

Preparedness Rules Applicable to Naturally Occurring CBRN Incidents with Special Emphasis on Biological Events

Andrea de Guttery

1 Introduction

According to the Global Disaster Alert and Coordination System,¹ in the period between 23–29 April 2021, there were, globally, 11 earthquakes (each with a magnitude higher than 5), two tropical cyclones, two volcanic eruptions and two floods; each of these events, due to their nature and strength, could have caused spillages and/or contaminations. Furthermore, there are ongoing infectious diseases and pandemics,² which have been an endemic part of human history,³ and which will, inevitably, continue to happen in the near future.⁴

¹ <<https://www.gdacs.org/>>.

² Thus far, the WHO has not provided a clear definition of ‘pandemic’, although reference is often made to the ‘pandemic phase’ of infectious diseases. For the purposes of this article, a pandemic is the worldwide spread of a new disease which has a significant impact on the affected societies. On the problems related to the definition of pandemic, see P Doshi, ‘The elusive definition of pandemic influenza’, (2011) *Bulletin of the WHO*: <<https://www.scielo.org/article/bwho/2011.v89n7/532-538/en/>>. All links were last accessed in May 2021.

³ Over the last 100 years, several pandemics have been registered: the Spanish flu in 1918 (with a death toll of about 40 million), the Asian flu in 1956–1958 (with a death toll of about 2 million), the flu pandemic in 1961 (with a death toll of about 1 million), the HIV/AIDS pandemic in 2005–2012 (with a death toll of about 36 million), and the H1N1 pandemic in 2009–2010 (with a death toll of about 500,000).

⁴ A recent study stated that a future influenza pandemic ‘is inevitable, although it cannot be predicted when it will happen nor how severe it will be’: European Centre for Disease Prevention and Control, ‘Guide to Revision of National Pandemic Influenza Preparedness Plans. Lessons Learned from the 2009 A (H1N1) Pandemic’, (2017) <<https://www.ecdc.europa.eu/sites/default/files/documents/Guide-to-pandemic-preparedness-revised.pdf>>. Virologists candidly admit that, despite enormous advances in virology and epidemiology, ‘many fundamental scientific questions concerning the origins, virulence, and diffusion of influenza remain unanswered’: V Smil, *A Complete History of Pandemics, Global Catastrophes and Trends: The Next 50 Years* (The MIT Press, 2008).

The cost associated with all these types of events will, inevitably, increase in years to come.⁵

Given this situation, while prevention remains an essential tool, preparedness measures are crucial in order to have the earliest and most adequate response to any natural CBRN event that may arise.⁶ Chapters 2 and 4 have already offered a detailed definition of the notion of preparedness, and this definition continues to be used here. It suffices to note that, according to the WHO,⁷ emergency preparedness is defined as ‘the knowledge and capacities and organizational systems developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from the impacts of likely, imminent, emerging, or current emergencies’.

In this chapter, attention is focused on relevant international preparedness obligations (with the exception of those adopted by the European Union, examined in Chapter 19) applicable only to natural events and mainly to pandemics. In fact, most of the obligations associated with natural CBRN events not linked to pandemics (such as seismic events, volcanic eruptions etc.)⁸ are regulated in general agreements dealing with any kind of CBRN event and have, therefore, already been investigated in Chapter 4.

5 The World Bank has estimated that ‘the annual global cost of a moderate to severe pandemic would be around US\$570 billion, or 0.7 percent of global income’: World Bank Group, ‘*Global Crisis Response Platform*’, (2016): <<http://documents.worldbank.org/curated/en/334721474058771487/pdf/WBG-Global-Crisis-Response-Platform-08252016.pdf>>. A recent study by the Asian Development Bank estimates the global losses from COVID-19 as ‘ranging from \$2.0 trillion to \$4.1 trillion, equal to 2.3%–4.8% of global GD’: Asian Development Bank, ‘*Asian Development Outlook 2020: What Drives Innovation in Asia? Special Topic: The Impact of the Coronavirus Outbreak – An Update XIV*’, (2020): <<https://www.adb.org/sites/default/files/publication/575626/ado2020.pdf>>.

6 During the COVID-19 crisis, the lack of sufficient personal protective equipment, even for healthcare workers, and insufficient coordination among the different actors involved in the response phase, caused serious problems in many countries and affected the quality of the medical response.

7 WHO, *A Strategic Framework for Emergency Preparedness*, (2017): <<https://apps.who.int/iris/bitstream/handle/10665/254883/9789241511827-eng.pdf;jsessionid=9C16566E3601A231C5B27AE39302E5C1?sequence=1>>.

