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WHO's work in health emergencies

Strengthening preparedness for health emergencies: implementation of the International Health Regulations (2005)

The Director-General has the honour to transmit to the Seventy-fourth World Health Assembly the report of the Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 Response (see Annex).

ANNEX

**Report of the Review Committee on the Functioning of the
International Health Regulations (2005) during the COVID-19 response**

Final Draft, 30 April 2021

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PREFACE

It is just 10 years since the first Review Committee reported to the Sixty-fourth World Health Assembly on the performance of the International Health Regulations (IHR) 2005 during the influenza A (H1N1) pandemic in 2009–2010. Among other observations, the Review Committee on the Functioning of the International Health Regulations (2005) in relation to Pandemic (H1N1) 2009 concluded that: “The world is ill-prepared to respond to a severe influenza pandemic or to any similarly global, sustained and threatening public health emergency”.¹

The post-H1N1 review of the IHR drew particular attention to the many vulnerabilities in national public health capacities, limitations of scientific knowledge, difficulties in decision-making in the context of uncertainty, complexities in international cooperation and challenges in communication. It also highlighted the need to further strengthen the WHO Secretariat’s internal capacity to respond to a sustained public health emergency of international concern, such as a pandemic. Subsequent public health efforts were directed towards strengthening health systems and building capacities at the national, regional and global levels to prevent, detect and respond to health emergencies.

Today, however, it seems that those efforts were insufficient. Indeed, some of the countries that had seemed best prepared to detect and respond to a deadly virus turned out to be among the least able to prevent or control the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) nationally, internationally or both. Unprecedented levels of international collaboration in response to the pandemic have been seen alongside concerning examples of isolationism. Countries with a strong local public health approach were able to successfully suppress the spread of SARS-CoV-2. Clearly a pandemic caused by a novel pathogen against which neither a vaccine nor effective treatment exists can only be controlled by a strong and strategic public health response. Therefore, strengthening public health capacities, alongside the integration of public health within the health sector and across the whole of government, must be a high priority.

Since early September 2020, as Chair of the IHR Review Committee, I have met each week – and often several times a week – with the other 19 expert members, drawn from all regions of the world. Working in a personal capacity and not as representatives of our countries or employers, we examined each article of the IHR in the light of country and WHO responses to the spread of coronavirus disease (COVID-19) infections. Our meetings were held virtually, which was highly challenging, and we regret not having been able to meet in person. Yet over the months we built up a rapport that was truly genuine.

As we reviewed global responses to the pandemic, our Review Committee found as had earlier Review Committees, that too many countries still did not have the public health capacities in place to protect their own populations and to give timely warnings to other countries and WHO. WHO itself, as well as other international partners, also lack capacities particularly in terms of resources. The Committee addresses such capacity issues throughout this report.

There is no mechanism for monitoring the implementation of key provisions of the IHR, including those that cover human rights. That is why we have recommended a peer-review system whereby countries review their capacities together with other countries, make the results public and, crucially, support one another. It is hoped that this will provide a common accountability framework for

¹ Document A64/10, Section IV: Conclusions and recommendations, para. 31 (https://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_10-en.pdf, accessed 27 April 2021).

countries, supported by the WHO Secretariat. Since such an unprecedented health crisis impacts more than just people's health, accountability needs to be taken seriously by the whole of the government.

As we reviewed the IHR article by article, we found that much of what is in the Regulations is well considered, appropriate and meaningful in any public health emergency of international concern. However, it was clear to us that in the context of a pandemic, countries that in 2005 approved the IHR, in 2020 only applied the Regulations in part, were not sufficiently aware of them, or deliberately ignored them. The Roman maxim, *ignorantia juris non excusat* (ignorance of the law is no excuse), may hold some truth in this context. Our task though was not to apportion blame but rather to consider ways to make the implementation of the IHR more achievable, particularly to prevent, as well as effectively respond to, pandemics and other global health crises.

The current Regulations make no mention, for instance, of the importance of sharing pathogen samples and genetic sequences, digitalization, the impact of social media on the alert system or the uptake of recommendations. We also identified elements of the IHR that needed to be applied differently, which is why we have proposed some changes to the way in which the Emergency Committee functions.

As we assessed how well the Regulations were applied during the pandemic, we were acutely aware that the current pandemic was continuing. As we submit this report to the Seventy-fourth World Health Assembly in May 2021, 17 months have passed since COVID-19 first came to light in Wuhan, China, but the pandemic is far from over. We must realize that, unless this report leads to change and greater international collaboration, we shall be no better protected from the next pandemic than we were from this one.

Our brief was limited to the workings of the IHR. But in fulfilling that brief one thing became clear: however appropriate the IHR may be, the Regulations can never fully keep people safe unless all countries – their governments, communities, civil society, businesses and public health leaders – work together and with WHO and other regional and international agencies to apply them in solidarity. This fruitful collaboration can only thrive if trust and transparency are the founding principles: without these two pillars it is hard for us to envision a safer future.

I wish to acknowledge the expertise, experience and superb support of the IHR Review Committee Secretariat and my fellow Committee members. I also wish to recognize the considered comments from Member States at open meetings and the valuable contributions of the legal team, translators, WHO staff at all levels and the many experts interviewed.

Lothar H. Wieler

Chair, Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 Response
April 2021

ACRONYMS AND ABBREVIATIONS

CDC	Centre for Disease Control
DON	Disease Outbreak News
EIS	Event Information Site
ERF	Emergency Response Framework
GOARN	Global Outbreak Alert and Response Network
IANPHI	International Association of National Public Health Institutes
IHR	The International Health Regulations (2005)
IOAC	Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme
NFP	National IHR Focal Point
OHCHR	Office of the United Nations High Commissioner for Human Rights
SARS	Severe acute respiratory syndrome
UN	United Nations
UPR	Universal Periodic Review
WARN	World Alert and Response Notice
WHO	World Health Organization

EXECUTIVE SUMMARY

1. The Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 Response was convened by the WHO Director-General on 8 September 2020, at the request of Member States in resolution WHA73.1 (2020), in line with Article 50 of the IHR. The Committee's mandate was to review the functioning of the IHR during the COVID-19 response, with reference to IHR provisions as appropriate, relating but not limited to:

- outbreak alert, verification and risk assessment, information sharing and communication;
- international coordination and collaboration, including the role of the National IHR Focal Points (NFPs);
- the Emergency Committee's working modalities, and declaration of a public health emergency of international concern, including the consideration of an intermediate level of alert;
- additional health measures implemented by States Parties in relation to international travel;
- the implementation and reporting of IHR core capacities, including the possible establishment of peer review processes; and
- progress made on the implementation of recommendations by previous IHR Review Committees.

2. The Committee was composed of 20 members, selected and nominated by the Director-General from the IHR Roster of Experts, offering a wide range of expertise and adequate gender and geographical representation. Professor Lothar H. Wieler from Germany was selected as the Committee's Chair, supported by Vice-Chair Professor Lucille Blumberg from South Africa and Rapporteur Dr Preben Aavitsland from Norway. The experts worked in their personal capacity and not as representatives of their countries or employers.

3. The Review Committee conducted its work from September 2020 to April 2021, supported throughout by the IHR Review Committee Secretariat. In addition to 28 weekly virtual three-hour plenary meetings, the Committee conducted its work through four subgroups: preparedness, alert, response and governance, led respectively by Dr Jean-Marie Okwo-Bele, Dr Mark Salter, Professor James LeDuc and Professor Lothar H. Wieler. The subgroups held virtual meetings every week for one to two hours until April 2021, deliberated on specific issues, conducted interviews and reported back at the weekly plenary meetings.

4. In accordance with Article 51.2 of the IHR, the Review Committee held regular open meetings (seven in total), each attended by more than 100 designated representatives from Member States, United Nations (UN) agencies and non-State actors in official relations with WHO. The Committee also received written statements from 24 Member States' designated representatives, either individually or as part of groups of Member States, as well as from four representatives of UN agencies and non-State actors in official relations with WHO. The Committee coordinated its work with that of the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme and the Independent Panel for Pandemic Preparedness and Response through the respective secretariats and through regular calls between the Chairs and various Committee and Panel members.

