/resources/publications/WHO_CDS_CSR_ARO_2004_1.pdf?ua=1 [<http://perma.cc/5MNX-2FK6>].

77. *Id.*

having already infected his wife and two of his sisters.⁷⁸

The clinical features of SARS can range from a severe form of respiratory disease, after which the syndrome was named, to other milder and more atypical (non-specific) flu-like or pneumonia symptoms.⁷⁹ A real risk exists for the disease not to be correctly diagnosed without supportive epidemiological and laboratory testing; therefore, a high level of awareness about the spectrum of disease caused by SARS must always be maintained amongst health professionals, especially in South-east Asia where the epidemic originated.⁸⁰ SARS is transmitted by way of respiratory exudates and contaminated surfaces on membranes of the mouth, nose or eyes.⁸¹ The most effective epidemic control measures for this virus is therefore—in addition to the early detection, isolation and treatment of those infected—to reduce population contact and promote personal and environmental hygiene.⁸²

The disease is furthermore characterized by rapid transmission and a high mortality rate.⁸³ For example, in the absence of any control measures, an average of two to four people can be infected by each SARS patient; in contrast to the Ebola virus where the incubation period can be anywhere between two to twenty-one days, the incubation period for SARS is only ten days.⁸⁴ For this reason, the potential severity of a SARS outbreak should not be under-estimated as the SARS virus is sufficiently infectious to cause a very large epidemic if unchecked, but is completely controllable with public health measures such as early detection, quarantine and medical treatment.⁸⁵ While much has been learned about the virus, knowledge about its epidemiology and ecology remains incomplete; although the most probable sources of infections with SARS-Cov today would result from exposure in laboratories, the possibility of the re-emergence of SARS in epidemic form is not impossible.⁸⁶

The countries hardest hit by the SARS epidemic, which ranged from 1 November 2002 to 11 July 2003, were the People's Republic of China,⁸⁷ the

78. LEE, *supra* note 22, at 18.

79. WHO DEP'T OF COMMUNICABLE DISEASE SURVEILLANCE AND RESPONSE, *supra* note 76, at 7.

80. *Id.*

81. Grace Wong Bucchianeri, *Is SARS a Poor Man's Disease? Socioeconomic Status and Risk Factors for SARS Transmission*, F. FOR HEALTH ECON. & POL'Y 1, 4 (2010).

82. *Id.*

83. Eugenia Tognotti, *Lessons from the History of Quarantine, from Plague to Influenza*, 19 EMERGING INFECTIOUS DISEASES 254, 258 (2013).

84. Grant Hill-Cawthorne & Adam Kamradt-Scott, *Mandatory Ebola quarantine is about politics, not public health*, THE CONVERSATION (Oct. 29, 2014), <http://theconversation.com/mandatory-ebola-quarantine-is-about-politics-not-public-health-33531> [<http://perma.cc/9W8J-3F7R>].

85. Bucchianeri, *supra* note 81, at 4.

86. WHO DEP'T OF COMMUNICABLE DISEASE SURVEILLANCE AND RESPONSE, *supra* note 76, at 6.

87. *Cumulative Number of Reported Probable Cases of SARS*, WHO (July 11, 2003),

Hong Kong Special Administrative Region,⁸⁸ Taiwan,⁸⁹ and Canada.⁹⁰ The WHO reported that there were 8,437 known cases of SARS, with 813 deaths attributable to the SARS virus.⁹¹

Despite the marked differences in the lifecycle and impact of the 2003 SARS outbreak compared to that of the most recent Ebola epidemic, remarkable similarities exist. For example, just as the most recent Ebola outbreak is still ongoing and is generally described in terms of its failures, the 2003 SARS outbreak is far from forgotten and is generally still presented in literature as “a medieval plague, a medical disaster and an economic blight.”⁹² Similarities also exist in the manner in which these two public health emergencies were dealt with. Similar to the initial denial of the seriousness of the most recent Ebola outbreak by international organisations and national governments alike, there was also a “high-profile denial” by the Chinese government, and later also the Hong Kong authorities about the true nature, seriousness and extent of the spread of SARS.⁹³ And to those affected by Ebola, residents in Hong Kong and China were also reported to have felt abandoned and uninformed about the diagnosis, treatment and transmission mechanism of SARS, adding to feelings of uncertainty and trepidation in the wake of the disease.⁹⁴

By some standards, the SARS outbreak was certainly not the most severe of the epidemics that have plagued the world. Yet, it reminded us of how real the threat of a global epidemic is, and how vulnerable we still are despite all the medical and technological advances that we have privy to today. The SARS outbreak is also noteworthy for another reason; as the first emerging new epidemic of the age of globalization in which we live today, most stakeholders would say that it was contained rather effectively and efficiently in less than four months since its outbreak was announced, which makes the calamity of the most recent Ebola outbreak all the more problematic.

III. INTERNATIONAL AND OPERATIONAL LEGAL RESPONSES TO PUBLIC HEALTH EMERGENCIES

A. The International Legal Framework for Public Health Emergencies

The first organised institutional responses to disease control date back to the

http://www.who.int/csr/sars/country/2003_07_11/en/, [<https://perma.cc/N7RW-8RWS>].

88. *Id.* 1755 diagnosed cases and 298 deaths.

89. *Id.* 671 diagnosed cases and 84 deaths.

90. *Id.* 250 diagnosed cases and 38 deaths.

91. Rimmer, *supra* note 68, at 336; LEE, *supra* note 22, at 57; *Cumulative Number of Reported Probable Cases of SARS*, WHO (July 11, 2003), http://www.who.int/csr/sars/country/2003_07_11/en/, [<https://perma.cc/N7RW-8RWS>].

92. Rimmer, *supra* note 68, at 336.

93. Wong, *supra* note 67, at 77.

94. *Id.*

plague epidemic of 1347-1352.⁹⁵ Initially these responses were locally based and focused, but as technological advances improved, the available means of transport and drastically decreased travel time, and the establishment of new ports and port cities spurred possibilities for trade.⁹⁶ The ensuing mobilisation of people called for collaborative networks to regulate and control the spread of disease. The first English quarantine regulations were drafted in 1663, and the English Quarantine Act was promulgated in 1710 and revised in 1721, 1733, and again in 1743.⁹⁷ It was also during this time that a system of active surveillance for infectious diseases was established in the major Levantine cities and a network for infectious disease control was established with representatives from various countries connecting the great Mediterranean ports of Western Europe.⁹⁸

With the spread of Asiatic cholera to Europe, efforts at international health cooperation culminated with the first International Sanitary Conference in Paris on 23 July 1851.⁹⁹ The objective of this conference, and the conferences that were to follow,¹⁰⁰ was to reach agreement on the measures to be taken to limit the spread of epidemic diseases, and it provided a “unique forum for the international exchange of ideas between medical administrators and medical scientists of different nations and cultures.”¹⁰¹ Howard-Jones describes the printed records of these conferences as constituting “a living history of the different conceptions of the nature of epidemic diseases held during the latter half of the nineteenth century and immediately [there]after.”¹⁰² Howard-Jones also observed that the records show “how scientific knowledge that has been painfully won may be

95. B. Mafart & J.L. Perret, *History of the Concept of Quarantine* [In French], 58 (2 Supp.), MED TROP (MARS) 14, 14 (1998).

96. Tognotti, *supra* note 83, at 255.

97. *Id.*

98. *Id.* See generally CARLO M. CIPOLLA, FIGHTING THE PLAGUE IN SEVENTEENTH-CENTURY ITALY (U. Wis. Press 1981).

99. The nation states present at this conference included eleven European states—Papal, Sardinia, Tuscany, the two Sicilies, Austria, Great Britain, Greece, Portugal, Russia, Spain and France—as well as Turkey. NORMAN HOWARD-JONES, THE SCIENTIFIC BACKGROUND OF THE INTERNATIONAL SANITARY CONFERENCES 1851-1938, at 9 (Geneva: WHO 1975).

100. The second conference took place eight years later in 1859 in Paris and were followed by conferences in Constantinople (1866), Vienna (1874), Washington (1881), Rome (1885), Venice (1892), Dresden (1893), Paris (1894), Venice (1897), Paris (1903), Paris (1911-1912), Paris (1926) and Paris (1938). See the following sources for a more in-depth overview of the content of each conference and the role that they collectively played in establishing an international health security body, the WHO. Valeska Huber, *The Unification of the Globe by Disease? The International Sanitary Conferences on Cholera, 1851-1894*, 49 HIST. J. 453-476 (2006); MORTON A. KRAMER ET AL., INTERNATIONAL HEALTH SECURITY IN THE MODERN WORLD: THE SANITARY CONVENTIONS AND THE WORLD HEALTH ORGANISATION, DEP'T ST. BULL. (1947); WHO, THE FIRST TEN YEARS OF THE WORLD HEALTH ORGANISATION (Geneva: WHO 1958).

101. HOWARD-JONES, *supra* note 99, at 9.

102. *Id.* See generally Huber, *supra* note 100.

forgotten and, decades later, rediscovered.”¹⁰³ For example, while the concepts of convalescent cholera carriers, of mild or unapparent infections, and of the gall bladder as a reservoir of cholera vibrios were trumpeted as new discoveries in the 1960s, the records of the conferences actually show that these concepts were already universally accepted “some sixty or more years ago.”¹⁰⁴ This phenomenon is also evident from the historical overview on the Ebola virus provided above, where it was evident that our experience and knowledge of EVD accumulated over the past forty years was easily “forgotten” and did little to ensure appropriate, timely, and effective action with the most recent outbreak. A case in point is an article published in *The Lancet* on 9 May 2015 in which it is said that “[t]he unfamiliarity of Ebola delayed its detection.”¹⁰⁵ This is simply not true.

For four decades, these “Sanitary” conferences failed to produce on its promise of delivering internationally agreed upon standards for the regulation and control of infectious diseases due to the “utter ignorance of the causes of the epidemic diseases . . . [proving] . . . an insuperable barrier to international agreement.”¹⁰⁶ However, “as the etiologies of cholera, then plague, and later yellow fever were unraveled, the pace of international health cooperation quickened, leading to the foundation, one after the other, of the Pan American Sanitary Bureau, the Office International d’Hygiène publique,¹⁰⁷ the Health Organization of the League of Nations, and, finally, the World Health Organization, which incorporated all its predecessors.”¹⁰⁸ The WHO was established in 1948, three decades after the influenza pandemic of 1918—the most deadly pandemic ever recorded.¹⁰⁹

The Constitution of the WHO was adopted by the International Health

103. HOWARD-JONES, *supra* note 99, at 9.

104. *Id.*

105. Lawrence O. Gostin & Eric A. Friedman, *A Retrospective and Prospective Analysis of the Ebola Virus Disease Epidemic: Robust National Health Systems at the Foundation and an Empowered WHO at the Apex*, 285 LANCET 1902, 1902 (2015).

106. HOWARD-JONES, *supra* note 99, at 9.

107. This was the first non-regional international health organization. It was established on 3 December 1907 in Rome and had its last session on 21 April 1914, before the First World War.

108. HOWARD-JONES, *supra* note 99, at 9.

109. See Jeffery K. Taubenberger & David M. Morens, *Influenza: The Once and Future Pandemic*, 125 (Suppl 3) PUB. HEALTH REP. 16-26 (2010). It is important to differentiate between an “outbreak,” “epidemic,” and a “pandemic.” When the rate of infections and fatalities associated with a particular disease bypasses the existing control measures, it is often referred to as an outbreak. The term “outbreak” is therefore used to describe the sudden rise in the incidence of a particular disease. An outbreak can often lead to an epidemic, which the U.S. Centers for Disease Control and Prevention defines as “[t]he occurrence of more cases of disease than expected in a given area or among a specific group of people over a particular period of time.” A pandemic, in turn, is an extensive epidemic that is rampant in a country, continent or the world. An endemic disease refers to a disease native to a particular group or region, a disease that is regularly or constantly found among people of a specific region.