8 See more on these events in ch 4 and ch 12.

2 Specific Preparedness Obligations Regulated in International Instruments

Due to the increase in the number of natural disaster events and the more severe consequences attached thereto, preparedness measures have captured growing interest, especially in the field of pandemics.⁹ The WHO has played a major role in this development. Initially, the WHO developed soft law instruments such as guidelines, guides and checklists that contributed to increasing awareness of how to be better equipped for future pandemics.¹⁰ Later, preparedness obligations were introduced, mainly through the 2005 International Health Regulations (IHR).¹¹ Article 13 of the IHR requires each State to 'develop, strengthen and maintain [...] the capacity to respond promptly and effectively to public health risks and public health emergencies of international concern as set out in Annex 1'.¹² This annex defines the core capacity requirements for surveillance and response. States are required to be properly equipped (both in terms of decision-making procedures and physical infrastructures) and to have staff duly trained to be ready a) to detect and report diseases or deaths above expected levels for the particular time and place; and b) to manage the health emergency by providing support through specialised staff, laboratory analysis of samples (domestically or through collaborating centres) and logistical assistance (eg equipment, supplies and transport). In 2011, the 64th World Health Assembly adopted the Pandemic Influenza Preparedness (PIP) Framework for Sharing Influenza Viruses, Vaccines and Other Benefits,¹³ which contains several important recommendations with impacts that extend far beyond a given event. States must guarantee to immediately share H5N1 and other influenza viruses with human pandemic potential with the WHO Collaborating Centre on Influenza or the WHO H5 Reference Laboratory.¹⁴ National Influenza Centres and other authorised laboratories must make supplies of non-commercial diagnostic reagents and test kits for identifying and

9 See P Sands, 'The Neglected Dimension of Global Security: A Framework for Countering Infectious Disease Crises', (2016) 13 *New England Journal of Medicine*, 1281.

10 See the following section.

11 The legal basis of the IHR is provided in Articles 21(a) and 22 of the WHO Constitution, which confer upon the World Health Assembly the authority to adopt regulations 'designed to prevent the international spread of diseases'.

12 On the basis of paragraph 1 of Article 13, States may demand an extension of the five-year deadline.

13 WHO, Pandemic Influenza Preparedness Framework for the Sharing of Influenza Viruses and Access to Vaccines and other Benefits (2011): <https://apps.who.int/iris/bitstream/handle/10665/44796/9789241503082_eng.pdf?sequence=1>.

14 Art 5.1.

characterising specimens of influenza available free of charge.¹⁵ Moreover, influenza vaccine manufacturers must be urged to set aside a portion of each production cycle of vaccines for H5N1 and other influenza viruses with human pandemic potential for stockpiling and/or use by developing countries.¹⁶ All these preparedness measures are useful to tackle other types of pandemics as well.¹⁷

In the same vein, the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (1972) reinforces international capabilities for mitigation of outbreaks of any disease, not only those provoked by an alleged use of biological or toxin weapons.¹⁸ In December 2014, a list of desired preparedness measures was approved during the meeting of the States Parties to the 1972 Convention. These measures, which must be considered as mere recommendations, include the availability of capable personnel/necessary national resources; national plans; appropriate command, control and coordination of cross-governmental planning and response; and regular training activities to strengthen national capacities.¹⁹ The rising interest in preparedness measures is likewise testified by the WHO's decision to organise regular Meetings of Experts on Assistance, Response and Preparedness.²⁰

The UN system has also played a role in this endeavour to reinforce national capacities to face a natural disaster²¹ or pandemic. In UN General Assembly

15 Art 6.4.1.

16 Art 10.1. The WHO Director-General has been tasked with seeking, in cooperation with several stakeholders, commitments for contributions to maintain and further develop a stockpile of antiviral medicines and associated equipment for use in containment of outbreaks of H5N1 and other influenza viruses with human pandemic potential and to establish and maintain a stockpile of vaccines and associated equipment, including syringes, needles and applicators: Art 6.9.1.

17 S Negri, 'Communicable disease control', in G L Burci and B Toebe (eds.), *Research Handbook on Global Health Law*, (Elgar Publishing Ltd. 2018).

18 At the Eighth Review Conference, which took place in 2016, the parties stressed that 'national preparedness and capacities also contribute directly to international capabilities for response, investigation and mitigation of outbreaks of disease, including those due to alleged use of biological or toxin weapons': Eighth Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, BWC/CONF.VIII/4 (Jan. 11, 2017), para 40.

19 Meeting of the State Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (BWC), BWC/MSP/2014/5 (Dec. 15, 2014), para 34.

20 The Eighth Review Conference and the 2017 Meeting of States Parties defined the working methods and the task of the Meetings of Experts.

21 See more in ch 4 by de Guttry.

(UNGA) Resolution 60/262 approving the Political Declaration on HIV/AIDS,²² heads of State and government committed to adopting national plans:

to increase the capacity of human resources for health to meet the urgent need for the training and retention of a broad range of health workers, including community-based health workers; improve training and management and working conditions, including treatment for health workers; and effectively govern the recruitment, retention and deployment of new and existing health workers.

Making reference to the outbreak of the Ebola virus in the Democratic Republic of Congo, in Resolution 2439 (2018), the SC requested all components of the UN family 'to accelerate their response to the Ebola outbreak, within the overall coordination of WHO, including by supporting the development and implementation of preparedness and operational plans'.²³ A few months later, in a statement issued by the President of the Security Council, Member States and civil society in affected and at-risk countries were requested 'to work urgently with relevant partners to improve their preparedness for preventing, detecting and responding to possible cases, as well as to implement optimal vaccine strategies that have maximum impact on curtailing the outbreak'.²⁴ Furthermore, the Special Session of the UNGA, which took place on 3–4 December 2020, represented a unique opportunity to address the Covid-19 pandemic and its health, humanitarian and socio-economic impacts around the world. Finally, Resolution 75/27, adopted on 7 December by the UNGA, and proclaiming 27 December as the International Day of Epidemic Preparedness,²⁵ further testifies to the attention being devoted by the UN to the strategic importance of these measures in dealing with pandemic events.