5. The Committee sought to answer key questions relating to the functioning of the IHR during the COVID-19 pandemic, such as what did and did not function in the implementation of the IHR, and whether the shortcomings were due solely to a lack of proper implementation of and compliance with the IHR or whether the issues lay in the Regulations themselves. In addition, the Committee discussed what could be done to focus political attention on the IHR to achieve a much higher level of political engagement in and commitment to the fulfilment of IHR obligations. Specific questions relating to each area of work under the IHR's mandate were also identified and discussed.

Key messages

6. Following its deliberations, the Committee wishes to emphasize eight key messages across three critical areas of global health emergency preparedness and response.

Compliance and empowerment

- (1) Lack of compliance of States Parties with certain obligations under the IHR, particularly on preparedness, contributed to the COVID-19 pandemic becoming a protracted global health emergency.
- (2) Responsibility for implementing the IHR needs to be elevated to the highest level of government.
- (3) A robust accountability mechanism for evaluating and improving compliance with IHR obligations would strengthen preparedness, international cooperation and timely notifications of public health events.

Early alert, notification and response

- (1) Early alert is important for triggering timely action, notably to enable the WHO Secretariat to use the powers conferred to it by the IHR.
- (2) Early response requires better collaboration, coordination and trust.
- (3) Applying the precautionary principle in implementing travel-related measures could enable early action to be taken against an emerging pathogen with pandemic potential.

Financing and political commitment

- (1) Effective IHR implementation requires predictable and sustainable financing at both the national and international levels.
- (2) A new era of international cooperation is required to better support IHR implementation.

Recommendations

7. The Review Committee's findings and recommendations are based on the evidence available as of 31 March 2021 including almost 100 interviews. From the beginning of its deliberations, Committee members agreed that its recommendations should be comprehensive and practical rather

than aspirational, in order to set out what needs to be done to improve the functioning of the IHR. The Committee formulated 40 recommendations in 10 key areas, as follows.

Role and functioning of NFPs

(1) States Parties should enact or adapt legislation to authorize NFPs to perform their functions and to ensure that the NFP is a designated centre, not an individual which is appropriately organized, resourced and positioned within government, with sufficient seniority and authority to meaningfully engage with all relevant sectors. The mandate, position, role and resources of the NFP should be clearly defined.

(2) WHO should continue working with States Parties to strengthen the capacities of NFPs, including through regular and targeted training and workshops, especially at the national and regional levels. WHO should provide clear guidance on the functions of the NFP required by the IHR, and document and disseminate best practices for the designation and operation of NFP centres. WHO should also assess the performance and functioning of NFPs using appropriate criteria and in full transparency, and report its findings accordingly in WHO's annual report to the World Health Assembly on IHR implementation.

(3) WHO should work with States Parties to identify additional stakeholders, such as professional organizations and academic institutions, capable of supporting IHR advocacy, implementation and monitoring, in collaboration with NFPs where appropriate, so as to enhance and facilitate mutual support mechanisms and networks at the regional and global levels.

Core capacity requirements for preparedness, surveillance and response

(1) States Parties should strive to integrate the core capacities for emergency preparedness, surveillance and response within the broader health system and essential public health functions, in order to ensure that national health systems are resilient enough to function effectively during pandemics and other health emergencies. States Parties should ensure that gender equality is integrated into IHR core capacity development and monitoring.

(2) WHO should continue to provide guidance and technical support to countries on how to integrate assessment of IHR core capacities, and the subsequent development of national plans for emergency preparedness, surveillance and response, into national efforts to strengthen essential public health functions and to rebuild resilient health systems after the COVID-19 pandemic.

(3) WHO should continue to review and strengthen its tools and processes for assessing, monitoring and reporting on core capacities, taking into consideration lessons learned from the current pandemic, including functional assessments, to allow for accurate analysis and dynamic adaptation of capacities at the national and subnational levels.

Legal preparedness

(1) States Parties should periodically review existing legislation and ensure that appropriate legal frameworks are in place to: manage health risks and health emergencies; enable the establishment or designation of an NFP and the responsible authorities for IHR implementation; foster a whole-of-government approach; and support the establishment and functioning of core capacities in all the areas referred to in Articles 5 and 13 and Annex 1 of the IHR.

(2) States Parties should ensure that national legislation on emergency preparedness and response supports and is consistent with IHR provisions and IHR implementation (e.g. that the IHR have been incorporated into the domestic legal order and that implementing legislation has been adopted); that legislation is in place to protect personal data, including of travellers and migrants, during the response to public health emergencies of international concerns and pandemics; and that sufficient resources are available for the full implementation of existing and new legislation.

(3) WHO should engage with partners and continue to develop tools, technical guidance and internal capacity to support States Parties in their use of national legislation for IHR implementation consistent with its normative function under the WHO Constitution. Tools may include quick checklists, detailed process guidance, templates and model legislative text and should address the characteristics and attributes of legislation necessary to implement the IHR.

National notification and alert system

(1) States Parties should share the relevant public health information needed by WHO to assess the public health risk for a notified or verified event as soon as it becomes available, and continue to share information with WHO after notification or verification so as to allow WHO to conduct a reliable risk assessment. States Parties should communicate more proactively through WHO's Event Information Site (EIS) with both other States and the WHO Secretariat. WHO should monitor and document countries' compliance with their IHR requirements for information sharing and verification requests, and report its findings in WHO's annual report to the World Health Assembly on IHR implementation.

(2) WHO should develop a mechanism for States Parties to automatically share real-time emergency information, including genomic sequencing, needed by WHO for risk assessment, that builds on relevant regional and global digital systems.

(3) WHO should develop options to strengthen, and where appropriate, build global genomic sequencing infrastructure with a view to maximizing this critical technology as a component of future pandemic preparedness and response.

(4) As part of a One Health approach to preparedness, alert, response, and research to emerging zoonotic diseases, WHO should work closely with States Parties, in collaboration with the World Organisation for Animal Health, the Food and Agriculture Organization of the United Nations and the United Nations Environment Programme, as well as other networks and relevant stakeholders and partners, to address the risks of emergence and transmission of zoonotic diseases, and provide a coordinated rapid response and technical assistance as early as possible for acute events.

Risk assessment and information sharing

(1) In cases where WHO deems an event to be of significant risk and where the allegedly affected State Party does not respond to WHO's verification request concerning a possible event, and if other information about the event is already in the public domain, then WHO should provide that publicly available unverified information about the event, while protecting the source of that information. This will allow States Parties to: (a) have access to the signals that caused WHO concern and the status of WHO's request for verification and (b) to respond by providing information about the event in question.

(2) WHO should develop standard forms for requesting information and verification of events under relevant articles of the IHR. As part of the information and verification request, States Parties should provide the information that WHO requests as necessary for conducting its risk assessment. Such information may include, but is not limited to, microbiological information, infection epidemiology (e.g. transmission patterns, incubation period, attack rate, incidence), disease burden (e.g. clinical features, case-fatality rate) and public health and health system response capacity. WHO should disseminate these forms and provide training for NFPs on how to use them.

(3) WHO should proactively and assertively make use of the provisions of Article 11 of the IHR to share information about public health risks with States Parties (including unofficial information from reliable sources without seeking agreement from the States Parties concerned) and should report annually to the World Health Assembly on how it has complied with the implementation of Article 11, including instances of sharing unverified information with States Parties through the EIS.

(4) WHO should strengthen its informal interactions with States Parties to enable the Organization to conduct high-quality rapid risk assessments. To this end, WHO should further develop confidence- and trust-building mechanisms (e.g. periodic conferences, informal information sharing sessions) between itself and the appropriate NFPs/competent authorities, at the global, regional and country levels.

COVID-19 Emergency Committee and the determination of a public health emergency of international concern

Emergency Committee

(1) WHO should make its decision-making process for convening an Emergency Committee available on its website and ensure that it continues to be based on a risk assessment.