Conference with representatives from sixty-one States on 22 July 1946, and entered into force on 7 April 1948.¹¹⁰ Today, the WHO has 194 signatory nations who all accept and agree to the basic principles on which the WHO is based for the purpose of fostering and enabling co-operation amongst member states in order to promote and protect the health of all peoples. These principles include a commitment to health as a state of complete physical, mental, and social well-being, and the enjoyment of the highest attainable standard of this health as a fundamental right of every human being.¹¹¹ The objectives of the Organization are set out in Article 2 of its Constitution which confirms the WHO's coordinating authority and duty to establish and ensure effective collaboration between member states, and to provide technical, normative, material and operational support in all matters related to health, including public health issues in general, and health emergencies specifically.¹¹² The WHO has certainly developed into a (potentially) powerful institution from its early years with only sixty-one members to today, with its headquarters in Geneva, six strategically positioned regional offices, and representation by more than 7,000 people—including medical doctors, public health specialists, scientists and epidemiologists—from over 150 countries, territories and areas.¹¹³

With the recent Ebola outbreak, the WHO collaborated with the U.N. Mission for Ebola Emergency Response (“UNMEER”) and U.N. agency partners like UNICEF, WFP, OCHA, UNFPA and UNDP, as well as other international partners like the African Union, the U.S. Centers for Disease Control (“CDC”), MSF, the International Federation of the Red Cross (“IFRC”), the International Organization for Migration (“IOM”), UNAIDS, and partners of the Global Outbreak Alert and Response Network (“GOARN”). An Ebola Response Roadmap was also drafted by the WHO in August 2014, setting out the primary strategy for curbing the Ebola outbreak and to provide the basis for a significantly increased response.¹¹⁴ This was followed by the U.N.'s Overview of Needs and Requirements (“ONR”) and the STEPP Strategy which “were designed to assist governments and partners in the revision and resourcing of country-specific operational plans for the Ebola response, and to aid the coordination of international support to fully implement those plans.”¹¹⁵

A particularly important and historic development in terms of the legal

110. *Constitution of WHO: Principles*, WHO, <http://www.who.int/about/mission/en/> [<http://perma.cc/557L-58KW>] (last visited Feb. 16, 2018).

111. WHO, *Basic Documents: Constitution of the World Health Organization*, 48 WHO 7 (2014), <http://apps.who.int/gb/bd/PDF/bd48/basic-documents-48th-edition-en.pdf#page=7> [<https://perma.cc/7CCN-75HS>].

112. *Id.* at 8.

113. WHO, ABOUT WHO: WHO PEOPLE AND OFFICES, <http://www.who.int/about/structure/en/> [<https://perma.cc/L9NX-N5AZ>] (last visited Feb. 16, 2018).

114. WHO, 2015 WHO STRATEGIC RESPONSE PLAN: WEST AFRICA EBOLA OUTBREAK 5 (WHO 2015), http://apps.who.int/iris/bitstream/10665/163360/1/9789241508698_eng.pdf?ua=1&ua=1 [<https://perma.cc/3QB8-ZXM9>].

115. *Id.*

framework for the regulation of public health emergencies that emerged during the most recent Ebola outbreak must again be emphasized here. After the U.N. Security Council unanimously adopted resolution 2177 on 18 September 2014—“determining that the unprecedented extent of the Ebola outbreak in Africa constitutes a threat to international peace and security”¹¹⁶—the first ever U.N. emergency health mission, the UNMEER, was established.¹¹⁷ UNMEER was established as a temporary measure to meet immediate needs with regard to the Ebola outbreak and assumed a coordinating function for U.N. entities that operate in the outbreak area. The UNMEER strategy was based on three pillars of action: immediate outbreak response, enhanced coordination and collaboration, and the mobilization of increased human and financial resources.¹¹⁸ In areas with intensive transmission, a “STEPP” approach was applied: (1) stop the outbreak; (2) treat the infected; (3) ensure essential services; (4) preserve stability; and (5) prevent further outbreaks.¹¹⁹ This was supplemented with further targets and timelines and given its contemporaneous establishment, UNMEER basically had to define itself and its approach in the midst of the full-blown emergency.¹²⁰

Much more can be said about the coordination bodies and mechanisms that inhabit the top echelons of our international society on matters relating to health, and, for the purpose of this paper, public health emergencies. Indeed, some aspects of the international legal framework for public health emergencies will again be considered in Part IV below, for now, the remainder of the discussion in Part III will rather focus on The International Health Regulations (2005); the most important and only existing international legal instrument for the management and coordination of large-scale public health emergencies.¹²¹

B. The International Health Regulations (IHR 2005)

Article 21 of the Constitution of the WHO empowers the World Health Assembly—the highest decision-making body of the WHO—to adopt regulations on matters including those related to “sanitary and quarantine requirements and other procedures designed to prevent the international spread of disease.”¹²²

116. S.C. Res 2177 (Sept. 18, 2014). See *Resolution 2177 (2014): Adopted by the Security Council at its 7268th meeting on 18 September 2014* at 1, U.N. SECURITY COUNCIL (2014), http://www.un.org/en/ga/search/view_doc.asp?symbol=S/RES/2177%20 [<https://perma.cc/43DP-QMCF>]. For the WHO’s response to the adoption of the resolution, see *WHO welcomes decision to establish United Nations Mission for Ebola Emergency Response*, WHO MEDIA CTR. (Sept. 19, 2014), <http://www.who.int/mediacentre/news/releases/2014/ebola-emergency-response/en/> [<https://perma.cc/WL4N-X8HA>].

117. See generally Burci & Quirin, *supra* note 6.

118. DuBois et al., *supra* note 17, at 25.

119. *Id.*

120. *Id.* at 27.

121. *Id.* at 28.

122. *Basic Documents: Constitution of the World Health Organization*, WHO 7 (2006),

Article 22 of the Constitution furthermore provides that such regulations will be binding on all WHO member states unless they advise the Director-General of their rejection or reservation.¹²³ Pursuant to these provisions, a series of the International Sanitary Conventions adopted in the second half of the Nineteenth Century, and which was later consolidated into the 1951 International Sanitary Regulations¹²⁴ was renamed as the International Health Regulations (“IHR”) in 1969 and was the first—and only—binding international legal instrument on global disease surveillance and control.¹²⁵

The IHR (1969) was limited in scope and only dealt with specific diseases, namely, the plague, cholera and yellow fever.¹²⁶ The Regulations to the IHR (1969) set out measures to be taken by the member states to prevent the spread of disease, and it also prescribed minimum standards for sanitation and public health facilities at air and sea ports.¹²⁷ Provisions were also made for prescribed mandatory and permitted health measures as well as maximum measures that must be applied during times of an epidemic. For example, Part IV of the IHR (1969) contained provisions on the restrictions to be imposed on inbound and outbound international travel or movement of goods, and Article 23 provided for, *inter alia*, the application and/or prohibition of certain measures under specific circumstances.¹²⁸

While this first version of an internationally agreed-upon and binding legal instrument for global disease surveillance and control was indeed a significant development in global health at the time, it also proved to be wholly inadequate and unsatisfactory. The most obvious shortcoming was the limited scope of the IHR (1969) and its regulations. The HIV/AIDS pandemic, the SARS epidemic, and the threat of an influenza pandemic, for example, fell outside the scope and operation of the IHR (1969).¹²⁹ States’ compliance with the IHR (1969) were poor; given that the WHO is dependent on notifications and information by States in order for it to fulfill its technical, normative and operational functions, the non-compliance of States rendered it effectively useless.¹³⁰ But while member States were in agreement that the IHR (1969) had to be revised, the discussion and the consultation processes were protracted—similar to the Sanitary Conventions discussed in the preceding sections—and it was only after the SARS epidemic in 2003 and the growing fears of avian influenza and a possible large-scale influenza

http://www.who.int/governance/eb/who_constitution_en.pdf [<https://perma.cc/SUD2-U7GF>].

123. *Id.* See also Barbara von Tigerstrom, *The Revised International Health Regulations and Restraint of National Health Measures*, 13 HEALTH L.J. 35, 36 (2005).

124. See *infra* Section II section for a discussion on the Sanitary Conventions.

125. Von Tigerstrom, *supra* note 123, at 36.

126. *International Health Regulations 1969*, WHO GENEVA (1983), <http://www.who.int/csr/ihr/ihr1969.pdf> [<https://perma.cc/GSQ3-SA8A>].

127. *Id.* at 14-16.

128. Von Tigerstrom, *supra* note 123, at 36-37.

129. *Id.* at 37.

130. *Id.*

pandemic that the provisions of IHR (2005) were ultimately agreed upon.¹³¹

Thus, while the most recent Ebola outbreak brought us the “historic” pronouncement by the U.N. Security Council and the establishment of UNMEER (although only temporarily), the 2003 SARS outbreak was the catalyst for the revised International Health Regulations (2005) (“IHR (2005)”) that is currently in place and that is described as “one of the most radical and far-reaching changes to international law on public health since the beginning of international health co-operation in the mid-nineteenth century.”¹³² As was indicated in Part II above, the SARS 2003 outbreak was indeed not one of the most severe epidemics that the world has ever had to face, but it is generally regarded as the “first severe and readily transmissible new disease to emerge in the twenty-first century” and it placed under the spotlight the potentially catastrophic reality of infectious disease in a globalized world.¹³³

After consultations and submissions by member States, the IHR (2005) was adopted in May 2005 and came into force in June 2007. The IHR (2005), as we know it today, constitutes a thorough revision of the previous regulations pertaining to disease control adopted by the World Health Assembly under Article 21 of the WHO Constitution since 1951, and is a legally-binding instrument that 196 countries have since agreed to and signed.¹³⁴ Interesting similarities and differences between the IHR (1969) and the IHR (2005) exist. The stated objective of the revised IHR (2005) is, for example, similar to that of the IHR (1969) and is articulated in Article 2; the IHR (2005) is geared towards the prevention, protection against, control and the providing for a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade.¹³⁵

Numerous important differences between the IHR (1969) and the IHR (2005), however, can also be observed. For example, the scope of the IHR (1969) was limited to only three diseases, but the scope of the IHR (2005) is centered on notions of “events” or on a “public health emergency of international concern” which not only applies to the spread of natural diseases, but also to the accidental or intentional release of biological, chemical, or radiological agents if it could lead to the international spread of disease and irrespective of origin or source.¹³⁶ The range and nature of disease events covered under the IHR (2005) are

131. *Id.* at 38.

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

133. Von Tigerstrom, *supra* note 123, at 38.

134. See generally Burci & Quirin, *supra* note 6; Fidler, *supra* note 132.

135. *WHA58.3 Revision of the International Health Regulations*, WORLD HEALTH ASSEMBLY (2005), http://www.who.int/ipcs/publications/wha/ihr_resolution.pdf. [<https://perma.cc/BLQ6-9CQ4>]; *International Health Regulations, Second Edition*, WHO, (2008) <http://www.who.int/ihr/publications/9789241596664/en/> [<https://perma.cc/2PJZ-BEDW>].

136. Burci & Quirin, *supra* note 6.

therefore much broader in scope. Member States are required to notify the WHO of all events that may constitute a PHEIC based on the decision instrument set out in Annex 2 of the IHR (2005).¹³⁷ Annex 2 presents an algorithm of a series of questions and when an affirmative answer exists on any two of these questions the Member State must notify the WHO.¹³⁸ The Annex also contains a lists of diseases to which the algorithm must always be applied, as it is either presumed that these diseases are always potentially of international concern or it is presumed that the occurrence of these diseases is both unusual or unexpected and serious, and should therefore be classified as a PHEIC.¹³⁹ Viral haemorrhagic fever—a disease under which Ebola can be classified and which was discussed in Part II—is one of the diseases listed in Annex 2 of the IHR (2005).

The authority to determine whether an event constitutes a PHEIC is vested in the Director-General of the WHO, in terms of article 12 of the IHR (2005), and in consultation with the reporting state as well as the recommendation and advice of an “Emergency Committee” of public health experts.¹⁴⁰ Upon declaring a PHEIC the Director-General can issue temporary recommendations of urgent measures to prevent or control the international spread of disease. These temporary recommendations are not binding but present authoritative guidance and enhance accountability by requiring States who do not adhere, to justify their actions.¹⁴¹

Key in the IHR (2005) is the translation of the global ethos for health put forward by the WHO, in terms of the national public health capacities of member States. While the IHR (1969) merely contained a limited set of prescriptions for organization, equipment, facilities, and services required at national ports and airports (Part III of the IHR (1969)), the IHR (2005) also requires of its signatory-states to take a number of measures to prevent, respond, and to control the spread of disease and to implement these obligations within its domestic legal and public health systems. It is particularly important that the IHR obligations are incorporated and implemented in national legal and public health systems as it not only gives effect to the objectives of the IHR, but also provides the much needed “framework (or backbone) for a range of public health activities and specific operational functions.”¹⁴² The core capacities or minimum set of standards for

137. WORLD HEALTH ASSEMBLY, *supra* note 135; *International Health Regulations, Second Edition*, *supra* note 135.

138. WORLD HEALTH ASSEMBLY, *supra* note 135; *International Health Regulations, Second Edition*, *supra* note 135. Where member States are faced with a potential health situation of international concern it must first ask whether the public health impact of the event is serious. Second, whether the event is unusual or unexpected, third whether there is a significant risk of international spread and finally whether there is a significant risk of international travel or trade restrictions.

139. WORLD HEALTH ASSEMBLY, *supra* note 135; *International Health Regulations, Second Edition*, *supra* note 135; *see* Von Tigerstrom, *supra* note 123, at 39.