To be truly effective, these measures must be highly contextualised and tailored to the specific cultural and socio-economic situation in which they are expected to produce their effects. The regional level seems optimal to achieve this, as it allows for tactics to be calibrated to the peculiar features of a specific geo-political area. As highlighted in Chapter 4, European organisations (or regional organisations with mostly European members/participating States)

²² GA Res. 60/262 (15 June 2006), UN Doc A/RES/60/262.

²³ SC Res. 2439 (30 Oct. 2018), UN Doc S/RES/2439, para 14. The SC already stressed the fundamental importance of preparedness measures in the previous SC Res. 2177 (18 September 2014), UN Doc S/RES/2177, devoted to the first Ebola outbreak in Liberia and bordering States.

²⁴ S/PRST/2019/6 (2 Aug. 2019).

²⁵ GA Res. 75/27 (7 December 2020), UN Doc A/RES/75/27.

have contributed significantly to increasing the attention given to generic preparedness measures (*ie* measures applicable to any kind of disaster, including natural disasters); this might explain why the same organisations (with the exception of the EU) have not adopted many preparedness rules to deal specifically with natural disasters or pandemics. However, for most of these organisations, the COVID-19 pandemic was eye-opening. The case of the OSCE is paradigmatic: in the 1975 Final Act of the Conference on Security and Co-Operation in Europe, the participating States identified research on viral diseases as one of the areas for potential reinforced cooperation. However, not much happened in this direction until the COVID-19 outbreak, when the OSCE suddenly devoted several studies, reports and recommendations to issues related to the ongoing pandemic.²⁶ Almost the same phenomenon occurred within other regional organisations, such as NATO,²⁷ the OAS,²⁸ ASEAN²⁹ and the African Union.³⁰ Finally, while most of the bilateral treaties devoted to the management of cooperation in case of disasters are applicable to both man-made and natural disasters (and therefore were analysed in Chapter 4), in a limited number of cases, they regulate specific preparedness measures applicable only to natural disasters.³¹

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- 26 Among these, one may recall the specific attention devoted to human rights; elections and the right to vote; the freedom of press and speech; vulnerable groups and national minorities in need of special protection; and the impact of the pandemic on migration and trafficking of human beings. A comprehensive overview of the OSCE activities related to the COVID-19 pandemic is available at <<https://www.osce.org/covid19-portal#response>>.
- 27 For an overall picture of NATO activities undertaken to face the COVID-19 pandemic, see: <<https://www.nato.int/cps/en/natohq/174592.htm>>.
- 28 The OAS, unlike other regional organisations, decided to launch the Post-COVID-19: OAS Portal for Consultations, Forums and Repository: <<https://www.oas.org/ext/en/main/covid-19/RepositoryZZ>>.
- 29 <https://asean.org/?static_post=updates-asean-health-sector-efforts-combat-novel-coronavirus-covid-19>.
- 30 See the 'Africa Joint Continental Strategy for COVID-19', adopted on March 5, 2020: <https://au.int/sites/default/files/documents/38264-doc-africa_joint_continental_strategy_for_covid-19_outbreak.pdf>. More information on the AU activities related to the COVID-19 pandemic is available at <<https://au.int/en/covid19>>.
- 31 See, for example, the Scientific Co-operation Agreement on Co-operation in Hydro-Meteorological Monitoring, Natural Disaster Prevention and Early Warning between Italy and the Caribbean Community (2006) or the Agreement between Italy and the UN Economic Commission for Latin America on Disaster Prevention in Latin America and in the Caribbean (1998), which are aimed at providing financial support to various specific activities in the area of disaster prevention and mitigation.

3 The Relevant Role of Soft Law and Guidelines

Considering the specific nature of preparedness measures and the continuous technological evolution that requires their quick adaptation and revision, more and more international, as well as some national and non-governmental, institutions have promoted non-binding documents (guidelines, resolutions, actions plans, etc.) to increase the level of preparedness of both IOs and States. The so-called soft law instruments generally present several advantages compared to international treaties. The process of adopting these documents is usually less time-consuming than a treaty, and updating them is, in most cases, quick and uncomplicated. These key features make soft law instruments very relevant to the framework under investigation here, especially in light of the rapid and continuous evolution of the biological agents and their mutation capacity. The list of soft law instruments dealing with preparedness measures to face potential natural events that could provoke the release of CBRN substances, or to deal with pandemics, is very long. Those applicable to any kind of natural event were analysed in Chapter 4. Additional soft law instruments specifically dealing with pandemics have been adopted within the WHO:³² among them, the 'COVID-19 Strategic Preparedness and Response Plan', adopted in February 2020 and updated in January 2021, deserves special attention.³³ This document, aims to guide the public health response to COVID-19 at national and subnational levels, and to update the global strategic priorities in support of this effort. In addition, this document is complemented by the COVID-19 Operational Plan, which sets out updated operational planning guidelines to support country preparedness and response; global and regional support to accelerate equitable access to new COVID-19 tools; research and innovation priorities; as well as key performance indicators for monitoring and evaluation. Other soft law instruments address specific issues related to the type of