(2) WHO should make available to States Parties through the EIS all the information and technical documentation it provides to the Emergency Committee for each of its meetings, including findings of rapid risk assessments. WHO should allow sufficient time for Emergency Committee members to deliberate, reach a conclusion and prepare their advice to the Director-General. Emergency Committee members should not be required to reach a consensus; if there is division, divergent views should be noted in the Committee's report, consistent with Rule 12 of the Emergency Committee terms of reference.

(3) WHO should consider an open call for the IHR Roster of Experts, organized to promote gender, age, geographic and professional diversity and equality, and should generally give more consideration to gender, geography and other aspects of equality and to succession planning (identifying and appointing younger experts).

Raising the alarm

(1) WHO should adopt a more formal and clearer approach to conveying information about the Emergency Committee's meetings to States Parties and the public. To that end, WHO should provide a standard template for statements issued following each meeting, which should include:

- the information provided to the Emergency Committee and its deliberations;
- the reasons and evidence that led to the Emergency Committee's advice;
- any diverging views expressed by Emergency Committee members;
- the rationale for the determination or not of a public health emergency of international concern by the WHO Director-General;
- the issuance, modification, extension or termination of temporary recommendations;
- the categorization of recommended health measures;
- the significance of a public health emergency of international concern and the key public health response actions expected from States Parties (e.g. vaccine activities, funding, release of stockpiles); and
- the difference between the declaration of a public health emergency of international concern and the characterization of a pandemic.

(2) For events that may not meet the criteria for a public health emergency of international concern but may nonetheless require an urgent escalated public health response, WHO should actively alert the global community. Building on WHO's online Disease Outbreak News (DON), a new World Alert and Response Notice (WARN) system should be developed to inform countries of the actions required to respond rapidly to an event so as to prevent it from becoming a global crisis. This notice should contain the WHO risk assessment, shared in a manner consistent with Article 11 of the IHR, and the specific public health response actions required to prevent a public health emergency of international concern, including calling for an increased response from the international community.

Travel measures

(1) States Parties should apply a risk-based approach to implementing additional health measures in response to public health risks and acute public health events, including those determined to constitute public health emergencies of international concern, or pandemics, and should conduct regular and frequent risk assessments and re-evaluations of measures in place, based on WHO advice. More scrutiny is needed to ensure that public health measures are necessary, proportionate and non-discriminatory.

(2) States Parties should comply with Article 43 of the IHR when implementing additional health measures that restrict international traffic, following both the letter and spirit of that Article, including by strictly adhering to its timing requirements for informing WHO about the measures and the public health rationale for their implementation. Consideration should be given to clearly defining States Parties' responsibilities for implementing isolation and quarantine measures under the IHR on international cruise ships, as well as international contact tracing, and care and repatriation of international cruise ship passengers.

(3) WHO should support research efforts to strengthen the evidence base and its recommendations on the impact and advisability of travel restrictions in relation to a public health emergency of international concern or a pandemic. In this regard, WHO should examine

the term “unnecessary interference with international traffic”, to arrive at a more practical and consensual interpretation of this term in the context of travel measures during a public health emergency of international concern or a pandemic.

(4) WHO should make public its mechanism to collect and share real-time information about travel measures, in collaboration with States Parties and international partners.

Digitalization and communication

(1) WHO should develop standards for producing a digital version of the International Certificate of Vaccination and Prophylaxis, in consultation with States Parties and partners. An urgent priority is for WHO to study issues relating to digital vaccination certificates, such as mutual authentication and data security.

(2) WHO should develop norms and standards for digital technology applications relevant to international travel, ensuring individual privacy and facilitating equitable access to all persons, including those in low-income countries. This may include the development of digital technologies for contact tracing in the international context, as well as options for the digitalization of all health forms in the IHR.

(3) WHO should make greater use of digital technology for communication among NFPs and should support States Parties in strengthening information technology systems to enable rapid communication between NFPs, WHO and other States Parties.

(4) WHO and States Parties should strengthen their approaches to and capacities for information and infodemic management, risk communication and community engagement in order to build public trust in data, scientific evidence and public health measures, and to counter inaccurate information and unsubstantiated rumours. As the acronym used for a public health emergency of international concern (PHEIC) is not part of the IHR text and is often pronounced [feik] (or “fake” in English), WHO and States Parties should consider using an alternative acronym, such as PHEMIC.

Collaboration, coordination and financing

(1) States Parties should ensure adequate and sustained financing for IHR implementation at the national and subnational levels and provide adequate and sustained financing to the WHO Secretariat for its work on preventing, detecting and responding to disease outbreaks, pursuant to the recommendations of the Working Group on Sustainable Financing established by the Executive Board in January 2021.

(2) WHO should strive to ensure that there are adequate human and financial resources across all its offices at headquarters, regional and country levels for effective implementation of the Organization’s obligations under the IHR, including functions relating to: communication with NFPs; building and assessment of core capacities; notification, risk assessment and information sharing; coordination and collaboration during public health emergencies; and other relevant IHR provisions.

(3) States Parties should give WHO a clear mandate to proactively support individual States Parties when information about high-risk events becomes known to the Organization. Currently this can only be provided upon a State Party’s request. WHO should further strengthen its work

with relevant networks to coordinate and offer immediate technical support in outbreak investigations and risk assessments when information about high-risk events becomes known to the Organization, and such offers should be accepted by States Parties; where such offers are not accepted by States Parties, they should promptly provide a written explanation of their position.

(4) WHO should establish and implement clear procedures and mechanisms for intersectoral coordination and collaboration on preparedness and for alert and rapid response to acute events, including a public health emergency of international concern, and strengthen existing operations through an expanded Global Outbreak Alert and Response Network (GOARN) and by working with Emergency Medical Teams, the Global Health Cluster and other relevant networks.

(5) WHO and States Parties should consider the benefits of developing a global convention on pandemic preparedness and response in support of IHR implementation. Such a convention may include provisions for preparedness, readiness and response during a pandemic that are not addressed by the IHR, such as for example, strategies for the rapid and timely sharing of pathogens, specimens and genome sequence information for surveillance and the public health response, including for the development of effective countermeasures; provision for equitable access globally to benefits arising from sharing the above; and provisions for rapid deployment of a WHO team for early investigation and response, for maintaining the global supply chain, as well as for prevention and management of zoonotic risks as part of a One Health approach.

(6) WHO should facilitate and support efforts to build evidence and research on the effectiveness of public health and social measures during pandemics so as to underpin preparedness and readiness efforts, including the formulation of emergency guidance and advice.

Compliance and accountability

(1) Each State Party should inform WHO about the establishment of its national competent authority responsible for overall implementation of the IHR that will be recognized and held accountable for the NFP's functioning and the delivery of other IHR obligations. WHO, in consultation with Member States, should develop an accountability framework for the competent authorities responsible for implementing the IHR.

(2) WHO should work with States Parties and relevant stakeholders to develop and implement a universal periodic review mechanism to assess, report on and improve compliance with IHR requirements, and ensure accountability for the IHR obligations, through a multisectoral and whole-of-government approach.

(3) Given the experience of the COVID-19 pandemic and the need for multisectoral collaboration, WHO should further develop guidance on how to structure rigorous and all-inclusive, whole-of-government assessments and other preparedness activities, and should work with Member States to engage stakeholders beyond the health sector in order to identify and address country level gaps in preparedness.

(4) WHO should collaborate with international human rights bodies to monitor States Parties' actions during health emergencies and to regularly reiterate the importance of respecting international human rights principles, including the protection of personal data and privacy, as agreed by States Parties in the IHR.

Progress from recommendations of previous Review Committees

8. Part of the Committee's mandate was to review progress on implementing the recommendations of the three previous IHR Review Committees. Given the similarity of some of the recommendations across the four Review Committees, it is clear that, while there has been progress, implementation has been uneven and the overall pace of change since 2011 has been too slow: if the recommendations made in 2011, 2015 and 2016 had been acted upon, States Parties and WHO would have been better prepared for COVID-19. Once the COVID-19 pandemic is over, the Committee recommends a more comprehensive assessment, focusing on how previous Review Committees' recommendations have been implemented at the national and regional levels, as well as at WHO headquarters. At present, neither States Parties nor WHO have the time or the resources to undertake this work.