140. Burci & Quirin, *supra* note 6.

141. *Id.*

142. Ana Ayala & Tanya Baytor, *Ebola: The Global Health Tragedy Of Our Times And How*

public health surveillance and response that signatory states must incorporate and implement in their national systems include the following:

- establishing a specific mechanism to enable timely notification to the WHO of public health risks that could potentially become an international public health emergency;
- making sure that national legislation and policy allow for the implementation of the IHR;
- ensuring that funding is available for carrying out all necessary activities;
- developing proper surveillance systems and response plans;
- establishing laboratory services; and
- having the necessary human resources for carrying out activities.¹⁴³

Whether States have implemented, and how States have fared in meeting their obligations in terms of the development of their national public health capacities in terms of the IHR (2005) is an important consideration, especially in light of the contributory nature of the inadequate national health systems of Guinea, Liberia and Sierra Leone during the most recent Ebola outbreak.

It was evident from the discussion in Part III above that the lack of consensus on the biomedical causes of epidemic diseases initially proved an insuperable barrier to international agreement. This is certainly no longer the case today. The IHR (1969), in turn, was limited in scope and completely irrelevant to the 2003 SARS outbreak, yet the response to SARS is generally considered to be a success story for both the WHO and the international community at large. However, while the IHR (2005) is described as “unprecedented in the history of the relationship between international law and public health,” and was fully operational during the most recent Ebola outbreak, the international response and coordination was found to be wholly inadequate and lacking.¹⁴⁴

IV. NATIONAL LEGAL RESPONSES TO PUBLIC HEALTH EMERGENCIES

There are, of course, many factors that exist locally, at the heart of an epidemic, that contribute directly to the spread (and curb) of infectious diseases and other public health emergencies. Some of these factors are related to political regimes and histories, governance, health financing and health systems, or to the availability of essential medicines, supplies and delivery services. Yet others relate to human resources, education, and specific social and cultural features of

Law Is Essential In Preventing Public Health Catastrophes, O'NEILL INST. FOR NAT'L & GLOBAL HEALTH (Apr. 9, 2014), http://www.oneillinstituteblog.org/ebola-global-health-tragedy-times-law-essential-preventing-public-health-catastrophes/?utm_content=bufferdac26&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer [https://perma.cc/3ADM-YRGM].

143. *Id.*

144. David Fidler & Lawrence O. Gostin, *The New International Health Regulations: An Historic Development for International Law and Public Health*, 34:1 J. L., MED. & ETHICS 93 (2006).

the affected societies. There are also numerous challenges that can obstruct public health interventions in the face of an epidemic, including “fear of stigmatization in the community, delays in seeking treatment, inadequate triage in HCFs, lack of recognition of Ebola cases, and incomplete identification and follow-up of some contacts.”¹⁴⁵ Moreover, the following motivations for denying Ebola symptoms and resisting treatment during the most recent outbreak included stigma, fear, mistrust, and low medical literacy.¹⁴⁶

While much scholarly research has since been devoted to these and other contributory factors, the contribution of this particular section of the article will be limited to an evaluation of the national legal responses to public health emergencies, and particularly the use of quarantine measures and bylaws as instruments of behavioural change. It will be shown in this section that these national legal responses to public health emergencies are not always properly informed and tailored to meet the needs and circumstances of the communities they are intended to serve, nor are they necessarily warranted in terms of biomedical evidence. National legal responses to public health emergencies are rather often informed by fear and based on distrust, the effects of which move across time, space, and boundaries within and between international and national actors, communities, and individuals.¹⁴⁷ It will be evident from the discussion below that actors often leverage scientific uncertainty according to their political interests.¹⁴⁸

A. Bylaws as Instruments of Behavioral Change

In trying to curb the further spread of EVD in Sierra Leone,¹⁴⁹ the remote areas of Kailahun, Kenema, and Koinadugu adopted the central government’s emergency state laws, which were declared on 31 July 2014 and extended twice in combination with district/chiefdom bylaws.¹⁵⁰ These bylaws aimed to bring about behavioural change by limiting public movement and association, and by

145. Nyenswah Tolbert et al., *Controlling the last known cluster of Ebola Virus Disease – Liberia, January-February 2015*, CTRS. FOR DISEASE CONTROL & PREVENTION, https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6418a5.htm?s_cid=mm6418a5_w [<https://perma.cc/U9G4-T4Z9>].

146. *Id.*

147. DuBois et al., *supra* note 17, at 31.

148. Jonathan E. Suk, *Sound Science and the New International Health Regulations*, 1:2 GLOBAL HEALTH GOVERNANCE 1 (2007).

149. Nathaniel King, Home-grown Good Practice Responses to Ebola in Sierra Leone, (Oct. 22, 2014) (unpublished research report). *For a summary*, see <http://www.ebola-anthropology.net/wp-content/uploads/2014/11/Homegrown-Responses-to-Ebola-Sierra-Leone-29-October-2014.pdf> [<https://perma.cc/YMD9-L8VX>].

150. *Id.* at 9. *See generally* PAUL RICHARDS ET AL., VILLAGE RESPONSES TO EBOLA VIRUS DISEASE IN RURAL CENTRAL SIERRA LEONE, NJALA U. (Jan. 12, 2015), <https://lists.capalon.com/pipermail/ebola-anthropology-initiative/attachments/20150121/c7ae55ff/attachment.pdf> [<https://perma.cc/V3VS-NTKN>].

prohibiting certain customary and informal practices of local peoples in caring for the sick and dying. Examples of the sanctions imposed on breaching these bylaws included the following: A person could incur a fine of up to 200,000Le for tending a sick person in their home or a fine of 500,00Le for washing the body of a deceased person.¹⁵¹ It was submitted that “the risk of [such] immediate and locally enforced penalties” proved to be effective “even when the threat of severe health consequences for the behavior is not.”¹⁵² Yet, it has been observed that these bylaws had more force as a deterrent than as punitive instruments.¹⁵³

Generally speaking and for the remote areas of Sierra Leone specifically, these bylaws proved to be effective to a certain extent in forging behavioural change. Its success was ascribed to the following factors: The residents of these areas are accustomed to the passage of informal bylaws by Chiefs, and “the psychological frame and infrastructure” of enforcement and the collection of fines already existed before the bylaws came into existence.¹⁵⁴ The District Councils, local councilors, and Paramount Chiefs of these districts also collaborated, adopted each other’s best practices, and crafted and implemented the bylaws as a united and legitimate source.¹⁵⁵ The remoteness of these three areas from the capital Freetown and the reach of central government actors are not only in terms of geography and distance; there is also an emotional distance. Many residents in especially the Kailahun and Koinadugu districts “do not feel the presence of the state in their collective and individual lives.”¹⁵⁶ The State’s legal influence is therefore weakest in these areas, making the role and authority of chiefs and local councils officials all the more important.¹⁵⁷ The situation in Kenema and Kailahun was, for example, described in terms of a “siege mentality... [where] the chiefs and the local councils officials performed their way into the collective consciousness of the people in their communities. It was as if the people obeyed the bylaws because they (the bylaws) were creations of the community compatriots who, like them, were helping to fight this disease.”¹⁵⁸

What is interesting, however, is that insofar as these bylaws related to changing customary burial practices, effecting behavioural change proved to be more difficult. In fact, it is estimated that up to one half of Ebola related deaths

151. King, *supra* note 149, at ii.

152. *Id.*

153. *Id.* at 5.

154. *Id.* at ii, 4.

155. *Id.* at 10.

156. *Id.* at 5 (noting that a similar distrust in the government and a strong sense of community belonging also exists in certain rural areas of Liberia). See generally Melissa Minor Peters, *Community perceptions of Ebola response efforts in Liberia: Montserrado and Nimba Counties*, OXFAM GB (Dec. 18, 2014), <https://lists.capalon.com/pipermail/ebola-anthropology-initiative/attachments/20150121/c7ae55ff/attachment-0001.pdf> [<https://perma.cc/EG3X-ETC3>].

157. King, *supra* note 149, at 5.

158. *Id.* at 5, 9-10.

in Sierra Leone were caused by unsafe burial practices.¹⁵⁹ In an assessment of burial practices, cemetery management, and adherences to practices recommended to reduce the risk for Ebola virus transmission, the CDC in collaboration with the Sierra Leone Ministry of Health and Sanitation (“MOH”) found, inter alia, that the recommended “safe” burial practices were not well accepted by communities.¹⁶⁰ Community and family members were concerned about the deceased being buried in unmarked graves or with multiple bodies in the same grave. Such practices were considered “undignified and unacceptable to the community.”¹⁶¹ Interviews with community and family members also revealed that many people continued to deny that Ebola was real and were not aware of the risk for Ebola transmission from contact with an infectious dead body.¹⁶²

With regard to Chinese burial customs in Hong Kong specifically, it can be noted that the veneration of family ancestors is, similar to many African cultures, also important.¹⁶³ However, contrary to the situation in the rural African communities described above, the congested landscape of Hong Kong and the relatively high fees for burial in a private as opposed to a public cemetery, as well as the legally sanctioned and compulsory exhumation of remains buried in public cemeteries after a period of six years, has considerably influenced traditional burial rites.¹⁶⁴ While the support and authority of chieftom leaders and community elders was important in convincing community members of the necessity of deviating from customary practices during the Ebola outbreak in

159. Mark A. Rothstein, *From SARS to EBOLA: Legal and Ethical Considerations for Modern Quarantine*, 12(1) IND. HEALTH L. REV. 227, 253 (2015).

160. Carrie F. Nielsen et al., *Improving Burial Practices and Cemetery Management During an Ebola Virus Disease Epidemic—Sierra Leone, 2014*, CTRS. FOR DISEASE CONTROL & PREVENTION, https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6401a6.htm?s_cid=mm6401a6_w [<https://perma.cc/TPS3-W7JQ>].

161. *Id.*

162. *Id.* See generally *Briefings and Guides: Management of the Dead*, EBOLA RESPONSE ANTHROPOLOGY PLATFORM (last visited Feb. 26, 2018), http://www.ebola-anthropology.net/theme/management-of-the-dead/?post_type=key_messages [<https://perma.cc/FJ3B-HS7V>] (describing detailed anthropological narratives on culture and burial practices in the most recent Ebola outbreak).

163. B.D. Wilson, *Chinese Burial Customs in Hong Kong*, 1 J. ROYAL ASIATIC SOC’Y H.K. BRANCH 115 (1961), <https://jstor.org/stable/23881299> [<https://perma.cc/2QLF-BQ5Q>]; see also Choi-King Katie Ching et al., *Culture and Land Use: A Study of Burial Policy in Hong Kong*, U. H.K. (1986), <https://hub.hku.hk/R44qN11U9S/eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1IjoiNWJiMWQ1YjEiLCJlbWVpbCI6Ijc5OTVmNDg2MWU1OGMwYmFOTcyNjg4MGM2MGM3YiIsImhhbmRsZSI6IjEwNzIyLzI2MDY1Iiwic2VxIjoiMSIsImhhdCI6MTUxODc1MTI5NSwiZXhwIjoxNTE4ODM3Njk1fQ.MYqQTkP-I7M3OM7ER4hsuocL1kD3qxSxyAQu9jQXI/FullText.pdf> [<https://perma.cc/QEA8-FHCU>].

164. See generally Wilson, *supra* note 163; H.K. FOOD & ENVTL. HYGIENE DEP’T, A GUIDE TO AFTER DEATH ARRANGEMENTS (2017), http://www.fehd.gov.hk/english/cc/die_todo_e.pdf [<https://perma.cc/R53P-2WQ8>].

Africa, similar concerns were not as prevalent in Hong Kong during the SARS outbreak. Not only is the epidemiology of these two infectious diseases obviously different, but in Hong Kong, people usually die in hospitals or other care facilities and their remains are removed and taken care of by the assigned public health services or a funeral parlour.¹⁶⁵ Thus, a National Standard Operating Procedure (“SOP”) that takes into account specific customary needs and cultural rituals, and includes—for as far as possible—community and family members in the burial process, was not as significant for Hong Kong during the SARS outbreak as it was in rural Africa with the most recent Ebola outbreak.¹⁶⁶ Yet, each geographical territory may offer unique challenges and/or considerations when it comes to the outbreak and control of infectious diseases. In Hong Kong, for example, the remains of the deceased who had died from a particularly infectious disease and whose remains may still pose some risk upon exhumation can, under certain circumstances, prove pivotal.

Sylvanus Spencer therefore warns that the mere “translation” of biomedical and legal measures into local idioms to effect behavioural change in efforts to control disease outbreaks may not be enough. He submits that a full understanding of “the heterogeneity of social factors and the multiplicity of actors inserting agency in the translation” of intervention measures is ultimately necessary.¹⁶⁷ Noteworthy in this regard is that the interdependent self-concepts so characteristic of traditional African (and also Asian) cultures may have contributed to the relative success of bylaws in effecting behavioural change in the context of the recent Ebola outbreak. Yet, such an interdependent self-concept that emphasises group goals and the appreciation of communalities with others, stands in stark contrast to the independent self-concepts usually associated with Western cultures which places more emphasis on personal goals and recognition of one’s differences from other people.¹⁶⁸ Thus, whether the enforcement of State emergency regulations as well as the enactment and abidance of more informal regulatory measures by local authoritative figures would be equally effective in effecting behavioural change in the face of a public health emergency in a typical Western cultural context, is indeed questionable.