32 There are several of these documents, such as WHO, Pandemic Influenza Risk Management, – A WHO Guide to Inform & Harmonize National and International Preparedness and Response (2017): <https://www.who.int/influenza/preparedness/pandemic/influenza_risk_management/en/>; WHO, Summary of Key Information Practical to Countries Experiencing Outbreaks of a (H₅N₁) and other Subtypes of Avian Influenza (2016): <https://www.who.int/influenza/resources/publications/avian_influenza_packa_gv1/en/>; WHO, Pandemic Influenza Preparedness and Response, WHO Guidance Document (2009): <https://www.who.int/influenza/resources/documents/pandemic_guidance_04_2009/en/>; WHO, Checklist for Influenza Pandemic Preparedness Planning (2005): <https://www.who.int/csr/resources/publications/influenza/WHO_CDS_CSR_GIP_2005_4/en/>.

33 The COVID-19 Strategic Preparedness and Response Plan 2021 is available at <<https://www.who.int/publications/i/item/WHO-WHE-2021.02>>.

disaster, the nature of the risk, the location where such events occur, the use of military assets³⁴ and international assistance. Compared to the general soft law tools devoted to preparedness, investigated in Chapter 4, in the specific area of preparedness, the measures present a few distinctive features: they are more numerous, drafted in a more detailed manner and devoted to a very broad spectrum of thematic issues.

Numerous soft law instruments have also been adopted at the regional level. Good examples are provided by the 'Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III): Advancing Implementation of the International Health Regulations'³⁵ and by the 2019 'Statement by the Heads of the Shanghai Cooperation Organisation Member States on Joint Efforts Against the Threat of Epidemics in the SCO Space'.³⁶ Finally, between 2014 and 2018, G7 Member States made 55 commitments, including preparedness, related to health emergencies specifically.³⁷ In the recent declaration adopted in Paris in May 2019, the G7 Health Ministers confirmed their commitment to 'continue to offer assistance to 76 partner countries and regions, building on countries' expertise and existing partnership, for this implementation, in particular to strengthen and maintain core capacities required; and therefore, to help reduce the vulnerability of countries to public health emergencies'.³⁸

4 Current Challenges in the Implementation of Preparedness Measures at the National Level

The examination carried out in the previous paragraphs regarding treaties and soft law rules devoted to preparedness measures, evidences that States and IO's

34 During the COVID-19 lockdowns, the role of the armed forces was very visible in many States. The army was used to support the local police in patrolling the streets and protecting specific targets, to provide logistical support to the health system and to produce medicine and personal safety equipment.

35 WHO, Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III): Advancing implementation of the International Health Regulations (2005): <<https://iris.wpro.who.int/handle/10665.1/13654>>.

36 The statement was adopted during the Shanghai Cooperation Organisation Heads of State Council Meeting (Bishkek, 13–14 June 2019) <<http://eng.sectsc.org/documents/>>.

37 All the documents adopted by the G7, G8 and G20 are available at <<http://www.g7g20.utoronto.ca>>.

38 G7 Health Ministers Declaration: For an Inclusive, Evidence-Based and Sustainable G7 Action in Global Health (Paris, May 17, 2019): <<http://www.g7.utoronto.ca/healthmins/2019-health.html>>.

are required and/or encouraged to implement, in addition to those already listed in Chapter 4,³⁹ the following activities:⁴⁰

- regularly update emergency planning related to natural disasters, including pandemics;⁴¹
- establish legal and operational frameworks to allow both first responders and law enforcement officers (if needed) to intervene quickly and safely;⁴²
- maintain effective disease surveillance and laboratory systems with enough capacity to analyse samples (domestically or through collaborating centres);⁴³ to detect and report diseases or deaths above expected levels in all areas within the territory of a State;⁴⁴ and to report newly emerging diseases that could spread internationally;⁴⁵
- encourage rapid, systematic and timely sharing of H5N1 and other influenza viruses with human pandemic potential with WHO Collaborating Centres on Influenza and WHO H5 Reference Laboratories;⁴⁶
- ensure ongoing global monitoring, risk assessment and the development of safe and effective influenza vaccines, in conformity with the Standard Material Transfer Agreement;⁴⁷
- ensure that the capacities set forth for designated points of entry are developed;⁴⁸

39 See also M Aronsson-Storrier, in K Samuel, M Aronsson-Storrier, K Nakjavani (eds.), *The Cambridge Handbook of Disaster Risk Reduction and International Law*, (Cambridge University Press 2019).

40 Almost all of them are related to pandemics, given that those associated with natural CBRN events – such as seismic events, volcanic eruptions etc. – are mostly regulated in general agreements dealing with any kind of CBRN event and have, therefore, already been described in ch 4 by de Guttery.