Looking forward

9. In the Committee's view, its 40 recommendations should be implemented without delay. However, it is for States Parties to decide which recommendations they will take forward and how. It is clear that sustainable national health systems, accessible to all, are an essential basis for global health emergency preparedness and response, and that the foundation of productive international collaboration is trust and transparency. Neither can be achieved without the other: they are two sides of the same coin. The world must be prepared to respond better to the next public health emergency of international concern, especially if it has the potential to become a pandemic. The changes necessary to enable effective implementation of the IHR require urgent action, not years of political negotiations.

1. INTRODUCTION AND BACKGROUND

1.1 A BRIEF HISTORY OF THE IHR

1. The International Health Regulations (2005) (the “IHR” or the “Regulations”) are an instrument of international law, binding on 196 States Parties, including all 194 Member States of the World Health Organization (WHO), and on the WHO Secretariat. Their purpose and scope, as mentioned in Article 2, are “to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade.”

2. The IHR’s precursor, the International Sanitary Regulations, were adopted by the Fourth World Health Assembly in 1951 and, in 1969, their name was changed to the International Health Regulations. The Regulations applied initially to six diseases, and, in 1981, these were reduced to three: cholera, plague and yellow fever. The revision process began in 1995 following the realization by countries that the risk of international spread was associated with many diseases not covered by the Regulations. It took 10 years for Member States to develop, negotiate and reach agreement on the 66 articles of the latest 2005 version of the IHR.

3. In 2001, the revision process was heavily influenced by a policy shift to the new concept of global (public) health security and by the ground-breaking resolution WHA54.14 (2001) on global health security: epidemic alert and response. In 2003, Severe acute respiratory syndrome (SARS) took the world by surprise. The WHO Secretariat and the global community took bold action without the benefit of an adequate public health and legal framework to guide their response. SARS revealed the urgent need for a new set of rules to prevent, protect against, control and provide a public health response to international disease threats. The IHR revision process became a high priority for all WHO Member States, and within 18 months a new set of regulations was agreed. The IHR were adopted unanimously by the World Health Assembly on 23 May 2005 and entered into force on 15 June 2007.

Regulations versus conventions as instruments of international law

4. The WHO Nomenclature Regulations 1967, the International Sanitary Regulations/the IHR and the Framework Convention on Tobacco Control are the only examples of WHO Member States’ use of the normative-making power to adopt legally binding instruments of international law conferred upon them by the WHO Constitution.¹ Unlike **conventions** under the WHO Constitution, which must be accepted by Member States “in accordance with its constitutional processes”² (i.e. by ratification, that is, in effect, “opt-in” agreements), **regulations** “come into force for all Members after due notice has been given of their adoption by the Health Assembly”³ unless the country notifies the Director-General that it rejects them or files a reservation to them (that is, in effect, “opt-out” agreements). In other words, Member States are automatically bound by the IHR unless they explicitly opt out of them within a specified time period. In the absence of a formal rejection or reservation, the rights and obligations imposed by the Regulations are legally binding on WHO and Member States,

¹ See Articles 19–22 of the WHO Constitution.

² Article 19 of the WHO Constitution.

³ Article 22 of the WHO Constitution.

who do not necessarily need to sign or ratify them. Their legally binding nature is rooted in the WHO Constitution, which is itself an international treaty ratified by all Member States.

1.2 THE MANDATE AND REPORT OF THE COVID-19 REVIEW COMMITTEE

5. The Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 Response was convened by the WHO Director-General on 8 September 2020, at the request of Member States in resolution WHA73.1, in line with Article 50 of the IHR. The Committee was composed of 20 members, selected and nominated by the Director-General from the IHR Roster of Experts, offering a wide range of expertise and adequate gender and geographical representation (see Appendix 1 for details). Professor Lothar H. Wieler from Germany was selected as the Committee's Chair, supported by Vice-Chair Professor Lucille Blumberg from South Africa and Rapporteur Dr Preben Aavitsland from Norway. The experts worked in their personal capacity and not as representatives of their countries or employers.

6. The Committee's mandate, based on resolution WHA73.1, was to review the functioning of the IHR during the COVID-19 response, with reference to IHR provisions as appropriate, relating but not limited to:

- outbreak alert, verification and risk assessment, information sharing and communication;
- international coordination and collaboration, including the role of the National IHR Focal Points (NFPs);
- the Emergency Committee's working modalities, and declaration of a public health emergency of international concern, including the consideration of an intermediate level of alert;
- additional health measures implemented by States Parties in relation to international travel;
- the implementation and reporting of IHR core capacities, including the possible establishment of peer review processes; and
- progress made on the implementation of recommendations by previous IHR Review Committees.

7. This present document represents the Review Committee's report, submitted to the Director-General in advance of the Seventy-fourth World Health Assembly. Although the implementation of its recommendations is vital to achieving better preparedness for the next crisis, additional lessons may yet become clear when this protracted pandemic is eventually brought under control.

2. METHODS OF WORK

8. The Review Committee conducted its work from September 2020 to April 2021, supported throughout by the IHR Review Committee Secretariat. In addition to 28 weekly virtual three-hour plenary meetings, the Committee conducted its work through four subgroups: preparedness, alert, response and governance, led respectively by Dr Jean-Marie Okwo-Bele, Dr Mark Salter, Professor James LeDuc and Professor Lothar H. Wieler. The subgroups held virtual meetings every week for one to two hours until April 2021, deliberated on specific issues, conducted interviews, and reported back during the weekly plenary meeting.

9. In accordance with Article 51.2 of the IHR, the Review Committee held regular open meetings (seven in total), each attended by more than 100 designated representatives from Member States, United Nations (UN) agencies and non-State actors in official relations with WHO. The Committee also received written statements from 24 Member States' designated representatives, either individually or as part of groups of Member States, as well as from four representatives of UN agencies and non-State actors in official relations with WHO.

10. The Committee interviewed the Chairs of all previous IHR Review Committees, the Chairs of current and previous Emergency Committees, the Chief of the Universal Periodic Review Branch of the Office of the United Nations High Commissioner for Human Rights (OHCHR), the Chair of the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme (IOAC), the Chair and Vice-Chair of the Global Outbreak and Response Network (GOARN), nine NFPs (Canada, China, Finland, Indonesia, Italy, Sierra Leone, Spain, Sri Lanka and the United States of America), researchers in the area of travel measures, and WHO staff from headquarters, all six WHO regional offices and four WHO country offices (China, Indonesia, Somalia and Thailand). All the interviewees are named in the Acknowledgements section.

11. The WHO IHR Secretariat provided the Committee with background and supporting documents on preparedness, NFP functions, travel measures, communication, financing, national legislation and the implementation of previous IHR Review Committees' recommendations. All documents presented to and reviewed by the Committee are listed in Appendix 2.

12. The Chair provided updates to Member States during the resumed Seventy-third World Health Assembly on 9 November 2020,¹ at the 148th session of the Executive Board on 12 January 2021 where he introduced the Review Committee's interim progress report,² and at a WHO information session of the Geneva-based missions of Member States to the UN on 11 March 2021.

13. The Committee coordinated its work with that of the IOAC and the Independent Panel for Pandemic Preparedness and Response through the respective secretariats and through regular calls between the Chairs and various Committee and Panel members.

14. The Committee sought to answer key questions relating to the functioning of the IHR during the COVID-19 pandemic, such as what did and did not function in the implementation of the IHR, and whether the shortcomings were due solely to a lack of proper implementation of and compliance with

¹ https://www.who.int/docs/default-source/documents/ihr/chair-statement-resumedwha73-final9nov2020.pdf?sfvrsn=142be790_2 (accessed 26 April 2021).

² Document EB148/19 (https://apps.who.int/gb/ebwha/pdf_files/EB148/B148_19-en.pdf, accessed 26 April 2021).

the IHR, or whether the issues lay in the Regulations themselves. In addition, the Committee discussed what could be done to focus political attention on the IHR to achieve a much higher level of political engagement in and commitment to the fulfilment of IHR obligations. Specific questions relating to each of the areas of work under the IHR's mandate are discussed in Section 3.