V. TO QUARANTINE OR NOT TO QUARANTINE: A LEGAL OR PUBLIC HEALTH QUESTION?

The first known incidence of a medical quarantine—in terms of which people

165. See Wilson, *supra* note 163, at 116.

166. See generally Nielsen et al., *supra* note 160.

167. Sylvanus N. Spencer, “*Invisible enemy*”: *Translating Ebola Prevention and Control Measures in Sierra Leone* 2 (DFG Priority Programme, Working Paper No. 13 2015), http://www.spp1448.de/fileadmin/media/galleries/SPP_Administration/Working_Paper_Series/SPP1448_WP13_Spencer_upd.pdf [<https://perma.cc/3PHC-K2QM>].

168. Cecilia Cheng & Aik-Kwang Ng, *Psychosocial Factors Predicting SARS-Preventive Behaviours in Four Major SARS-Effectuated Regions*, 36 J. APPLIED PSYCHOL. 222, 225 (2006).

or goods were restrained in their movement because of the risk of contagious disease—was in 539 A.D., when the Byzantine emperor Justinian enacted a law to isolate individuals coming from plague-infested regions from entering his lands.¹⁶⁹ This mandatory separation of persons, animals, or goods that may have been exposed to contagious disease has been the cornerstone of coordinated disease-control strategies since the fourteenth century, during the plague epidemic of 1347-1352.¹⁷⁰ In fact, the word “quarantine” is derived from the Italian term “quaranta” which means forty; the number of days which ships, during the Black Death plague epidemic of the Seventeenth Century had to stay at sea before passengers could disembark.¹⁷¹ Since the late Nineteenth Century, many have believed that the battle against infectious diseases has largely been won in light of medical advances and the availability of vaccines and antibiotics.¹⁷² Quarantine is therefore often described as “a relic of the past, useless, and damaging to commerce.”¹⁷³ However, to date, the centuries-old strategy of quarantine remains an important component of the public health response to emerging and re-emerging infectious diseases,¹⁷⁴ as well as potential acts of biological terrorism.¹⁷⁵ The Siracusa Principles make specific provision, for example, for the limitation of rights in situations of public emergency, and particularly on grounds of public health “in order to allow a state to take measures dealing with a serious threat to the health of the population or individual members of the population. These measures must be specifically aimed at preventing disease or injury or providing care for the sick and injured.”¹⁷⁶ The political, economic, social, and ethical

169. Vidya Eswaran, *Quarantine: Ethical and Legal Battle for Human Rights during Public Health Emergencies*, EMERGENCY PUB. HEALTH (Oct. 31, 2014), <http://emergencypublichealth.net/2014/10/31/quarantine/> [https://perma.cc/GV2T-Z62F]. For a brief history of quarantine, see Rothstein, *supra* note 153.

170. Tognotti, *supra* note 83, at 254.

171. It is unclear why the quarantine period was set for forty days exactly. See M.D. Grmek, *The Concept of Infection in Antiquity and the Middle Ages, the Old Social Measures Against Contagious Diseases and the Foundation of the First Quarantine in Dubrovnik (1377f) [in French]*, 348 RAD JUGOSLAVENSKE AKADEMIJE 9-55 (1980); DOROTHY PORTER, HEALTH, CIVILIZATION AND THE STATE: A HISTORY OF PUBLIC HEALTH FROM ANCIENT TO MODERN TIMES (London: Routledge 1999); CIPOLLA, *supra* note 98.

172. Ursula Schlipkötter & Antoine Flahault, *Communicable Diseases: Achievements and Challenges for Public Health*, 32:1 PUB. HEALTH REVS. 90-119 (2010).

173. Tognotti, *supra* note 83, at 256.

174. An example of a re-emerging infectious disease is tuberculosis. See David M. Morens et al., *The Challenge of Emerging and Re-Emerging Infectious Diseases*, 430 NATURE 242, 245 (2004).

175. Tognotti, *supra* note 83, at 254.

176. Comm. on Human Rights, U.N. Siracusa Principles on the Limitation and Derogation Provisions in the International Covenant on Civil and Political Rights, E/CN.4/1985/4, at 4 (Sept. 28, 1984). It is also emphasized in the Siracusa Principles that where rights are limited on the ground of public health, that that due regard also be had to the international health regulations of the WHO.

concerns that have been raised with regard to quarantine in terms of the Ebola and SARS epidemics will briefly be considered here, for as far as it is relevant to the argument presented in this article.

The CDC defines quarantine as the separation of an individual or group reasonably believed to have been exposed to a quarantinable communicable disease¹⁷⁷ but who is not yet ill (not presenting signs or symptoms), from others who have not been so exposed, in order to prevent the possible spread of the quarantinable communicable disease.¹⁷⁸ Isolation, on the other hand, refers to the separation of an individual or group who is reasonably believed to already be infected with a quarantinable communicable disease from those who are not infected, in order to prevent the spread of the particular disease.¹⁷⁹ While both quarantine and isolation have at aim to prevent the spread of a quarantinable communicable disease, quarantine applies to individuals or groups who are reasonably believed to have been *exposed* to a quarantinable communicable disease, and isolation applies to individuals or groups who are reasonably believed to have already been *infected* with such a disease. Controlled movement, in contrast, only limits the movement of people, animals or goods with regard to long distance commercial conveyances (e.g. aircraft, ship, bus or train) and/or other public transportation (e.g. bus or subway).¹⁸⁰

With the most recent Ebola outbreak, the governments of Guinea, Liberia and Sierra Leone imposed quarantines on individual houses, neighbourhoods, villages and even entire administrative districts.¹⁸¹ On 30 July 2014, Liberian President Johnson Sirleaf announced several emergency measures, including quarantines, and ultimately declared a state of emergency on 6 August 2014, citing the need “for extraordinary measures for the very survival of our state.”¹⁸² Liberian

177. In the U.S., the following communicable diseases are subject to federal authorization for isolation and quarantine: cholera, Diphtheria, infectious tuberculosis, plague, smallpox, yellow fever, viral hemorrhagic fevers, severe acute respiratory syndromes, and flu that can cause a pandemic. See *Legal Authorities for Isolation and Quarantine*, CTRS. FOR DISEASE CONTROL & PREVENTION (Oct. 8, 2014), <http://www.cdc.gov/quarantine/aboutlawsregulationsquarantineisolation.html> [<https://perma.cc/8HEW-YFM4>].

178. *Interim U.S. Guidance for Monitoring and Movement of Persons with Potential Ebola Virus Exposure*, CTRS. FOR DISEASE CONTROL & PREVENTION 3 (Nov. 3, 2014), https://www.mainequalitycounts.org/image_upload/Interim_Guidance_CDC_10-27-14.pdf [<https://perma.cc/FP2Y-2AKF>] [hereinafter CDC].

179. *Id.*; see also Gene W. Matthews et al., *Legal Authorities for Interventions in Public Health Emergencies*, in *LAW IN PUBLIC HEALTH PRACTICE* 272 (Richard A. Goodman et al. eds., 2d ed. 2007).

180. CDC, *supra* note 178; see also Martin Cetron & Julius Landwirth, *Public Health and Ethical Considerations in Planning for Quarantine*, 78 *YALE J. BIOLOGY & MED.* 325 (2005).

181. *West Africa: Respect rights in Ebola response*, HUMAN RIGHTS WATCH (Sept. 15, 2014), <http://www.hrw.org/news/2014/09/15/west-africa-respect-rights-ebola-response> [<https://perma.cc/GF8B-3EK4>].

182. *Id.*

security forces were tasked to enforce these security measures.¹⁸³ On 20 August 2014, curfews were extended and the West Point slums in Monrovia were completely sealed off, leading to violent clashes between security forces and residents of the West Point areas.¹⁸⁴ Live ammunition was used and dozens were injured and one killed.¹⁸⁵ On 30 July 2014 and again on 7 August 2014, President Koroma from Sierra Leone announced a state of emergency in terms of Section 29(5) of the Constitution (1991) and ordered quarantines at all the epicenters of the disease.¹⁸⁶ These quarantines were to be enforced by police and the military.¹⁸⁷ Other measures included the restriction of public meetings and gatherings not related to Ebola sensitization and surveillance and house-to-house searches to trace and quarantine Ebola victims.¹⁸⁸ This was followed by a three-day shut down on 19 September 2014, during which time pedestrians and vehicles were barred from the country's streets and authorities searched for any Ebola cases or deceased. They ultimately discovered 100 bodies and 200 patients, but various humanitarian actors questioned the methods used by security forces to enforce the quarantines.¹⁸⁹ By 25 September 2014, an estimated third of the country's population was under quarantine and, with over one million people in quarantine, food shortages due to lack of labour, trade and commodities continued to escalate throughout December 2014.¹⁹⁰ On 13 August, President Condé from Guinea also declared a public health emergency under the Public Health Code Law 97 of 19 June 1997 and established quarantine areas enforced by health workers and security forces.¹⁹¹ In light of this, neighbouring African countries like Cote d'Ivoire and Senegal also imposed restrictions on the movement of people and goods, including border closures during this time.¹⁹²

The impact of these quarantines in West Africa has been extensive. Quarantine measures do not only restrict people's rights to liberty and freedom of movement, but also impact on their livelihood, contributing to food insecurity,

183. *Id.*

184. THE ASSESSMENT CAPACITIES PROJECT, EBOLA OUTBREAK IN WEST AFRICA: LESSONS LEARNED FROM QUARANTINE—SIERRA LEONE AND LIBERIA 5 (Mar. 19, 2015) [hereinafter ACAPS].

185. *Id.* Ibrahim Al-Bakri Nyei, *Beyond the Disease: How the Ebola Epidemic Affected the Politics and Stability of the Mano River Basin*, ACCORD—AFRICAN CENTRE FOR THE CONSTITUTIVE RESOLUTION OF DISPUTES (Aug. 16, 2016), <http://www.accord.org.za/conflict-trends/beyond-the-disease/> [<https://perma.cc/AT53-5R7K>] (last visited 29 March 2018).

186. HUMAN RIGHTS WATCH, *supra* note 181.

187. *Id.*

188. *Id.*

189. ACAPS, *supra* note 184, at 1.

190. *Id.*; see also Rothstein, *supra* note 159, at 252-54.

191. HUMAN RIGHTS WATCH, *supra* note 181.

192. Amadou Sy & Amy Copley, *Africa in Focus: Understanding the Economic Effects of the 2014 Ebola Outbreak in West Africa*, BROOKINGS (Oct. 1, 2014), <http://www.brookings.edu/blogs/africa-in-focus/posts/2014/10/01-ebola-outbreak-west-africa-sy-copley> [<https://perma.cc/3QA9-WV3Y>].

loss of employment, and access to health care.¹⁹³ An Oxfam protection assessment involving 800 respondents, including community and religious leaders, also indicated that quarantine measures contributed greatly to the stigma and shame of the disease.¹⁹⁴ And, most of these quarantine strategies were not based on scientific evidence, but were arbitrarily applied, and overly broad in implementation.¹⁹⁵ The quarantines were not adequately monitored, “making them ineffective from a public health perspective and disproportionately impacting people unable to evade the restrictions, including the elderly, the poor, and people with chronic illness or disability.”¹⁹⁶ While it is evident from the exposition in Part II of this article, that the *isolation* of those infected with a quarantinable communicable disease like Ebola is pivotal to the public health strategy in curing the spread of contagion, the question about the legality of certain quarantine measures has raised concern and came under specific scrutiny when panic about a possible global spread of Ebola took hold.

On 8 October 2014, Thomas Eric Duncan, a Liberian visitor to the U.S., died from Ebola in a Dallas hospital.¹⁹⁷ When it later became known that he had infected two of the nurses who had cared for him, anxiety about the possible global spread of the West African Ebola ensued.¹⁹⁸ A mere two weeks later, Craig Spencer, a medical doctor who had worked with Doctors without Borders in Guinea, was taken to the New York Bellevue Hospital Centre after reporting fever.¹⁹⁹ He tested positive for the virus shortly after.²⁰⁰ The panic of “a virus on

193. HUMAN RIGHTS WATCH, *supra* note 181.

194. ACAPS, *supra* note 184.

195. HUMAN RIGHTS WATCH, *supra* note 181.

196. ACAPS, *supra* note 184.

197. Greg Botelho & Jacque Wilson, *Thomas Eric Duncan: First Ebola death in U.S.*, CNN (Oct. 8, 2014, 3:19 PM EST), <https://www.cnn.com/2014/10/08/health/thomas-eric-duncan-ebola/index.html> [<https://perma.cc/FU3F-6HW9>].