41 Annex 1 to the IHR; Meeting of the States Parties to the BWC (n 18); WHO, Regional Office for Europe, 'Key Changes to Pandemic Plans by Member States of the Who European Region Based on Lessons Learned from the 2009 Pandemic' (WHO 2012).

42 Art 44, letter d) of the IHR; Annex 1 to the IHR; WHO, 'Delivering Global Health Security through Sustainable Financing' (WHO 2018).

43 Art 13, para 1 of the IHR; Annex 1 to the IHR.

44 Art 13, para 1, of the IHR; Annex 1 to the IHR.

45 Art 13, para 1, and Art 19, letter c) of the IHR; Annex 1 to the IHR.

46 World Health Assembly, Resolution WHA 60.28 (May 23, 2007); WHO; Pandemic Influenza Preparedness Framework.

47 WHO, Pandemic Influenza Preparedness Framework. The Standard Material Transfer Agreement establishes the rights and obligations of Global Influenza Surveillance and Response System.

48 Art 19, letter a), and arts 20–26 of the IHR; Annex 1 to the IHR.

- maintain the necessary infrastructure to respond to health emergencies⁴⁹ and the ability of the health system to expand beyond normal operations to meet a sudden increased demand;⁵⁰
- guarantee the availability, when needed, of enough support from specialised staff and logistical assistance, to be activated through a proper emergency organisation and through the establishment of a more extensive global, public health reserve workforce;⁵¹
- make available adequate and updated equipment, including, where appropriate, personal protective clothing, decontamination lorries, and so forth;⁵²
- adopt clear provisions on the chain of command during a pandemic event;⁵³
- deliver adequate training and exercises to prepare and test relevant staff;⁵⁴
- mobilise financial resources to facilitate implementation of IHR obligations and, possibly, the creation of a contingency fund for public health emergencies;⁵⁵
- ensure that designated National IHR Focal Points have the authority, resources, procedures, knowledge and training to communicate with all levels of their governments and on behalf of their governments, as necessary;⁵⁶
- provide coordination and capabilities at the national and regional levels;⁵⁷
- collect and disseminate information on science and technology developments, including new research in areas relevant to the BWC; exchange information about databases and networks and ensure access to such databases and networks.⁵⁸

49 Art 13, para 1, of the IHR; Annex 1 to the IHR.

50 WHO, 2013 Checklist and indicators for monitoring progress in the development of IHR core capacities in State parties.

51 Art 13 IHR, Review Committee on the Functioning of the IHR (2005) in Relation to Pandemic (H1N1) 2009.

52 Art 13, para 1, of the IHR; Annex 1 to the IHR.

53 Meeting of the States Parties to the BWC (Dec. 15, 2014) (n 18) WHO, Emergency Response Framework- II Edition (2017): <<https://apps.who.int/iris/bitstream/handle/10665/258604/9789241512299-eng.pdf?sequence=1>>.

54 G.A. Res. 60/262 (n 21); Meeting of the States Parties to the BWC (Dec. 15, 2014).

55 Art 44, letter c) of the IHR; Annex 1 to the IHR; Review Committee on the Functioning of the IHR (2005) in Relation to Pandemic (H1N1) 2009.

56 WHO Review Committee on Second Extensions for Establishing National Public Health Capacities and on IHR Implementation (2014); Annex 1 to the IHR.

57 Art 13, para 5 and Art 44 of the IHR; Annex 1 to the IHR, WHO, 'Delivering Global Health Security through Sustainable Financing', (WHO 2018).

58 Proposals for the Final Document of the Eighth Review Conference of the Biological and Toxin Weapon Convention, Submitted by the Bolivarian Republic of Venezuela on Behalf of the Group of the Non-Aligned Movement and Other States, <[https://www.unog.ch/80256EDD006B8954/\(httpAssets\)/A6E0EA72D8D9F2BFC1258061](https://www.unog.ch/80256EDD006B8954/(httpAssets)/A6E0EA72D8D9F2BFC1258061)>

It seems undisputable (particularly in light of the COVID-19 pandemic) that these measures cover almost all the different fields of action and continue to be relevant. Unfortunately, the degree of their national implementation is far from satisfactory, and the situation is often aggravated due to the fragmentation (between the national, regional and local levels) of the responsibilities in the management of health systems, as well as their high costs. In countries with a reasonably comprehensive and robust health system, it has been calculated that ‘financing improved preparedness might cost less than \$1 per person per year, not a huge sum compared to the scale of the risks to human lives and livelihoods’.⁵⁹ Participating in the 2017 Munich Security Conference, Bill Gates underlined the irony ‘that the cost of ensuring adequate pandemic preparedness worldwide is estimated at \$3.4 billion a year – yet the projected annual loss from a pandemic could run as high as \$570 billion’.⁶⁰ Although, in light of the experience of the COVID-19 pandemic, this estimate might need to be updated, considering also more general expenses not directly related to the reinforcement of the health sector (for example, transportation systems, re-organisation of the schools etc.). Clearly, the resources that need to be invested to ensure adequate preparedness are significantly less than those needed to recover from a pandemic. Reducing the costs of vaccines,⁶¹ making the acquisition contracts more transparent and facilitating access to international financial instruments to support investments in pandemic preparedness have, therefore, become key priorities for the international community. To achieve these goals, an unprecedented effort has been carried out. Firstly, new ideas and recommendations have been elaborated, especially in the framework of the recently established International Working Group on

007885AE/\$file/NAM+GROUP-BWC+-+WORKING+PAPER+VIII+REV+CONF-ISP-
ISU-S&T+FINAL+VERSION.pdf>.