3. FINDINGS AND RECOMMENDATIONS

15. The following sections present the findings and recommendations of the Review Committee in relation to key functions of the IHR under its mandate, namely NFPs; core capacities; notification, alert, risk assessment and information sharing; the Emergency Committee and determination of a public health emergency of international concern; travel measures; and coordination, communication and collaboration. Three additional areas, not discussed by previous IHR Review Committees are also presented: legal preparedness, digitalization and communication, and compliance and accountability. For each area, the Committee presents the rationale for examining that function and the relevant IHR provisions, a summary of its findings, and its proposed recommendations.

3.1 ROLE AND FUNCTION OF NATIONAL IHR FOCAL POINTS

Rationale and relevant IHR provisions

16. Article 4.1 of the IHR requires each State Party to designate or establish an NFP and the authorities responsible for implementing health measures under the IHR and to continuously update and annually confirm contact details of the NFPs to the WHO. The NFPs should remain accessible at all times and have two functions mandated by Article 4.2 of the IHR: (1) to send urgent communications to WHO IHR Contact Points, especially event-related communications; and (2) to disseminate information from WHO to relevant sectors of the State Party and consolidate input from these sectors. The Committee sought to understand: (1) the structure, functioning and interactions of NFPs across government sectors; and (2) how their scope and mandate (as provided for by the Regulations) functioned in practice during the COVID-19 pandemic.

Findings

17. The main mandate and function of NFPs under the IHR is to collate information across relevant sectors and to communicate with WHO. The NFPs should play a central role in facilitating communications with WHO and supporting the timely sharing of information. The Committee noted that there are considerable differences in how NFPs are organized, and countries have varying views on the role of the NFP. A clear legal and governmental mandate is important for ensuring the authority of NFPs to carry out their functions and guaranteeing their adequate positioning and integration in the relevant government institutional structures and decision-making processes; however, not all countries have such a mandate in place. While States Parties are obliged to ensure that NFPs can fulfil their functions as required under Article 4 of the IHR, the Regulations do not specify how States Parties should organize their NFPs, only that they must be a “centre”. Many NFPs are still not formally established as a national office or centre; in some countries the NFP is an individual.

18. The Committee noted that NFPs often have no or weak authority, and because of that, they have difficulties engaging directly with other agencies or sectors (e.g. animal health) and triggering decision-making processes by national health authorities; furthermore, many NFPs do not participate in national emergency planning, national health committees or similar bodies. The Committee noted the results of a survey of NFPs commissioned by WHO in 2019, which identified similar challenges as above.¹

¹ <https://globalizationandhealth.biomedcentral.com/articles/10.1186/s12992-021-00675-7> (accessed 26 April 2021).

19. Based on the WHO database of NFPs, the Committee was informed that almost 80% of States Parties locate their NFPs in the Ministry of Health (n=154), while the rest are located in public health institutes or agencies. WHO regional offices have day-to-day interactions with NFPs, which is believed to have contributed to strengthening the capacities of NFPs. WHO-led regional training workshops help to build capacities, enable regular contact between NFPs and facilitate knowledge-sharing. The Committee discussed whether a network of national stakeholders (in addition to the network of NFPs), covering areas beyond the mandate of NFPs, with the seniority and ability to take policy or operational decisions in the name of the State Party, could enable a more operational and dynamic application of the IHR. It also analysed whether global or regional intergovernmental meetings or bodies would increase awareness of and better support IHR implementation and accountability. The Committee considered that networks such as the International Association of National Public Health Institutes (IANPHI) could raise awareness of the IHR at the global level and across government sectors.

Recommendations

(1) States Parties should enact or adapt legislation to authorize NFPs to perform their functions and ensure that the NFP is a designated centre, not an individual, which is appropriately organized, resourced and positioned within government, with sufficient levels of seniority and authority to meaningfully engage with all relevant sectors. The mandate, position, role and resources of the NFP should be clearly defined.

(2) WHO should continue working with States Parties to strengthen the capacities of NFPs, including through regular and targeted training and workshops, especially at the national and regional levels. WHO should provide clear guidance on the functions of the NFP as required by the IHR and document and disseminate best practices for the designation and operation of NFP centres. WHO should also assess the performance and functioning of NFPs using appropriate criteria and in full transparency, and report its findings accordingly in WHO's annual report to the World Health Assembly on IHR implementation.

(3) WHO should work with States Parties to identify additional stakeholders, such as professional organizations and academic institutions, capable of supporting IHR advocacy, implementation and monitoring, in collaboration with NFPs where appropriate, so as to enhance and facilitate mutual support mechanisms and networks at the regional and global levels.

3.2 CORE CAPACITY REQUIREMENTS FOR PREPAREDNESS, SURVEILLANCE AND RESPONSE

Rationale and relevant IHR provisions

20. Under Articles 5 and 13 of the IHR, States Parties are required to develop, strengthen and maintain surveillance and response capacities, as specified in Annex 1 of the Regulations. Article 44 2(a) requires WHO to collaborate with States Parties, upon request, to the extent possible, in "the evaluation and assessment of their public health capacities in order to facilitate the effective implementation of these Regulations." Article 54 further requires States Parties and the Director-General to report to the World Health Assembly on IHR implementation. This reporting occurs annually, as decided by the Health Assembly through resolution WHA61.2 (2008).

21. In order to facilitate reporting and to enable the assessment of public health capacities, WHO has developed an IHR monitoring and evaluation framework with four components: States Parties' self-assessment annual reporting; voluntary joint external evaluations; after action reviews; and simulation exercises. In the context of the ongoing COVID-19 pandemic, WHO has also proposed intra-action reviews, in which countries would periodically review their national and subnational COVID-19 responses.

22. The Review Committee sought to understand the extent to which the core capacities referred to in Annex 1 of the IHR are sufficient for supporting an effective response to health emergencies, including pandemic threats, whether any additional capacities are necessary and/or whether any further efforts are required to strengthen existing capacities.

Findings

23. The vast majority of countries currently have low or moderate levels of national preparedness, according to data reported to WHO by States Parties. In addition, weak capacities were reported for emergency preparedness and response at points of entry. The Review Committee noted that scores of IHR core capacities alone were not a good predictor of pandemic response.

24. However, according to WHO analysis, the dynamics created by the development of national action plans or by conducting external evaluations of IHR core capacities have fostered better multisectoral collaboration, which was beneficial for pandemic response.

25. The Committee also noted that the current tools and processes need to be revised in order to take into account the critical gaps in pandemic preparedness revealed by COVID-19 (i.e. governance, subnational gaps and capacity, essential public health functions, such as diagnosis/testing, contact tracing and treatment capacities); innovations (i.e. genomic sequencing surveillance, digital technology); the mental health effects of health crises; and national cross-sector collaboration in terms of adopting a One Health approach, addressing human, animal and environmental health.¹

26. A combination of static measurements of capacities scores, and dynamic assessments through external evaluations, simulation exercises and after-action reviews, were found to provide a more complete overview of both the existence and functionality of capacities. In addition, ignoring the gender aspects of outbreaks hinders prevention and response management by obscuring critical risk factors and trends, as well as ignoring expertise and perspective including from the front line of the COVID-19 response. All parts of the response should give due consideration to gender issues, using Article 3(1) of the IHR. A gender-sensitive approach to health security data collection/analysis and response management needs to be adopted.

27. The implementation of health measures through whole-of-society approaches by States Parties under the IHR in response to the COVID-19 pandemic has been uneven and insufficient, resulting in the dramatic disruption of health services and socioeconomic upheaval. The magnitude and challenges of COVID-19 were overwhelming for many countries, including those with high assessment scores.