198. Today, it is generally accepted that the Dallas hospital was completely unprepared for dealing with an Ebola infection and that the necessary precautionary measures had not been in place, nor were staff issued with adequate protective garb; both nurses survived the infection. See Doyle McManus, *America's epidemic of fear over Ebola*, L.A. TIMES (Oct. 28, 2014), <http://www.latimes.com/opinion/op-ed/la-oe-mcmanus-column-ebola-politics-20141029-column.html> [<https://perma.cc/6GZ9-VKYY>]; Chico Harlan, *An epidemic of fear and anxiety hits Americans amid Ebola outbreak*, WASH. POST (Oct. 15, 2014), https://www.washingtonpost.com/business/economy/an-epidemic-of-fear-and-anxiety-hits-americans-amid-ebola-outbreak/2014/10/15/0760fb96-54a8-11e4-ba4b-f6333e2c0453_story.html?utm_term=.985efc807b80 [<https://perma.cc/Z4NZ-W8UV>].

199. Jonathan Cohn, *The First Case of Ebola Has Been Diagnosed in New York. Here's What We Know.*, THE NEW REPUBLIC (Oct. 23, 2014), <https://newrepublic.com/article/119971/ebola-new-york-city-craig-spencer-doctor-bowled-and-took-subway> [<https://perma.cc/E42L-G969>].

200. *Id.* Dr. Craig Spencer also survived EVD. See Anemona Hartocollis, *Doctor Who Survived Ebola Says He Was Unfairly Cast as a Hazard and a Hero*, N.Y. TIMES (Feb. 25, 2015), <https://www.nytimes.com/2015/02/26/nyregion/craig-spencer-new-york-ebola-doctor-speaks->

the loose” spread through New York as it became known that Spencer, before reporting to the hospital, had traveled around New York City, went dining, took subways and even went bowling.²⁰¹ The governors of three states—Chris Christie of New Jersey, Andrew Cuomo of New York, and Paul LePage of Maine²⁰²—fed this panic by unveiling a mandatory twenty-one day quarantine—the incubation period of the disease—for any person (including health workers) entering the said states and who may have had contact with Ebola sufferers in West Africa.²⁰³ This policy went far beyond the federal rules set out by the CDC, which required that public health authorities conduct active post-arrival monitoring²⁰⁴ of travelers from Liberia, Sierra Leone, or Guinea who arrived at one of the five airports in the U.S.²⁰⁵ A number of people were subsequently placed under quarantine in different parts of the U.S. in terms of these policies. In Dallas, for example, the close contacts of Thomas Eric Duncan were placed under quarantine and so were

out.html [<https://perma.cc/P826-MPJY>].

201. Mary Harris & Tracie Hunte, *Ebola Doc Craig Spencer Speaks Out*, WNYC (Jan. 29, 2015), <http://www.wnyc.org/story/ebola-doc-speaks-out/> [<https://perma.cc/D9CP-AV32>].

202. The governors of Illinois, Ohio, and Georgia followed suit while other states like Florida, Maryland and Virginia only required that persons returning from West African countries be monitored depending on their level of risk. See Dominic Rushe, *Isolated nurse slams Chris Christie’s Ebola quarantine policy*, THE GUARDIAN (Oct. 26, 2014), <https://www.theguardian.com/world/2014/oct/26/ebola-christie-quarantine-west-africa-monitor-symptoms-airport> [<https://perma.cc/R7G9-5E45>]; Matt Flegenheimer, Michael D. Shear & Michael Barbaro, *Under pressure, Cuomo says Ebola quarantines can be spent at home*, N.Y. TIMES (Oct. 26, 2014), <https://www.nytimes.com/2014/10/27/nyregion/ebola-quarantine.html> [<https://perma.cc/7KPW-7GGU>]; Gail Sullivan & Abby Ohlheiser, *Maine Gov. Paul LePage is seeking legal authority to enforce Ebola quarantine on nurse*, WASH. POST (Oct. 29, 2014), https://www.washingtonpost.com/news/morning-mix/wp/2014/10/29/after-fight-with-chris-christie-nurse-kaci-hickox-defies-ebola-quarantine-in-maine/?utm_term=.ee77cb99692a [<https://perma.cc/N9JS-9TSR>]; see also McManus, *supra* note 191.

203. *The dangers of quarantines: Ebola policies made in panic cause more damage*, N.Y. TIMES (Oct. 27, 2014), http://www.nytimes.com/2014/10/28/opinion/ebola-policies-made-in-panic-cause-more-damage.html?_r=0 [<https://perma.cc/9UWH-KU23>] [hereinafter N.Y. TIMES] (noting that the mandatory twenty-one day quarantine was announced by the governors on 24 October 2014).

204. CDC, *supra* note 178 (explaining that active monitoring places an obligation on the state or local public health authority to establish regular contact with potentially exposed individuals, including checking daily to assess for the presence of symptoms, including fever, rather than relying solely on the individuals to self-monitor and report on their symptoms).

205. Cetron & Landwirth, *supra* note 180, at 327 (noting that the responsibility for public health matters in the U.S. rests on both the federal and state governments. Relevant state laws, regulations and procedures vary widely and the Model State Emergency Health Powers Act is described by Cetron and Landwirth as an attempt to promote greater inter-state consistency in response to emergency public health situations. Federal powers for quarantine is delegated to the CDC who is empowered to make quarantine regulations in terms of § 361 of the Public Health Service Act, USC Title 42, Chapter 6A, Part G).

three individuals in New York who had close contact with Dr. Spencer.²⁰⁶ Similarly, Kaci Hickox, a nurse returning from Sierra Leone where she had worked for Doctors without Borders, was detained at the Newark Liberty International Airport and placed under strict quarantine in an isolation unit at the University Hospital in Newark.²⁰⁷ These state-specific quarantine measures came under a barrage of criticism from public health experts who argued that there was no public health justification for such mandatory quarantines.²⁰⁸ It was submitted that the transmission of EVD requires “bodily fluid or blood contact, mandatory quarantine of asymptomatic healthcare workers who are expected to comply with active health monitoring by public health authorities provides no substantial benefit and little, if any, theoretical benefit.”²⁰⁹ It was also argued that such an overreaction may further stigmatize the disease and those infected with it, instill fear in the public, encourage people to hide their travel history, and discourage health workers from volunteering to fight Ebola in Africa.²¹⁰

The stringent requirements with regard to the twenty-one-day mandatory quarantine period was eventually relaxed, instead requiring that people returning from West Africa be confined to their own homes for twenty-one days (the incubation period of the virus) and that they be checked twice daily by public

206. Jill Moore, *Ebola and the Law of Isolation and Quarantine in North Carolina*, COATES’ CANONS: NC LOCAL GOV’T L. (Oct. 31, 2014), <http://canons.sog.unc.edu/?p=7898> [<https://perma.cc/397M-VDXA>].

207. Dominic Rushe, *Isolated nurse slams Chris Christie’s Ebola quarantine policy*, THE GUARDIAN (Oct. 26, 2014), <https://www.theguardian.com/world/2014/oct/26/ebola-christie-quarantine-west-africa-monitor-symptoms-airport> [<https://perma.cc/73SH-KGQ3>].

208. Robert Lowes, *Experts oppose quarantine for returning Ebola care workers*, MEDCAPE MEDICAL NEWS (Oct. 27, 2014), <https://www.medscape.com/viewarticle/833919> [<https://perma.cc/9E7W-XWT4>]; Ellen Wulforst & David Morgan, *CDC says returning Ebola medical workers should not be quarantined*, REUTERS (Oct. 28, 2014), <https://www.reuters.com/article/us-health-ebola-usa-newyork/cdc-says-returning-ebola-medical-workers-should-not-be-quarantined-idUSKBN0IG12920141028> [<https://perma.cc/8V39-YWL6>]; see also COUNCIL ON ETHICAL AND JUDICIAL AFFAIRS, REPORT OF THE CEJA 1-I-05: THE USE OF QUARANTINE AND ISOLATION IN PUBLIC HEALTH INTERVENTION, PUB. HEALTH REP. (Nov. 2005), <http://www.ama-assn.org/ama/pub/about-ama/our-people/ama-councils/council-ethical-judicial-affairs/ceja-reports.page> [<https://perma.cc/8KQ7-GM77>] (noting the 2005 recommendations by the Council on Ethical and Judicial Affairs of the American Medical Association recognizing the tensions between quarantine and isolation as measures to protect public health and the individual rights to liberty and self-determination. In terms of these recommendations quarantine and isolation will only be ethically justified if based on sound scientific considerations).

209. Kenneth J. O’Dowd, *Ebola: Quarantines may complicate job of U.S. public health officials*, THE HERALD (Dec. 16, 2014), <http://ahherald.com/letters/19027-ebola-quarantines-may-complicate-job-of-u-s-public-health-officials> [<https://perma.cc/6X4Y-M4AX>].

210. John Dean, *Travel Bans and Mandatory Quarantines: Ebola Panic Calls for Clarifying the Law*, VERDICT (Oct. 31, 2014), <https://verdict.justia.com/2014/10/31/travel-bans-mandatory-quarantines> [<https://perma.cc/C34J-FR9A>]; Wulforst & Morgan, *supra* note 208.

health officials for any symptoms.²¹¹ In light of this, Hickox was transported to her home in Maine after having spent three days in an isolation tent. Hickox, however, continued to publicly defy the state imposed quarantine period.²¹² The state went to court but chief district court Judge Charles C. La Verdiere found that “[Maine] has not met its burden at this time to prove by clear and convincing evidence that limiting [Hickox’s] movements to the degree requested is necessary to protect other individuals from the dangers of infection. [Hickox] currently does not show any symptoms of Ebola and is therefore not infectious.”²¹³ Hickox never showed any symptoms of Ebola and it was reported that she intends on “suing Christie and other state officials for \$250,000, alleging false imprisonment, invasion of privacy and violation of due process, among other claims.”²¹⁴ It was the escalation of these events that ultimately led to the CDC issuing their Revised Interim U.S. Guidance for Monitoring and Movement of Persons with Ebola Virus Exposure, as well as additional guidelines recommending how people with direct exposure to Ebola patients or burials should be dealt with, to avoid further confusion of state-by-state policies.²¹⁵ These federal monitoring rules require State and local health departments to contact travelers returning from the Ebola-stricken countries in West Africa on a daily basis for twenty-one consecutive days²¹⁶ and to check for any symptoms including a high fever.²¹⁷

The above narrative on the unfolding of quarantine measures in the “ground-zero” African countries where the Ebola outbreak started, as well as in the U.S. where isolated incidences of infection were recorded, reveals a tale of swift and severe action by state officials in imposing quarantine measures driven by fear and panic, and not necessarily based on sound scientific and medical evidence. Again, keeping in mind that different infectious diseases and geographical

211. N.Y. TIMES, *supra* note 203.

212. Jessica Glenza, *Kaci Hickox defies ‘excessive’ Ebola quarantine by taking a bike ride*, THE GUARDIAN (Oct. 30, 2014), <https://www.theguardian.com/world/2014/oct/30/maine-nurse-defies-ebola-quarantine-bike-ride> [<https://perma.cc/EAL8-A25S>].

213. Jessica Glenza, *Victory for Maine nurse as judge makes U-turn on Ebola monitoring order*, THE GUARDIAN (Oct. 31, 2014), <https://www.theguardian.com/us-news/2014/oct/31/maine-nurse-ebola-guidelines-judge-lifts-order> [<https://perma.cc/3TFA-CNCU>].

214. Justin Wm. Moyer, *Kaci Hickox, rebel Ebola nurse loathed by conservatives, sues Chris Christie over quarantine*, WASH. POST (Oct. 23, 2015), https://www.washingtonpost.com/news/morning-mix/wp/2015/10/23/kaci-hickox-rebel-ebola-nurse-loathed-by-conservatives-sues-chris-christie-over-quarantine/?utm_term=.64ba697eb546 [<https://perma.cc/E3AL-CQLA>].

215. CDC, *supra* note 178 (noting that the new monitoring system came into effect on Monday 27 October in six states—New York, Pennsylvania, Maryland, Virginia, New Jersey and Georgia—and was eventually expanded across the country); *see also* N.Y. TIMES, *supra* note 203 (noting the additional guidelines provided, for example, that a person at a high risk of Ebola be strongly advised “and if necessary, even ordered by health authorities . . . to avoid traveling or congregating in public”).

216. N.Y. TIMES, *supra* note 203 (noting twenty-one days is the maximum period for symptoms to develop).

217. *Id.*

locations may call for different measures, interesting similarities and comparisons can be observed when revisiting the quarantine narratives of the three countries hardest hit by the 2003 SARS outbreak. As indicated in Part II of this article, the SARS outbreak of 2003 was unexpected and swift in its onset, spread and duration.²¹⁸ A marked difference between the Ebola outbreak and the SARS outbreak that is important to repeat here is that much scientific information and literature was already available with the Ebola outbreak of 2013, while very little was known about SARS when various incidences of infection was reported in quick succession across the globe in 2003.²¹⁹ A review of newspaper and other reports on the SARS outbreak therefore reveals a series of isolation and quarantine actions and recommendations issued by various governments and other role-players.²²⁰ The most important of these measures and recommendations will briefly be relayed here.