59 International Working Group on Financing Preparedness (2017).

60 <<https://www.gatesfoundation.org/Media-Center/Speeches/2017/05/Bill-Gates-Munich-Security-Conference>>. According to another study, these figures are different: ‘whereas the cost of response and economic loss from a pandemic is estimated to be as much as \$60 billion per year, it is estimated that \$4.6 billion per year, or 0.65 cents per person, would be enough to address current capacity gaps in epidemic readiness’: A Glassman, B Datema and A McClelland, ‘Financing Outbreak Preparedness: Where Are We and What Next?’ (2018): <<https://www.cgdev.org/blog/financing-outbreak-preparedness-where-are-we-and-what-next>>.

61 The main aim of the Global Alliance for Vaccines and Immunisation (GAVI), launched in 2000 by the Bill and Melinda Gates Foundation, is precisely to encourage manufacturers to lower vaccine prices for the poorest countries in return for long-term, high-volume and predictable demand from those countries.

Financing Pandemic Preparedness.⁶² Secondly, extraordinary work has been carried out to increase awareness of the importance and urgency of mobilising financial resources for ‘strengthening preparedness for and prevention of pandemics’.⁶³ Several tools have been created to support national governments in financing national preparedness plans,⁶⁴ including the World Bank’s Pandemic Emergency Financing Facility;⁶⁵ the Regional Disease Surveillance Systems Enhancement Program;⁶⁶ the International Bank for Reconstruction and Development Catastrophe Deferred Drawdown Option;⁶⁷ the Global Crisis Response Platform, launched by the World Bank Group;⁶⁸ and the new options offered by the International Development Association⁶⁹ and by the Coalition for Epidemic Preparedness Innovations.⁷⁰ Although various recent

62 WHO, ‘Delivering Global Health Security through Sustainable Financing’, (WHO 2018).

63 G7 Ise-Shima Leaders’ Declaration – G7 Ise-Shima Summit, 26–27 May 2016, <<http://www.g7.utoronto.ca/summit/2016shima/ise-shima-declaration-en.pdf>>. For an analysis of the real implementation of these commitments by the G7 States, see the G7 Research Group at the Munk School of Global Affairs at Trinity College in the University of Toronto, ‘Ise-Shimag7 Interim Compliance Report, 29 May 2016 to 19 February 2017’ (2017): <<http://www.g7.utoronto.ca/evaluations/2016compliance-interim/10-2016-g7-compliance-interim-health.pdf>>.

64 See more at P L Osewe, ‘Options for financing pandemic preparedness’, (2017) 95 *Bulletin of The World Health Organisation*.

65 The PEF is a facility established for the purpose of providing financial support to eligible countries and responding agencies to help prevent a high-severity infectious disease outbreak from becoming a pandemic: The International Bank for Reconstruction and Development, the International Development Band and the World Health Organization, Pandemic Emergency Financing Facility Framework (June 27, 2017). <<http://pubdocs.worldbank.org/en/670191509025137260/PEF-Framework.pdf>>.

66 One of the specific aims of this programme is to strengthen national and regional cross-sectoral capacity for collaborative disease surveillance and epidemic preparedness in West Africa: <<https://projects.worldbank.org/en/projects-operations/project-detail/P154807>>.

67 The Development Policy Loan with a Catastrophe Deferred Drawdown Option (Cat DDO) is a contingent financing line that provides immediate liquidity to address shocks related to natural disasters and/or health-related events: <<http://pubdocs.worldbank.org/en/526461507314946994/product-note-cat-ddo-ibrd-2018.pdf>>.

68 The GCRP should provide scaled up, systematic and better coordinated support for managing and mitigating current and future crises across the spectrum of risks and vulnerabilities: World Bank Group (2016) (n 5), para 10.

69 In 2016, the IDA expressed its commitment ‘to support at least 25 IDA countries in developing pandemic preparedness plans’: IDA, Towards 2030: Investing in Growth, Resilience and Opportunity, approved by the Executive Directors of IDA on January 12, 2017 (modified on January 31, 2017): <<http://documents.worldbank.org/curated/en/348661486654455091/pdf/112728-correct-file-PUBLIC-Rpt-from-EDs-Additions-to-IDA-Resources-2-9-17-For-Disclosure.pdf>>.

70 <<https://cepi.net/>>.

studies have demonstrated that the funds available for preparedness measures continue to be insufficient, too fragmented and often not well known or easy to access by interested States,⁷¹ all these recent efforts are moving in the right direction, albeit slowly.