¹ <https://www.who.int/news-room/q-a-detail/one-health> (accessed 27 April 2021)

Recommendations

- (1) States Parties should strive to integrate the core capacities for emergency preparedness, surveillance and response within the broader health system and essential public health functions, in order to ensure that national health systems are resilient enough to function effectively during pandemics and other health emergencies. States Parties should ensure that gender equality is integrated into IHR core capacity development and monitoring.
- (2) WHO should continue to provide guidance and technical support to countries on how to integrate assessment of IHR core capacities, and the subsequent development of national plans for emergency preparedness and response, with national efforts to strengthen essential public health functions and to rebuild resilient health systems after the COVID-19 pandemic.
- (3) WHO should continue to review and strengthen tools and processes for assessing, monitoring and reporting on core capacities, taking into consideration lessons learned from the current pandemic, including functional assessments, to allow for accurate analysis and dynamic adaptation of capacities at the national and subnational levels.

3.3 LEGAL PREPAREDNESS

Rationale and relevant IHR provisions

28. One of the four principles underpinning the IHR and detailed in Article 3.4 of the Regulations is the sovereign right of States Parties “to legislate and to implement legislation in pursuance of their health policies. In doing so they should uphold the purpose of these Regulations”. Further, in accordance with Article 44.1(d) of the IHR, States Parties should collaborate in the “formulation of proposed laws and other legal and administrative provisions for the implementation of these Regulations”. Additionally, Article 57.2 of the IHR sets forth that “nothing in these Regulations shall prevent States Parties having certain interests in common [...] from concluding special treaties or arrangements in order to facilitate the application of these Regulations”. Of equal importance is Article 59.3, which establishes the presumption that national legislation and administrative arrangements shall be reviewed and adjusted by States Parties to give full effect to the IHR.

29. Arising from these references in the IHR, the Review Committee gave consideration to “legal preparedness”, as an important sub-category of “preparedness”. The term “legal preparedness” is understood to mean: “the attainment by a public health system [...] of legal benchmarks essential to the preparedness of the public health system.”¹ “The four core elements of public health emergency legal preparedness have been identified as follows: 1) Laws – legal authorities based in science and on contemporary principles of jurisprudence; 2) Competencies – professionals who know their operating legal framework and how to apply law to public health goals; 3) Coordination – to implement law-based actions across jurisdictions and sectors; and 4) Information – on public health emergency law best practices and promising policies.”² The term “legislation” is understood to mean laws,

¹ Moulton A, Gottfried R.N, Goodman R.A, Murphy A.M, Rawson R.D. What Is Public Health Legal Preparedness? 31 (Supp. 4) J.L. MED. ETHICS 672, 672–83 (2003). (<https://www.cambridge.org/core/journals/journal-of-law-medicine-and-ethics/article/abs/what-is-public-health-legal-preparedness/E2DB14FF964CEAF6B1BA1B00346E2EB1>, accessed 27 April 2021).

² <https://www.cdc.gov/phlp/docs/legal-preparedness-competencies.PDF> (accessed 27 April 2021).

statutes or acts of parliament made under authority of a legislature and includes delegated legislation such as decrees, regulations, declarations, notices, executive orders and other legislative instruments.

30. Although no recommendations from previous IHR Review Committees mention national legislation, the Committee decided that, in the context of COVID-19, it was imperative to examine how national legislation enabled or impeded States Parties' responses. However, it was not possible to conduct a full global study on how States Parties used existing legislation and how they created new legislation during the progress of the pandemic. The Review Committee conducted interviews with legal experts from Finland, the Republic of Korea, Sierra Leone and Sri Lanka, as well as WHO staff from regional offices, and examined a study commissioned by the IHR Secretariat on the use of national legislation during COVID-19.

Findings

31. The Committee noted that during a public health emergency, legal provisions may be used to establish specific emergency response task forces or committees, and to legislate on appropriate public health response measures, including, as relevant, to limit and restrict activities and community movement, to restrict movements across borders and to enable the protection of vulnerable groups. Nearly all States Parties made use of legislation in their COVID-19 responses (e.g. for surveillance, contact tracing, data collection, management of entry and exit of citizens and/or travellers into and out of the country, and quarantine). Legislation was also used to issue orders and directions, limit activity and freedom of movement (and remote work), protect vulnerable groups, protect human rights generally, require vaccination or testing, and regulate and set standards for the health workforce and for drugs, medical equipment and telemedicine.

32. States Parties that amended their health emergency legislation in the aftermath of SARS, the H1N1 pandemic or Middle East respiratory syndrome (MERS) reported better legal preparedness to respond to COVID-19 in the survey commissioned by the IHR Secretariat. However, in many States Parties, public health legislation was outdated or not fit for purpose. For example, lack of flexibility in public financial management and procurement laws prevented fast-tracking the procurement of drugs and medical products. A coordinated whole-of-government response was difficult to achieve when different laws containing functions and powers at subnational political levels were applicable that did not draw clear lines of authority and were not aligned. In some countries, efforts to optimize the use of the health workforce were impeded by health practitioner registration laws that did not allow the emergency registration of both final-year students and retired practitioners; other countries that used such emergency registration procedures were able to mobilize additional workers rapidly to support the COVID-19 response.

33. Many States Parties passed new legislation during COVID-19. Much of this was delegated legislation used by the executive branch of governments (e.g. decrees, regulations, notices and orders) to enable swift and necessary interventions in public activity, such as imposing quarantine and isolation and requiring physical distancing and the wearing of masks. Legislation was also used to mitigate the effects of a slowdown in commercial activity on those affected, to control the release of information and address misinformation, to encourage private sector involvement, and to introduce flexibility into existing systems to enable parliaments to meet, courts to function, and governance and the rule of law to be protected. As the pandemic is not yet over, legislative work in relation to COVID-19 continues and extensive experience is being accumulated worldwide for further analysis. Many of the legal provisions introduced in response to COVID-19, however, remain emergency laws, which need to be examined in terms of respect for fundamental human rights.

34. The Committee noted that, while law reform and legislation development can be a long process, consideration of law reform well ahead of a health crisis is an important part of preparedness. Country experiences also show that the basic legislative architecture needs to be established, understood, administered, funded and fully implemented before a health emergency arises.

35. The Committee noted that Article 63 of the WHO Constitution requires Member States to promptly communicate “important laws, regulations, official reports and statistics pertaining to public health ...” to WHO, and that from 1948 to 1999, WHO compiled and published these in the International Digest of Health Legislation. However, WHO does not currently have a central repository for health-related legislation. Moreover, the provision of technical assistance to countries in relation to national legislation is conducted on an ad hoc basis across and throughout the three levels of the Organization.

Recommendations

(1) States Parties should periodically review existing legislation and ensure that appropriate legal frameworks are in place to manage health risks and health emergencies; enable the establishment or designation of an NFP and the responsible authorities for IHR implementation; foster a whole-of-government approach; and support the establishment and functioning of core capacities in all the areas referred to in Articles 5 and 13 and Annex 1 of the IHR.

(2) States Parties should ensure that national legislation on emergency preparedness and response supports and is consistent with IHR provisions and IHR implementation (e.g. that the IHR have been incorporated into the domestic legal order and that implementing legislation has been adopted); that legislation is in place to protect personal data, including of travellers and migrants, during the response to public health emergencies of international concerns and pandemics; and that sufficient resources are available for the full implementation of existing and new legislation.

(3) WHO should engage with partners and continue to develop tools, technical guidance and internal capacity to support States Parties in their use of national legislation for IHR implementation consistent with its normative function under the WHO Constitution. Tools may include quick checklists, detailed process guidance, templates and model legislative text and should address the characteristics and attributes of legislation necessary to implement the IHR.

3.4 NATIONAL NOTIFICATION AND ALERT SYSTEM

Rationale and relevant IHR provisions

36. Articles 6, 7 and 9 of the IHR contain provisions obligating States Parties to notify or report to WHO public health events that may constitute a public health emergency of international concern.¹ In accordance with Article 6.1 of the IHR, States Parties are required to determine whether a public health risk or acute public health event occurring domestically should be notified to WHO on the basis of the decision instrument in Annex 2. The IHR specify that notification must occur within 24 hours of

¹ A public health emergency of international concern is defined in Article 1 of the IHR as “an extraordinary event which is determined, as provided in these Regulations: (i) to constitute a public health risk to other States through international spread of disease and (ii) to potentially require a coordinated international response”.

assessment of public health information, but they do not specify a time limit for performing such assessment. Information about public health events may become available in the public domain some time before States Parties complete their assessment and are able to notify WHO. In such situations, the IHR require WHO to request verification from a State Party of such reports. Pursuant to Articles 9 and 10 of the IHR, States Parties are obligated to provide to WHO within 24 hours an acknowledgement of the request for verification and public health information on the status of the event referred to in WHO's request.