On 14 March 2003, only two days after the WHO issued a global alert about SARS, an infection was reported in Toronto, which prompted the WHO in issuing an emergency travel advisory warning that the new disease was spreading worldwide and asking travelers to be wary of SARS symptoms and to report to airport personnel if they or fellow passengers showed any signs of the disease.²²¹ By the end of March 2003, however, “panic and quarantines on a global level” became the legacy of SARS.²²² On 23 March, Scarborough Grace Hospital in Toronto closed temporarily due to an outbreak of SARS, and on 26 March a public health emergency was declared in Ontario, Canada, with “[t]housands of people... ordered into self-quarantine and told not to leave their homes.”²²³ After a small number of passengers on international flights contracted SARS from fellow passengers, the WHO escalated its initial emergency travel advisory by requesting Canada, Hong Kong, and Singapore to screen passengers with SARS symptoms.²²⁴ And on the first of April, American Airlines Flight 128 from Tokyo was briefly quarantined on the tarmac of San Jose International Airport in California after five passengers reported SARS-like symptoms.²²⁵ With other isolated incidences of infection reported in Australia, Indonesia, Malaysia and

218. *See supra* Part II.

219. Yu, *supra* note 70.

220. For a discussion of some of these isolation and quarantine actions, *see* David M. Bell & WHO Working Group on Prevention of International and Community Transmission of SARS, *Public Health Interventions and SARS Spread*, 2003, 10:11 EMERGING INFECTIOUS DISEASES 1900-06 (2004); Richard Schabas, *Severe acute respiratory syndrome: Did quarantine help?*, 15:4 CAN J. INFECT. DIS. MED. MICROBIOL. 240 (2004); Ying-Hen Hsieh et al., *Impact of quarantine on the 2003 SARS outbreak: A retrospective modeling study*, 224(4) J. THEORETICAL BIOLOGY 1729-36 (2007).

221. LEE, *supra* note 22, at 14.

222. *Id.* at 15.

223. *Id.*

224. *Id.* at 15-16.

225. *Id.* at 16.

Singapore, the WHO declared another travel advisory on 2 April, “asking potential passengers to ‘consider postponing all but essential travel’ to Hong Kong and Guangdong province.”²²⁶ This travel advisory was echoed by the CDC, who also added Singapore and Hanoi to the list of countries.²²⁷

In addition to these travel advisories, quarantine and isolation measures on the ground also progressed rapidly. On 31 March 2003, the Hong Kong Health Department issued an isolation order requiring “all residents of an entire apartment block into self-quarantine until April 9.”²²⁸ A day later, however, after having found the initial quarantine to be ineffective, all the residents of the apartment block were relocated to an isolation camp.²²⁹ Unfortunately, due to the secrecy with which the Chinese government approached their handling of the SARS outbreak, very little is known about quarantine and isolation measures on the Chinese mainland. However, reports exist indicating that 10,000 people were quarantined in the eastern Chinese city of Nanjing, and that more than 15,000 people were quarantined in Beijing, where the city’s eighty water reservoirs were sealed off from the public in an effort to prevent the virus from entering the city’s water supply.²³⁰ Entertainment venues and schools were closed and recreational activities halted in the capitol city of Beijing.²³¹ In Toronto, the only city outside Asia to eventually be included under the WHO travel advisory (23 April 2003), approximately 7,000 people were quarantined. Noteworthy about the Canadian quarantine measures, however, is that people who may have been exposed to SARS were asked to voluntarily quarantine themselves.²³² And in Taiwan, 131,132 people were placed under home quarantine, of which only twelve were found to be potential cases of SARS, and only two were confirmed to have SARS.²³³ Similar to the effects that quarantine and isolation measures had in Africa with the Ebola outbreak, economic losses were also reported worldwide as a result of the measures imposed during the SARS outbreak. For example, on 9 April 2003, Australia’s Qantas airlines cut approximately 3% of its workforce in the wake of the SARS outbreak, and various other airlines also reported financial losses as a result of cuts in flights.²³⁴ Hong Kong’s economy “sputtered miserably in the wake of SARS” and damning reports by experts like James Hughes of the National Center for Infectious Diseases in Atlanta, Georgia, did not

226. *Id.* at 17.

227. *Id.*

228. *Id.* at 15-16.

229. *Id.* at 17.

230. *Id.* at 25; see also *Thousands quarantined as SARS riots hit China*, ABC NEWS (May 6, 2003, 3:46 PM), <http://www.abc.net.au/news/2003-05-06/thousands-quarantined-as-sars-riots-hit-china/1849078> [<https://perma.cc/73R7-D5M7>] [hereinafter ABC NEWS].

231. LEE, *supra* note 22 at 25; ABC NEWS, *supra* note 230.

232. LEE, *supra* note 22, at 21; *Mandatory Ebola quarantine is about politics, not public health*, THE CONVERSATION (Oct. 28, 2014, 3:07 PM), <http://theconversation.com/mandatory-ebola-quarantine-is-about-politics-not-public-health-33531> [<https://perma.cc/FF8Y-2GT5>].

233. Rothstein, *supra* note 159, at 252.

234. LEE, *supra* note 22, at 18.

help the situation.²³⁵ Hughes was quoted in a newspaper article saying that “[i]t would be hard for me to see how [SARS] could be eliminated from places like...Hong Kong at this point...I think it would be prudent to say it’s here to stay.”²³⁶ And in Canada, the WHO travel warning issued on 23 April 2003 had an almost immediate effect with store owners reporting “business falling by half overnight, and traffic in shopping malls ground[ing] to a near halt.”²³⁷

Another similarity between the quarantine measures of the Ebola and SARS outbreaks relate to the use of force in effecting the separation and confinement of persons in an effort to control the spread of the disease. In Beijing, it was reported that the police cordoned off buildings, organized checkpoints on roads, and even installed web-cameras in private homes.²³⁸ Stronger control was furthermore exerted over persons in the lower social strata, with village-level governments being empowered, for example, to isolate workers from SARS-affected areas. Repressive police-type measures by public health officials were also reported in some areas, and laws were promulgated prescribing “extremely severe punishments (including the death penalty), against those who violated quarantine.”²³⁹ People, in turn, reacted forcefully to these violent measures imposed in the name of “Public Health” and it was reported that in remote areas of China, residents destroyed quarantine centres and attacked government officials.²⁴⁰

Similar incidences of violence were also reported during the recent Ebola outbreak, during which the use of military force in effecting quarantines seemed to be prevalent. In Monrovia, Liberia, fear and resentment after the government placed an entire neighbourhood under strict quarantine, together with general social and political tensions, created an explosive atmosphere that culminated in populist rebellions and uprisings.²⁴¹ This ultimately led to the death of a fifteen-year-old boy, who was shot, and four other residents wounded, when angry residents clashed with security forces.²⁴² The appropriateness of using such security forces in maintaining quarantines in Liberia and Sierra Leone was questioned when allegations came to the fore that many security officers had been

235. *Id.*

236. Rob Stein, *SARS Virus seen as long-term threat*, WASH. POST (Apr. 21, 2003), <https://www.washingtonpost.com/archive/politics/2003/04/21/sars-virus-seen-as-long-term-threat/ab79e918-c782-4994-94f3-9d8370c8b6fc/> [<https://perma.cc/TLF9-JCZF>] (internal quotation marks omitted).

237. LEE, *supra* note 22, at 21.

238. *Id.* at 29; Tognotti, *supra* note 83, at 258.

239. Tognotti, *supra* note 83, at 258.

240. ABC NEWS, *supra* note 230.

241. Norimitsu Onishi, *Clashes Erupt as Liberia Sets an Ebola Quarantine*, N.Y. TIMES (Aug. 20, 2014), http://www.nytimes.com/2014/08/21/world/africa/ebola-outbreak-liberia-quarantine.html?_r=1 [<https://perma.cc/WF27-EVLQ>].

242. HUMAN RIGHTS WATCH, *supra* note 181.

accepting bribes from people wanting to leave the quarantined areas.²⁴³ The militarization of Ebola in western Africa reminded some generations of the relatively recent civil war, and yet others of colonial coercion in the name of promoting hygiene. The military presence during the Ebola outbreak thus created a heightened sense of uncertainty and distrust, and the need for vigilance (and self-preservation) in communities.²⁴⁴

The appropriateness and effectiveness of quarantine as a public health strategy in curbing the spread of infectious diseases has long been contested: first during the yellow fever outbreak of the eighteenth century, when French Revolutionary ideals fostered an affirmation for citizen's rights and personal freedom, and later by way of the discerning voices of mid-nineteenth century scientists dismissing quarantine as irrelevant in the prevention of cholera.²⁴⁵ Quarantine restrains personal liberty, is a method of temporary detention, is an inconvenience, and can be potentially dangerous when healthy-but-suspected disease carriers are quarantined together with the sick. Quarantine strategies are often accompanied by an undercurrent of suspicion, distrust, and sometimes also result in riots and other forms of violence, as was evident from the Ebola and SARS examples referred to above.²⁴⁶ Finally, it must also be noted that, unfortunately, quarantine measures have also been abused by governments. For example, in the U.S. in the 1900s, after a court struck down the mandatory order for the inoculation of all Chinese Americans with an experimental vaccine prior to leaving the city, Chinese residents in San Francisco were quarantined during an outbreak of the bubonic plague.²⁴⁷ In 1991, HIV-positive Haitian refugees were quarantined in Guantanamo Bay, despite it then already being known that HIV/AIDS is not casually transmitted.²⁴⁸ And shortly thereafter, when an epidemic of multi-drug resistant tuberculosis ("TB") emerged in New York and other parts of the U.S., hundreds of so-called non-compliant TB patients were quarantined.²⁴⁹ Such examples of quarantine abuse usually target the most vulnerable: the homeless, immigrants, and those who suffer from mental illness and substance abuse.²⁵⁰

243. *Id.*

244. SPENCER, *supra* note 167, at 13.

245. Tognotti, *supra* note 83, at 255.

246. *Id.* at 258.

247. Wendy E. Parmet, *Quarantines are a Blunt Instrument in the Fight Against Ebola*, BRINK (Nov. 12, 2014), <http://www.brinknews.com/quarantines-are-a-blunt-instrument-in-the-fight-against-ebola/> [<https://perma.cc/XT64-QUJR>].

248. *Id.*

249. *Id.*

250. See Monica Schoch-Spana et al., *Stigma, Health Disparities, and the 2009 H1N1 Influenza Pandemic: How To Protect Latino Farmworkers in Future Health Emergencies*, 8 BIOSECURITY BIOTERRORISM 243, 243-54 (2010) (explaining how minority groups like Jews and persons with leprosy were already discriminated against in terms of quarantine policies as early as 1347–1352 with the plague epidemic, when such individuals were denied entry to cities and ports. And in 1836 with the cholera outbreak in Naples, prostitutes and beggars were denied free

Michael Willrich describes quarantine as “an uncommon public health technology” and as unnecessary and ineffective, particularly when applied on a large scale.²⁵¹ Quarantine, according to Willrich, is also as “an incredibly blunt instrument... too easily politicized.”²⁵² And Sophie Delaunay, executive director of MSF-USA Médecins Sans Frontières, in denouncing the recent Ebola quarantines in the U.S. stated that “[t]here are other ways to adequately address both public anxiety and health imperatives, and the response to Ebola must not be guided primarily by panic in countries not overly affected by the epidemic.”²⁵³ Yet, fear and panic are the main drivers behind modern day quarantine measures. It is the false sense of security that quarantine inspires and makes governments so reluctant to “abandon the protection of the traditional strategies that provided an antidote to population panic.”²⁵⁴ Because “when a deadly new disease strikes, people expect their leaders to take bold and decisive action ‘out of an abundance of caution.’”²⁵⁵ This caution relates to risk, and risk, according to Lawrence Gostin, is a function of two things: probability that harm will occur and the severity of that harm, should it transpire.²⁵⁶ Gostin further explains that these two factors have a roughly inverse relationship: “the more severe the potential harm, the less the probability, or risk, we are willing to assume.”²⁵⁷ Yet, people are not always rational actors and people do not always assess reasonably the risk that they pose to others, or the risk that they may subject themselves to in certain situations or under certain circumstances.²⁵⁸

Related to this notion of risk and how “rational” people are expected to act, it must also be noted, as it was in the previous section of this part with regard to the effectiveness of bylaws in bringing about behavioural change, that cultural factors may also play a role. Noel Brewer from the University of North Carolina’s Gillings School of Global Public Health, in juxtaposing Western American values with that of Asian cultures, articulates it as follows:

Part of the problem is cultural... Americans tend to think more about individual than communal rights and are understandably dubious of medical mandates that seem to be always changing. Americans also value

movement by health officials.); Tognotti, *supra* note 83, at 256.