5 Concluding Remarks

This chapter has identified the preparedness measures that States and IO's are required or recommended to adopt to face potential natural events involving CBRN material and, in particular, to deal with pandemics, in order to reduce the number of potential victims, as well as protect the health of communities⁷² and, especially, of the most vulnerable groups. Needless to say, all these measures have to be carried out in full compliance with international law and, more specifically, with international human rights law.⁷³ The investigation has also highlighted the major challenges confronted in the implementation of these measures which, with only a few laudable exceptions,⁷⁴ is far from uniform⁷⁵ and satisfactory.⁷⁶ To increase the degree of fulfilment of all these

71 P Sands, 'Financing pandemic preparedness: from analysis to recommendations', World Bank Blogs (2017), <<https://blogs.worldbank.org/health/financing-pandemic-preparedness-analysis-recommendations>>; Glassman, Datema and McClelland (n x).

72 R Gofin, 'Preparedness and response to terrorism: A framework for public health action', (2005) 15 *European Journal of Public Health*, 100. Some of the measures are also meant to prevent serious environmental problems and major issues that might affect societal and governmental stability.

73 Although referring to the response phase, in Res. 74/270 2 April 2020), UN Doc. A/RES/74/270, the UNGA emphasised 'the need for full respect for human rights, and stresses that there is no place for any form of discrimination, racism and xenophobia in the response to the pandemic'.

74 In a few States, ad hoc structures/institutions have been created or tasked to deal with the preparedness issue. For example, in the UK the Centre for Emergency Preparedness and Response has been established within the UK's Health Protection Agency. A List of national influenza pandemic preparedness plans of the EU and EFTA countries is available at <<https://www.ecdc.europa.eu/en/seasonal-influenza/preparedness/influenza-pandemic-preparedness-plans>>.

75 Discrepancies in the degree of preparedness among States are often correlated to level of development, where 'countries with greater levels of national income have higher levels of national preparedness. 39 low-income countries have the lowest levels of preparedness, while higher-income countries score the highest capacity levels for preparedness': WHO, 'Thematic Paper on the Status of Country Preparedness Capacities. Background Report Commissioned by The Global Preparedness Monitoring Board' (2019): <https://apps.who.int/gpmb/assets/thematic_papers/tr-2.pdf>, p 17.

76 Available data indicate that 'most countries currently have low-to-moderate levels of national preparedness': *ibid* p 4. Making more specific reference to preparedness to

preparedness measures, several proposals are currently on the table, starting from the suggestion, reiterated in a recent appeal signed on 30 March 2021 by more than 20 world leaders, ‘that nations should work together towards a new international treaty for pandemic preparedness and response’ which would represent ‘a milestone in stepping up pandemic preparedness at the highest political level’.⁷⁷ Other proposals recommend the introduction of new monitoring schemes,⁷⁸ and the launch of new committees ‘to evaluate country capacity to prevent, detect and rapidly respond to public health threats independently of whether they are naturally occurring, deliberate or accidental’.⁷⁹ The logic behind these monitoring and evaluation systems is mainly to assess if, and to what extent, the preparedness obligations codified in the various treaties are being adequately implemented by the States in a timely manner. However, more recently, a new mechanism has surfaced that attempts to incentivise States to proactively implement preparedness measures. The WHO’s ‘Pandemic Influenza Preparedness Framework for the Sharing of Influenza Viruses and Access to Vaccines and Other Benefits’ is a good example of this new approach.⁸⁰ As reflected in its title, the framework

deal with new pandemics, the 2014 Report of the WHO Review Committee on Second Extensions for Establishing National Public Health Capacities and on IHR Implementation stated that, though progress had been made in many areas, there was still a multitude of unresolved or only partially resolved issues: Report of the Review Committee on Second Extensions for Establishing National Public Health Capacities and on IHR Implementation (n 55).

- 77 ‘COVID-19 shows why united action is needed for more robust international health architecture’ – Op-ed article by President Charles Michel, WHO Director-General Dr Tedros Adhanom Ghebreyesus and more than 20 world leaders: <<https://www.consilium.europa.eu/en/press/press-releases/2021/03/30/pandemic-treaty-op-ed/>>.
- 78 Within the WHO, States Parties and the Director-General were requested to regularly report to the Health Assembly on implementation of the regulations. To support and facilitate the work of Member States in preparing their national reports, the WHO developed a monitoring framework through which States Parties can monitor and evaluate their own implementation of IHR capacities in accordance with the requirements for capacity development outlined in Annex 1 of the IHR: WHO, International Health Regulations (2005) (n x), IHR Monitoring and Evaluation Framework (2018): <<https://apps.who.int/iris/bitstream/handle/10665/276651/WHO-WHE-CPI-2018.51-eng.pdf?sequence=1>>. These national reports are examined by a review committee appointed by the WHO Director-General.
- 79 WHO, Joint External Evaluation Tool: International Health Regulations (2005), Second Edition (2018): <<https://apps.who.int/iris/bitstream/handle/10665/259961/9789241550222-eng.pdf?sequence=1>>. at 8. So far, more than 100 States have undertaken a JEE (the JEE mission reports are available at <<https://www.who.int/ihr/procedures/mission-reports/en/>>), resulting in the detection of more than 6,000 critical capacity gaps: Glassman, Datema and McClelland (n x).
- 80 The framework document also introduced an additional oversight mechanism that includes the World Health Assembly, the Director-General and the independent ‘Advisory