37. Following a notification or request for verification, States Parties must continue to provide WHO with timely, accurate and sufficiently detailed public health information in line with Articles 6.2 and 10.2 of the Regulations. Under Article 8, if an event does not require notification, particularly when information is insufficient to complete the assessment using the algorithm in Annex 2, a State Party may nevertheless keep WHO advised of the event and consult with WHO on appropriate health measures. In addition, States Parties must inform WHO of receipt of evidence of a public health risk identified outside their territory that may cause international disease spread, pursuant to Article 9.2 of the IHR.

38. Lastly, when WHO receives information of an event that may constitute a public health emergency of international concern, WHO is obligated under Article 10.3 of the IHR to offer to collaborate with the States Parties concerned in assessing the risk of international spread, the possible interference with international traffic and the adequacy of response measures. If a State Party does not accept the offer of collaboration, WHO may share the available information with other States Parties in accordance with Article 10.4 of the IHR, when this is justified by the magnitude of the public health risk, taking into account the views of the State Party concerned.

39. The purpose of these provisions is to allow WHO to rapidly assess events for their potential for international spread and to take the necessary actions, including informing other States Parties. Mandatory notification and verification by States Parties to WHO of important public health events is triggered by any event that may constitute a public health emergency of international concern, whether biological, chemical or radio-nuclear in origin or source.

40. The Committee sought to understand how the IHR alert mechanisms were utilized and adhered to in terms of event reporting and information sharing by States Parties during the COVID-19 pandemic. It considered how effective the flow of information was between the affected countries and WHO in the initial phase of the COVID-19 pandemic; what challenges WHO faced in assessing the risk and providing alerts to all countries; and whether the WHO Secretariat should have a stronger and clearer mandate to act if information is not provided by States Parties, and if so, how this mandate should be better formulated and implemented.

Findings

41. The Review Committee reviewed the flow of events and related communications between WHO and countries of relevance during the early phase of the pandemic across all WHO regions. A detailed timeline is presented in Appendix 3. This section presents the detailed information reported to the Committee through interviews with NFPs and government representatives from Canada, China, Italy, Spain and the United States of America, as well as information reported by WHO staff from headquarters and regional and country offices.

42. The Committee became aware that on 26 December 2019, a family cluster of a pulmonary disease with similar features on computed tomography was admitted to the Hubei Provincial Hospital

of Integrated Chinese and Western Medicine and was reported to the Jiangnan District Centre for Disease Control (CDC) on 27 December 2019. The Wuhan municipal CDC and the Jiangnan District CDC conducted epidemiological investigations and sample collection in the hospital on the same day. Between 27 and 29 December 2019, Hubei Provincial Hospital of Integrated Chinese and Western Medicine received a total of four pneumonia patients related to Huanan Seafood Wholesale Market, which were given an internal multidisciplinary consultation in hospital on December 29 and then immediately reported to Jiangnan District CDC, Wuhan municipal CDC and Hubei provincial CDC. After epidemiological investigation and sample collection, the patients were transferred to Jinyintan hospital. On 29 December, following clinical, epidemiological and laboratory investigation by the Wuhan city health authorities, the finding was that these cases were a viral pneumonia of unknown cause. On 30 December, Wuhan City Health Commission issued an urgent notice on treatment of patients with pneumonia of unknown cause to health institutions in the jurisdiction and put forward requirements on monitoring, reporting, treatment, prevention and control. On 31 December, the National Health Commission deployed experts to Wuhan to guide its response and to carry out an on-site investigation.

43. On 31 December 2019, the WHO Country Office and headquarters picked up information from the Wuhan Jiangnan District website and from ProMed¹ about cases of pneumonia of unknown etiology in Wuhan. On 1 January 2020, WHO Western Pacific Regional IHR Contact Point requested information on the reported cluster of atypical pneumonia cases in Wuhan from the Chinese authorities. China's NFP acknowledged the request on the same day and on 3 January, and provided preliminary information on the cluster identified in Wuhan. On 5 January, China provided updated information on the outbreak to WHO; on 9 January, China reported that a novel coronavirus was preliminarily identified as the cause of the outbreak; and on 11 January, China shared with WHO and the global scientific community the genetic sequence of the new pathogen, which facilitated the rapid development of diagnostic tests and ultimately guided the development of vaccines.

44. In mid-January 2020, China's National Health Commission organized three face-to-face meetings between Chinese experts and the WHO Country Office in China and shared information about the outbreak, investigation progress, and prevention, control and treatment measures. On 19 January, a team of Chinese experts concluded that sustained human-to-human transmission existed; they briefed the public about this finding on 20 January. During the first Emergency Committee meeting held on 22 and 23 January, China provided detailed information on the evolution of the outbreak, including a line list of the first 425 cases.

45. The Review Committee also examined notification and information sharing from affected countries in other regions, through interviews with the NFPs mentioned above.

46. The United States notified its first cases to WHO under Article 6 of the IHR on 21 January 2020. The patient had returned from Wuhan, China, on 15 January, and subsequently sought care at a medical facility in the state of Washington. Based on the patient's travel history and symptoms, health care professionals suspected the new coronavirus. A clinical specimen was collected and sent to a United States Centers for Disease Control and Prevention laboratory overnight, where the diagnosis was confirmed via its real time reverse transcription polymerase chain reaction (rRT-PCR) test.

¹ <https://promedmail.org/> (accessed 27 April 2021).

47. On 26 January 2020, Canada notified the PAHO/WHO Region of the Americas IHR Contact Point of the first presumptive confirmed case of Wuhan novel coronavirus in Toronto. The patient, who presented to Sunnybrook Health Sciences Centre on 23 January with fever and respiratory symptoms and had recent travel history to Wuhan, China, had their diagnosis confirmed by laboratory testing on 25 January 2020.

48. On 31 January 2020, Spain confirmed and notified its first COVID-19 case, a German tourist who was linked to a mild case from Shanghai, China. On 9 February, a second case involved a British tourist who was linked to a cluster in the French Alps. No secondary transmission was reported. The sporadic cases were all imported and did not generate any further transmission in Spain. None of them was related to China but rather to football players and Erasmus students returning from Italy and to scientific congresses or religious cults in other European regions.

49. Italy reported its first case on 30 January 2020 through the European Union's Early Warning Reporting System. This is not unusual since European countries have a dual reporting system – both through the European Centre for Disease Prevention and Control and through the WHO Event Information Site (EIS) via the NFP. The systems are well integrated. Of the 55 States Parties in the European Region, the first case notification came through the Early Warning Reporting System for 20 States Parties, 12 by direct notification from NFPs, and 10 in response to verification requests from the Regional IHR Contact Points, based on a media article or other source, and 12 from official government websites.

50. In addition, the Review Committee also examined the report of the WHO-led joint study mission to Wuhan from 14 January to 10 February 2021,¹ and concluded that, while a cluster of unusual pneumonia cases was first recognized in Wuhan on 26 and 27 December 2019, following subsequent reporting, confirmation and alerts, earlier cases were identified retrospectively, suggesting substantial circulation of the virus in Wuhan during the second half of December 2019. Results of sequence analyses of SARS-CoV-2 suggest end-October to early December 2019 as the time of the most recent common ancestor of SARS-CoV-2. There was no significant transmission prior to December 2019, but some virus diversity was already present in December 2019 in Wuhan, suggesting earlier circulation. Sampling and testing of bats in Hubei and of wildlife across China were negative for SARS-CoV-2. Coronaviruses isolated from bats and pangolins have been found to be most similar to SARS-CoV-2, but none are sufficiently similar to SARS-CoV-2 to serve as the direct progenitor. More research is ongoing and planned, and additional research is necessary to better understand the source and place of origin of the outbreak.