251. Julian Cardillo, *Learning from past epidemics: What can smallpox tell us about Ebola?* BRANDEISNOW (Dec. 2, 2014), <http://www.brandeis.edu/now/2014/december/willrich-ebola-qanda.html> [<https://perma.cc/E5RA-XQRX>].

252. *Id.*

253. Eswaran, *supra* note 169.

254. Tognotti, *supra* note 83, at 256.

255. Parmet, *supra* note 247.

256. N.Y. TIMES, *Ebola outbreak raises ethical issues about spreading disease*, SF GATE, <http://www.sfgate.com/health/article/Ebola-outbreak-raises-ethical-issues-about-5884540.php> [perma.cc/ZV5X-T3GY] (last updated Nov. 11, 2014).

257. *Id.*

258. *Id.*

toughness and the ability to work through physical adversity without thinking how they might end up weakening other members of a team. Contrast this with many Asian countries where it's common to see people wearing surgical masks in public. Tellingly, Americans tend to assume this is to prevent the mask wearer from getting sick. But it's actually more often the reverse: The wearer is sick and the mask serves not only to prevent passing germs to others but also to alert people that the wearer is unwell and they should keep their distance.²⁵⁹

Thus, to conclude this part on the national legal responses to the public health emergencies posed by the Ebola and SARS outbreaks, the obvious—which is often forgotten in moments of health panic—needs to be restated: quarantine can undoubtedly—in the absence of effective pharmaceutical interventions, and only if it is the least restrictive means available/necessary to protect public health—serve as an acceptable public health measure to contain infection, to delay the spread of disease, to avert terror and death, and to maintain the infrastructure of society.²⁶⁰ Unfortunately, however, too many examples exist of how quarantine strategies have been misused and abused. As a rule of thumb, quarantine strategies may be warranted and effective when it is based on sound scientific and medical information, is the result of a rational decision-making process that takes into consideration the particularities of the specific circumstances and disease, and is implemented and enforced in a manner that promotes trust and certainty, rather than cultivating fear, panic and suspicion. In other words, the restriction on the freedom and liberty of persons in the name of public health or a public emergency must meet the requirements of “legality, evidence-based necessity, and proportionality.”²⁶¹ The illusion that safety can be assured by keeping those who are dangerous away should be heeded against at all cost, and the duty is ultimately on the state to show that there is no less onerous way to reduce the risk of contagion.²⁶²

VI. LESSONS TO BE LEARNT: WHY KNOWLEDGE PRODUCTION BEYOND DISCIPLINARY CONFINES IS NECESSARY

A. Failings of International Legal Frameworks for and Responses to Disease Control

Given the history and background of the existing international legal framework for disease control and public health emergencies, two major shortcomings can be identified: the first relates to the IHR (2005) obligations

259. *Id.*

260. See Cetron & Landwirth, *supra* note 180, at 325 (providing an exposition of the ethical requirements that must be considered for quarantine to be ethically justified); Tognotti, *supra* note 83, at 258; HUMAN RIGHTS WATCH, *supra* note 181; Rothstein, *supra* note 159, at 231.

261. HUMAN RIGHTS WATCH, *supra* note 181; see also Rothstein, *supra* note 159, at 249-73.

262. HUMAN RIGHTS WATCH, *supra* note 181; Rothstein, *supra* note 159, at 249-73; Parmet, *supra* note 247.

placed on Member States to take a number of measures to prevent, to respond to, and to control the spread of disease and to implement appropriate measures within its domestic legal and public health systems. With the most recent outbreak of Ebola, it was now more clear than ever that Member States are largely failing to meet these obligations in this regard. For example, the WHO's 2012 Report on IHR Core Capacity Implementation revealed that only 19% of its signatory states on the African continent have implemented the IHR requirements in their national legal and public health systems.²⁶³ A joint report by the World Bank, African Development Bank and European Union specifically focusing on the most recent Ebola outbreak highlighted the poor pre-Ebola implementation of these regulations, noting that "systems for early warning and response were inadequate, lacked necessary accountability and links with or support from national disaster management mechanisms and were not prepared to scale up response to this kind and scale of epidemic."²⁶⁴

A second shortcoming, largely stemming from this failure of Member States to ensure that the core capacities or minimum set of standards for public health surveillance and response as set out in the IHR (2005) are incorporated in national legal and health systems, is that much of the other international responses to disease control that are dependent on the existence and efficiency of an appropriate national framework also fail. For example, as with the H1N1 Influenza outbreak in 2009 and the spread of Poliomyelitis in May 2014, the Director-General declared the most recent outbreak of Ebola to be a PHEIC in terms of the IHR (2005) and issued temporary recommendations to affected countries.²⁶⁵ Yet, as with the previous two declarations of PHEICs, the compliance of WHO Member States with the Director-General's temporary recommendations has been uneven, especially with regard to the recommendations to avoid generalized border closures and the suspension of commercial flights.²⁶⁶ And, despite a WHO review committee calling for international collaboration to form an "extensive global public health reserve workforce to counter crises and outbreaks of disease" in the aftermath of the swine flu epidemic of 2010, the world has yet to respond to these recommendations, recommendations that could have made a real difference in the outcome of the recent Ebola outbreak had they been in place.²⁶⁷

263. WORLD HEALTH ORG., SUMMARY OF 2011 STATES PARTIES REPORT ON IHR CORE CAPACITY IMPLEMENTATION 50 (2012), http://www.who.int/ihr/publications/WHO_HSE_GCR_2012.10eng/en/ [<https://perma.cc/TMZ7-KH4Y>].

264. UNITED NATIONS DEV. PROGRAMME, RECOVERING FROM THE EBOLA CRISIS 44 (Lance W. Garmer ed., 2015).

265. Burci & Quirin, *supra* note 6.

266. *Id.*

267. John Lauerman, Simeon Bennett & Makiko Kitamura, *Ebola Spread After WHO's 2010 Warning Ignored, Agency Says*, BLOOMBERG (Jan. 15, 2015, 1:38 PM), <http://www.bloomberg.com/news/articles/2015-01-15/ebola-flourished-after-who-s-2010-warning-ignored-report-says> [<https://perma.cc/C7PP-CVRD>].

Suk suggests that these shortcomings may be due to the high stakes involved for nation states in having a PHEIC declared within their borders. Such a status not only mandates the WHO:

to issue both temporary and standing (but non-binding) recommendations for implementations to be adopted by the affected WHO member state as well as other WHO member states (articles 15-18)...[but could also]...have immediate economic ramifications for the country in which the disease event is occurring, either through declines in tourism, decreased demand for exports or, worse, trade embargoes.²⁶⁸

Evidence of this can be gleaned from both the recent Ebola outbreak as well as the 2003 SARS outbreak. For example, in 2013, Sierra Leone and Liberia ranked second and sixth among the top ten countries with the highest GDP growth in the world, and Guinea had high hopes for its Simandou iron ore project on to which numerous international investors had signed.²⁶⁹ Today, the economies of both these countries are still recovering in the aftermath of the Ebola outbreak. Nigeria, in turn, where only twenty cases were reported, witnessed a 40% drop in demand for goods and services in its largest economic hub, Lagos.²⁷⁰ And even Ghana and Cote d'Ivoire, where no cases were reported, experienced an economic impact with international conferences being cancelled, reduced flights, and fewer tourists.²⁷¹

Particularly interesting about the economic impact of the most recent Ebola outbreak in Africa was the observation that “the largest economic effects of the crisis are not as a result of the direct costs (mortality, morbidity, caregiving, and associated losses to working days) but rather those resulting from aversion behavior driven by fear of contagion.”²⁷² This fear was stoked by inaccurate and implausible claims by international institutions like the WHO and the CDC. An early example of how data was misleadingly represented was the WHO statements from April through August 2014 that the death rate from Ebola was up to 90%, while the actual death rate from confirmed cases, even in the early days in March 2014 in Guinea, was about 70%.²⁷³ Both the WHO and the CDC misjudged how the disease would evolve, both overestimated likely cases, and the CDC projected that up to 1.4 million people in Liberia and Sierra Leone could be infected by January 2015, while only 19,140 cases had been reported in both countries by 27 January 2015.²⁷⁴ In October 2014, the World Bank estimated that

268. Suk, *supra* note 148, at 1.

269. Sy & Copley, *supra* note 192.

270. THOMAS JAYE & FIIFI EDU-AFFUL, *EBOLA: IMPACT AND LESSONS FOR WEST AFRICA* (2014).

271. *Id.*

272. Juliana Mercer, *The Birthplace of Disease*, PENNSTATE: OLEAD 410: LEADERSHIP IN A GLOBAL CONTEXT, CULTURAL LEADERSHIP BLOG (Apr. 29, 2015), <https://sites.psu.edu/global/2015/04/29/the-birthplace-of-disease/> [<https://perma.cc/4WTR-4CPV>].

273. *Id.*

274. *Id.*

the total costs associated with Ebola for West Africa were as high as \$32.6 billion, an estimate which was revised in January 2015 to \$6 billion at most.²⁷⁵ Such inaccurate and implausible claims stoked panic and ultimately had direct and indirect economic consequences for the countries concerned.²⁷⁶

Most vulnerable in the face of such misleading information is the informal economy, where farmers are often unable to organize work teams which in turn affects harvests and lead to food insecurity and women are unable to sell their goods at markets and other public places due to the debilitating effect of fear on people to make use of public transport or to gather in public places. Such indirect economic consequences were particularly evident in Sierra Leone, where no differences were found in labor impacts between quarantined and non-quarantined districts.²⁷⁷ Fear was also the primary determinant of behavior curbing economic activity, and is estimated to have contributed as much as 80% to 90% of the total economic impact of the SARS epidemic in 2002-2004, an epidemic that cost the world economy a staggering USD \$40 billion.²⁷⁸

The economic repercussions of having a PHEIC declared within a country's borders are therefore a real and valid concern. But in the aftermath of the most recent outbreak of an epidemic, and particularly in light of the calamity thereof, we have to consider what this means for forging a robust international response framework for the spread of infectious disease. A project that we seemingly continue to fail at as epidemics continue to overwhelm the international epidemic bulwark. There are no simple solutions to this complex problem, the multifacetedness of which was evident from the transdisciplinary narration of the two health panics described above. The remainder of this part of the article will focus on two identified shortcomings of the international legal and operational framework for public health emergencies and disease control: the first being *who* the relevant body is that should take primary responsibility in case of an epidemic or other public health emergency, and the second question being *how* the coordination of such a public health event should be informed and steered.

B. Who is Responsible? From State Sovereignty to Collective Responsibility

A possible reason for the inability of the international community to forge a robust international framework for the spread of infectious disease can be found in the very nature of international law, and became apparent early on in the consultation process to the IHR (2005). Concerns about State sovereignty were raised in respect of several different aspects of the IHR (2005) and in essence

275. *Id.*

276. Sy & Copley, *supra* note 192.

277. *Ebola hampering household economies across Liberia and Sierra Leone*, THE WORLD BANK (Jan. 12, 2015), <http://www.worldbank.org/en/news/press-release/2015/01/12/ebola-hampering-household-economies-liberia-sierra-leone> [<https://perma.cc/DJV4-D8NC>].

278. Sy & Copley, *supra* note 192; Jonathan E. Suk et al., *Enhancing Public Health Preparedness: Towards an Integrated Process*, 21:3 EUROHEALTH INT'L 36, 36 (2015).

dealt with the extent of interference by the WHO within Member States' territory once a PHEIC is declared, as well as the "excessive" or "additional" obligations placed on member States to take a number of measures to prevent, respond, and to control the spread of disease and to implement appropriate measures within its domestic legal and public health systems.²⁷⁹ On the one hand, States want to protect their sovereignty with regard to the scope of their national regulatory autonomy over all matters related to health. On the other hand, the globalized international community is in need of some form of protection from, and power to intervene and prescribe when, a public health emergency or the risk thereof is imminent. Yet, it is important to remember that as with most other international legal instruments, the international legal obligations created are, for the most part,²⁸⁰ voluntarily assumed and generally rely on the "auto-interpretation—[of] each state interpreting and applying norms for itself rather than following the prescriptions of a higher authority."²⁸¹

The nation states where disease outbreaks occur therefore remain the primary responsible actors and duty holders under international law and in protecting the health, well-being, and dignity of their population, and ultimately the international community at large.²⁸² This "responsibility to protect" ("R2P") was endorsed by the General Assembly Resolution 2177 (2014) and while it is primarily intended as a response to war crimes, genocide, and crimes against humanity,²⁸³ Brigit and Moore have convincingly argued that it also applies to "situations of widespread poverty, malnutrition and outbreaks of infectious diseases."²⁸⁴ Moore describes the application of R2P in terms of concentric circles of responsibility

starting with the individual state's obligation to ensure the well-being of its own people; nested within the collective responsibility of the community of nations to assist individual states in meeting those obligations; in turn encircled by the responsibility of the United Nations to respond if necessary to ensure the basic rights of civilians, with

279. Von Tigerstrom, *supra* note 123, at 55.

280. See JAMES CRAWFORD, *BROWNIE'S PRINCIPLES OF PUBLIC INTERNATIONAL LAW* 594-97 (8th ed. Oxford U. Press 2012) (noting the important relevance of the peremptory norms (jus cogens) of international law. The International Law Commission identified and incorporated these norms in the Vienna Convention on the Law of Treaties. Thus, "a norm from which no derogation is permitted and which can be modified only by a subsequent norm of general international law having the same character," is regarded as a peremptory norm. Examples of peremptory norms are the prohibition of the use of force contrary to the U.N. Charter, the prohibition of crimes under international law such as genocide and crimes against humanity, and the prohibition of slavery.).