offers several incentives (such as facilitated access to antiviral stockpiles and to vaccines in the inter-pandemic period, tiered pricing, technology transfer, and sustainable and innovative financing opportunities) to States that fulfil their preparedness obligations. This new modality of encouraging good practices deserves the highest attention,⁸¹ and it will be interesting to see if it increases compliance with preparedness measures in the near future, whether they are codified in international conventions or amount to mere soft law rules. More sophisticated mechanisms favouring the full and timely implementation of preparedness rules represent a fundamental step in the right direction,⁸² especially considering that failure to respect an international obligation is a violation of international law. Within Europe, the ECtHR has repeatedly confirmed that States have an obligation to ensure the proper organisation and functioning of their health protection systems,⁸³ and it has not hesitated to condemn States which knew about dysfunctions in their hospitals but did not undertake necessary measures to redress the situation.⁸⁴ Although these conclusions of the Court formally apply only to the specific cases brought to its attention, and refer to the violations of specific hard law rules, they impact the interpretation of the ECHR rules and, thanks to cross-fertilisation among international courts, might even have a wider influence. Therefore, the jurisprudence

Group', and it is expected to provide evidence-based reporting, assessment and recommendations regarding the functioning of the framework (Art 27).

- 81 According to a recent study of the WHO, there are currently 'too few incentives to encourage countries to invest in preparedness, and there has been limited progress in developing innovative financial motivators (e.g. matched funding from donors)': WHO (2019) (n 73).
- 82 The ongoing discussion within the WHO regarding how to continue to improve the IHR's existing monitoring system presents important evidence of the increasing attention devoted to this crucial aspect. For an example, see WHO, Meeting Report: WHO Technical Review Meeting of the Joint External Evaluation (JEE) Tool and Process, (2017): <<https://apps.who.int/iris/bitstream/handle/10665/259206/WHO-WHE-CPI-2017.53-eng.pdf?sequence=1>>.
- 83 The Court has, however, emphasised that the States' substantive positive obligations in this area are limited to a duty to establish an effective regulatory framework compelling hospitals, whether private or public, to adopt appropriate measures for the protection of patients' lives; this might arise where a systemic or structural dysfunction in hospital services results in a patient being deprived of access to life-saving emergency treatment, provided that the authorities knew or ought to have known about that risk and failed to undertake the necessary measures to prevent that risk from materialising, thus putting patients' lives in danger. ECtHR, *Case of Lopes de Sousa Fernandes v. Portugal*, (Application no. 56080/13), Judgment, 19 December 2017.
- 84 ECtHR, *Case of Lopes de Sousa Fernandes v. Portugal*, (Application no. 56080/13), Judgment, 19 December 2017. See also ECtHR, *Case of Asiye Genc v. Turkey*, (Application No. 24109/07), Judgment, 27 January 2015.

of the European Court might help to significantly stimulate States to act in a more consistent manner in the national implementation of preparedness measures, both those codified in conventions and those emerging from soft law instruments.

The analysis carried out in the preceding sections further revealed that at least some measures have attracted a high level of interest (and therefore numerous rules have been codified), while others have received less attention. Those related to the organisation of international assistance are to be listed in the first category, as there are dozens of universal, regional, sub-regional and even bilateral treaties devoted to regulating the activation of international assistance mechanisms. The plurality of options available to States for requesting international assistance is, as stated by the ILC, perfectly consistent with the discretionary power of the disaster-affected State 'to choose from other States, the United Nations, and other potential assisting actors the assistance that is most appropriate to its specific needs'.⁸⁵ The second category (grouping issues which have been neglected so far) includes the preparation of well-planned information flows during an emergency; this is unfortunate, as preparation on how to communicate risks during an extraordinary event is of the utmost importance, given the vital need to ensure public and professional confidence and trust in a crisis.⁸⁶

Finally, to remain relevant and effective, all the preparedness measures need not only to be fully implemented at the national level but also must be constantly reviewed and updated – failure to do so could have devastating impacts on human lives, wreaking havoc on long-term social and economic development. More than ever, as stated in UNGA Resolution 75/27 of December 2020, 'global health crises threaten to overwhelm already overstretched health systems, disrupt global supply chains and cause disproportionate devastation of the livelihoods of people, including women and children, and the economies of the poorest and most vulnerable countries'. Considering the innovative drugs and diagnostics currently available, as well as new early-warning technologies and technical tools, inaction can no longer be justified, whether in legal, political or moral terms.

85 Art 11 of the ILC Report.

86 The WHO has been very active in producing relevant guides and handbooks on this specific issue: see, for example, the 2008 WHO Outbreak Communication Planning Guide <<https://www.who.int/ihr/elibrary/WHOOutbreakCommsPlanngGuide.pdf>> and WHO, 'Effective Media Communications During Public Health Emergencies. A WHO Handbook' (2005): <http://www.who.int/csr/resources/publications/WHO_CDS_2005_31/en/>.

5.1 *Information on This Chapter*

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