281. Von Tigerstrom, *supra* note 123, at 57.

282. Toebes Brigit, *The Ebola crisis: challenges for Global Health Law*, SHARES (Feb. 4, 2015), <http://www.sharesproject.nl/the-ebola-crisis-challenges-for-global-health-law/> [<https://perma.cc/PY7D-53PP>].

283. S.C. Res. 2177 (Sept. 18, 2014).

284. *Id.*

military means only contemplated as a last resort, and only with the consent of the Security Council.²⁸⁵

Likewise, international human rights law can also be used to frame the rights of peoples and the obligations of states in a public health emergency. Coomans argues that a public health emergency is ultimately a matter relating to the right to health, and signatories to the International Covenant on Economic, Social and Cultural Rights (“ICESCR”)²⁸⁶ are obliged to progressively realize the right of people to the enjoyment of the highest attainable standard of physical and mental health under Article 12(1).²⁸⁷ States must therefore progressively realize and ensure that a minimum core of a properly functioning health system and infrastructure, as well as adequate health-system capacity, exists for people to gain access to health services.²⁸⁸ Article 12(2) furthermore specifically states that the full realization of the right to health include actions relating to the prevention, treatment and control of epidemic, endemic, occupational and other diseases, and the creation of conditions which should ensure to all medical service and medical attention in the event of sickness.²⁸⁹

In moving beyond the immediate responsibilities of States, the international community also has responsibilities with regard to public health emergencies under international law. The U.N. Committee on Economic, Social and Cultural Rights has said “given that some diseases are easily transmissible beyond the frontiers of a State, there is a collective responsibility on the international community to address this problem. The economically developed States parties have a special responsibility and interest to assist the poorer developing States in this regard.”²⁹⁰ And, Article 2(1) of the ICESCR provides that state parties should realize the rights in the Covenant “individually and through international assistance and co-operation, especially economic and technical.”²⁹¹ Brigit also submits that this international “duty to aid” under human rights law is congruent

285. Jennifer Moore, *The responsibility to protect in the Ebola outbreak*, OUPBLOG (Sept. 22, 2014), <http://blog.oup.com/2014/09/responsibility-protect-r2p-west-africa-ebola-outbreak-pil/> [<https://perma.cc/7SSN-THJE>].

286. International Covenant on Economic, Social and Cultural Rights, Dec. 16, 1966, S. Treaty Doc. No. 95-19, 6 I.L.M. 360 (1967), 993 U.N.T.S. 3 [hereinafter ICESCR].

287. Fons Coomans, *Ebola and the human right to health*, MAASTRICHT L. NEWS & VIEWS (Oct. 28, 2014), <http://law.maastrichtuniversity.nl/newsandviews/author/prof-dr-fons-coomans/> [<https://perma.cc/FV95-EHM2>].

288. Brigit, *supra* note 282.

289. Coomans, *supra* note 287.

290. U.N. Comm. on Econ., Soc., and Cultural Rights (CESCR), Gen. Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12) E/C.12/2000/4, at 40 (Aug. 11, 2000); see generally *Maastricht Principles on the Extraterritorial Obligations of States in the Area of Economic, Social and Cultural Rights*, ETO CONSORTIUM (Sept. 2013), <http://www.etoconsortium.org/en/main-navigation/library/maastricht-principles/> [<https://perma.cc/D9DF-W37D>].

291. Brigit, *supra* note 282.

with the R2P.²⁹² While non-state actors like civil society organizations, humanitarian aid organizations, and the pharmaceutical industry are not directly bound by standards of international or global health law, Brigit argues that they have moral duties to comply with human rights standards, including the right to health. This moral duty, Brigit argues, is particularly warranted given the influence and power of these non-state actors over the health and well-being of people.²⁹³

However, and as was already indicated above, while international legal instruments like the IHR (2005) and the concomitant obligations that it places on member States requires an inevitable compromise between national sovereignty and the collective international good, these obligations remain—like many others in the realm of international law—mere ideals subject to competing claims and intricate political and economic negotiations. In the next section therefore, the discussion will return to the national level, and more specifically to the people directly affected by the outbreak of disease.

C. Revisiting the ‘How’: Knowledge Production beyond the Boundaries of Disciplinary Confines

Article 43(2) of the IHR (2005) requires that all health measures prescribed in the IHR (2005), including how and when a PHEIC is declared, be informed and directed in terms of bio-medical knowledge.²⁹⁴ No mention is made, however, of the social and cultural contexts in which public health emergencies play out, and how context specific information about the environment, relevant social and cultural factors, and even political considerations, should inform health measures and strategies. Moreover, the predominant top-down approach so archetypical of legal and regulatory frameworks does little to foster communication and trust, and essentially sidelines community engagement as a critical operational tool.²⁹⁵ This is not only regrettable but ultimately also counter-intuitive to the public health ideal as community engagement is an essential resource in any public health emergency. It is, for example, through community engagement that people are equipped with the knowledge, capabilities and support to prevent themselves and others from falling prey to an emerging or ongoing epidemic—large-scale fear and resistance to health authorities as well as stigmatisation can be reduced, safe and supportive practices of care for those already infected can be ensured, and safe burial practices promoted.²⁹⁶ Yet, the social and cultural contexts in which public health emergencies play out are often ignored and are definitely not considered in terms of the execution and operation of international and national legal frameworks.

292. *Id.*

293. *Id.*

294. For a discussion of the various “sound science” clauses included in the IHR (2005) see Suk, *supra* note 148, at 1-5.

295. DuBois et al., *supra* note 17, at 29.

296. See *supra* text accompanying note 17.

International responses to disease outbreaks usually regard local culture as an impediment, and place overt emphasis on a strategy that “places responsibility for disease transmissions on individuals who are expected to reject ‘negative’ behaviours such as communal eating or burial traditions, while failing to provide sufficient resources to those same individuals to enable their ‘appropriate’ management of the disease.”²⁹⁷ The most recent Ebola outbreak is a case in point—assumptions about local ignorance and capabilities led to false attributions being made to the indigenous peoples of the affected areas and their culture, while much of the community resistance was not related to indigenous traditions “but [rather] basic issues like people seeing family members taken away and never getting news about where they end up or how they are doing.”²⁹⁸ Such stereotypes not only feed paternalism, but the consequences thereof directly impact the international and national legal and regulatory responses to public health emergencies. It has been said, for example, that “[t]he apparent result is a predisposition in the aid system towards control and an inflated sense of its own importance, rather than responses and strategies that engage with and rely on communities, and demand action from them.”²⁹⁹

A new integrated approach is therefore required for international norm-setting that is holistic, multidisciplinary, and globally oriented. The strictures of disciplinary boundaries, whether biomedical or legalistic, are rigid, hierarchical, and often keep us from effectively responding to health needs and impediments on the ground. This was indeed evident from the most recent Ebola outbreak where the troubling gap and powerful potential of community engagement stood glaring in the aftermath of many lives lost.³⁰⁰ Such a call for a more integrated approach beyond disciplinary confines is indeed not novel, but was already articulated shortly after the 2003 SARS outbreak by Arthur Kleinman and James Watson who said:

Seen in the context of avian flu and the major outbreaks of flu in the twentieth century—most of which appear to have originated in south China—the SARS epidemics must be found. Virologists need to work in teams consisting of ecologists, biologists, soil scientists, economists, political scientists, demographers, epidemiologists, anthropologists and ethicists. This is the only way we can hope to understand the intersection of ecological, social, and biological processes that underline emergent infectious diseases. At issue here are the migration of waterfowl, the intensive cultivation of ducks, chickens, and pigs in settings of dense human habitation, trade in and sale of wild animals, the migration of

297. *Id.*

298. Kari Lydersen, *Ebola Teams need better cultural understanding, anthropologists say*, DISCOVER MAG. (Dec. 9, 2014), <http://blogs.discovermagazine.com/crux/2014/12/09/ebola-cultural-anthropologists/> [<https://perma.cc/RN97-RNCG>].

299. DuBois, *supra* note 17, at 30.

300. *See supra* note 17, at 30.

workers and the complexities of local cultural practices.³⁰¹

Somewhere between parochialism and cosmopolitanism is a point where the abstract logic of the international and the very real concerns of the local meet. The meeting point does not have to be as belligerent as per DuBois and Wake, who argue that the most recent Ebola outbreak has set the scene for what will be a “battleground between health security, humanitarian health and the authority of transnational institutions” in the future.³⁰² But the tension between international and local concerns can produce a positive outcome, thus contributing to a multifaceted and integrated approach that is not only sensible in terms of diversity of knowledge systems, but also legitimate to a degree not yet experienced.

VII. CONCLUSION

This article offered a chronicle of the rise and fall of two notable epidemics of the modern world. In utilizing a trans-disciplinary lens in considering the international, operational and national legal frameworks in which these two epidemics ran its course, it is shown that the extent of biomedical knowledge available on a disease, an epidemic, or a public health emergency has little bearing on how successful states and the international community at large will be in effectively responding thereto. The first Ebola outbreak occurred in 1976 in Sudan and the Democratic Republic of Congo (then Zaire) and much of the findings of the Zaire and Sudan Commissions that were established in the immediate aftermath of these outbreaks still hold true today. Yet, with the most recent Ebola outbreak in which more than 27,200 people were infected and more than 111,000 died, serious questions have been raised about the preparedness of the international community and its representative structures in dealing with public health emergencies. This stands in stark contrast to the 2003 SARS outbreak on which no scientific bio-medical information was available at the outset of the epidemic, but the epidemic was successfully contained within months of the first reported case and with only 774 attributable deaths.

These two notable public health emergencies remain important in evaluating international and operational responses to disease control as both gave rise to “historic” developments in terms of the international legal regulation of disease. The current legal instrument for the control of the spread of disease, the IHR (2005), is a direct culmination from the 2003 SARS outbreak. Additionally, the recent Ebola outbreak led to the UN Security Council adopting Resolution 2177, confirming the Ebola outbreak to be a threat to international peace and security and establishing UNMEER as a temporary measure to coordinate the work of U.N. entities with other organisations and all governments involved. However, these two outbreaks also confirmed the paradox of being “a global village in a divided world;”³⁰³ as we were again reminded of how increasingly interdependent

301. Arthur Kleinman & James L. Watson, *Introduction: SARS in Social and Historical Context, in SARS: PRELUDE TO PANDEMIC?* 14, 14 (Stan. U. Press 2005).

302. DuBois, *supra* note 17, at 40.

303. OBIJOFOR AGINAM, *GLOBAL HEALTH GOVERNANCE: INTERNATIONAL LAW AND PUBLIC*

we are, especially in the face of a public health emergency. Yet, it is not only the various organisations, structures, and stake-holders at the international and national levels that must continue to work towards an effective international response framework. This will not be enough, because:

[u]nlike a tsunami or an earthquake, the impact of an outbreak is insidious: human-to-human transmission is slow to reveal itself, and, most important, the spread and control of a disease epidemic hinges on attitudes and behaviours, many of them determined by how local populations feel about the people who are assigned to care for their health.³⁰⁴

Sight must therefore never be lost of the important role that the people most affected by a public health emergency can play in the operational responses to disease control. Recognizing people's agency in this manner has a long-term benefit that goes beyond the mere pragmatic to create new avenues of knowledge production not only for the sake of ending a crisis, but indeed as a function of interdisciplinary and intersectional cooperation.

International and operational responses to disease control, historically reactionary in nature, can benefit from a more proactive and interdisciplinary approach that moves to capacitates the local in order to deal with the relentless transnational.

HEALTH IN DIVIDED WORLD (U. Toronto Press 2005).

304. Marie-Paule Kieny, *Human emotion is the variable in the Ebola crisis*, ALJAZEERA (May 9, 2015), <http://www.aljazeera.com/indepth/opinion/2015/05/human-emotion-variable-ebola-crisis-150507114647088.html> [<https://perma.cc/P9Q2-2U4C>].