51. The first cluster of severe pneumonia cases was picked up in a large modern city with a well-developed health care system, illustrating the central role of vigilant doctors and nurses and well-integrated reporting and surveillance systems as a precondition to identifying disease events early. All animal and environment samples were collected from Huanan market on 1 January 2020, with simultaneous initial disinfection and closure of the market. No animal products were positive for the virus, but extensive environmental contamination was found. The general difficulty in identifying zoonotic spillover events early also reinforces the need to focus not only on the response side of disease outbreaks, but also on activities that prevent the emergence of new zoonotic diseases in the first place and foster a One Health approach. These activities include: regulation of wildlife farming and use; biosecurity requirements for animal farming as well as food safety; strong public health

¹ WHO-convened Global Study of Origins of SARS-CoV-2: China Part. Joint WHO-China Study. 14 January–10 February 2021 (<https://www.who.int/publications/i/item/who-convened-global-study-of-origins-of-sars-cov-2-china-part>, accessed 27 April 2021).

systems and disease surveillance support for animal handlers and food producers; and restrictions on land use and regulation of land-use patterns.

52. The Review Committee noted the growing importance of genomic sequencing for outbreak alert and response. This innovative technology is very useful for the rapid development of appropriate diagnostics, treatment and vaccines, as witnessed during the COVID-19 pandemic. Moreover, it can also help to track the course of outbreaks and identify emerging variants. If combined with genomic surveillance in the animal, food and environmental sectors, it can allow for a better understanding of the potential for spillover of zoonotic diseases and can enable better preparedness and response to emerging diseases.

Recommendations

(1) States Parties should share the relevant public health information needed by WHO to assess the public health risk for a notified or verified event as soon as it becomes available, and continue to share information with WHO after notification or verification so as to allow WHO to conduct a reliable risk assessment. States Parties should communicate more proactively through WHO's EIS with both other States and the WHO Secretariat. WHO should monitor and document countries' compliance with their IHR requirements for information sharing and verification requests, and report its findings in WHO's annual report to the World Health Assembly on IHR implementation.

(2) WHO should develop a mechanism for States Parties to automatically share real-time emergency information, including genomic sequencing, needed by WHO for risk assessment that builds on relevant regional and global digital systems.

(3) WHO should develop options to strengthen, and where appropriate, build global genomic sequencing infrastructure with a view to maximizing this critical technology as a component of future pandemic preparedness and response.

(4) As part of a One Health approach to preparedness, alert, response and research to emerging zoonotic diseases, WHO should work closely with States Parties, in collaboration with the World Organisation for Animal Health, the Food and Agriculture Organization of the United Nations and the United Nations Environment Programme, as well as other networks and relevant stakeholders and partners, to address the risks of emergence and transmission of zoonotic diseases, and provide a coordinated, rapid response and technical assistance as early as possible for acute events.

3.5 RISK ASSESSMENT AND INFORMATION SHARING

Rationale and IHR provisions

53. The Regulations require WHO to rapidly identify, verify and assess public health risks that are of potential international concern and to ensure that other States Parties are provided with the information they need to protect their populations. Articles 5.4, 9.1 and 10.1 of the IHR mandate WHO to conduct public health surveillance globally and to obtain verification from States Parties of events that have not been reported by a State and may constitute a public health emergency of international concern. Article 10.2 of the Regulations requires States Parties to acknowledge these requests and provide available public health information on the status of the event within 24 hours. Under Articles 10.4 and 11 of the IHR, WHO is obligated to provide event-related information it

receives under Articles 5–10 to all States Parties, whenever such information is necessary for States to respond to a public health risk or to prevent their populations from being affected. This information is shared through the EIS, which is a secured platform accessible to all NFPs and UN agencies with whom WHO is required to collaborate under the IHR. If a State Party refuses to respond to WHO’s verification request or fails to accept an offer of collaboration, WHO may share with other States Parties the information available to it, when justified by the magnitude of the public health risk. In accordance with Articles 6. 9.2 and 8 respectively, WHO shall not make information in notifications, reports and consultations generally available to other countries, unless circumstances justify information dissemination.

54. With regard to WHO’s risk assessment and information sharing during the COVID-19 pandemic, the Review Committee sought to understand the challenges involved in WHO’s assessment of the public health risk of this event in the early days and in providing event information to States Parties.

Findings

55. Through the same interviews mentioned in the previous section, the Committee found that, after receiving responses from China to a request for verification under Article 10 of the IHR made on 3 January 2020, WHO sent a draft EIS posting to China on 4 January 2020, asking the China NFP for review and concurrence. On 5 January, China provided feedback and concurrence, and WHO posted the information provided on the EIS and on the WHO website in Disease Outbreak News (DON).¹ Details included: the number of cases and their clinical status; the possible exposure to a seafood market; and the Wuhan authority’s response measures. The DON stated that information enabling the determination of the overall risk of this reported cluster of pneumonia of unknown etiology was limited and advised that “WHO’s recommendations on public health measures and surveillance of influenza and severe acute respiratory infections still apply”.

56. In addition, on 2 January 2020 WHO informed GOARN about the event and on 10 January 2020 convened the Scientific Technical Advisory Group for Infectious Hazards.² On 10 January 2020, WHO issued initial guidance on addressing the new disease, as well as advice on international travel.

57. WHO’s rapid risk assessment is a robust internal process enabling WHO to analyse formal and informal information about the potential for the international spread of diseases. WHO assessed the risk of the pneumonia of unknown etiology outbreaks in Wuhan on 5 January 2020 to be “high” at the national level, “moderate” at the regional level and “low” at the global level. Findings from this risk assessment were included in a DON and on the EIS shared with States Parties on 5 January 2020.

58. WHO continued to update the risk assessment as it received more information, and on 14 January the risk was assessed as “moderate” at the regional and global levels, and it was deemed necessary to refer the event for review by an Emergency Committee under the IHR to determine whether or not it constituted a public health emergency of international concern. The findings of the risk assessment were also shared via a DON on 14 January 2020. When the Emergency Committee

¹ <https://www.who.int/csr/don/05-january-2020-pneumonia-of-unkown-cause-china/en/> (accessed 27 April 2021).

² This group provides independent advice and analysis to the WHO Health Emergencies Programme on infectious hazards that may pose a potential threat to global health security.

convened by the Director-General met on 22 January 2020, the level of risk was assessed to be “very high” at the national level and “high” at the regional and global levels.

59. The quality of risk assessments depends on the information available to WHO, which was limited at the beginning of the outbreak for both affected countries and WHO. In this regard, the Committee proposed that WHO develops more standardized forms to collect the information required for conducting a realistic risk assessment. Such information should include at a minimum epidemiological data, burden of disease, and public health and health systems capacities. Box 1 presents a proposal for the type of information that such forms may include for risk assessment of an infectious disease event. Some of this information may already be known for several diseases, while other information is context specific. The proposed list is non-exhaustive and serves as a guide. Information should be shared with WHO as it becomes available, not when all the information on the list has been collected.

60. The Committee considered that WHO’s alerts and risk assessments for COVID-19 received by countries through the EIS or a DON, as well as by partners through GOARN, were useful in preparing for appropriate response measures. The Committee noted that WHO does not share its full risk assessment publicly, although significant information included in these documents (which are systematically shared in full with the Emergency Committee) is presented in a DON and an even greater amount on the EIS.

61. When discussing the IHR provisions relating to WHO’s requests for verification and its obligations to share information under the IHR, the Review Committee found that some States Parties understand that information provided by WHO under Article 11 of the IHR requires their approval; in fact, it requires only consultation, although some countries consider that such consultation also requires State Party’s approval. The Committee considered that WHO can use Article 11 of the Regulations more proactively to share even unverified information with other States Parties if such information sharing is deemed necessary to inform the risk assessment.

**Box 1 Proposal for information that may be
required for risk assessment of an infectious disease event**

Microbiological information: pathogen, whole genome sequence, diagnostic methods, vaccines

Epidemiological information: incidence, age distribution, transmission routes (including person-to-person transmission), basic reproduction number, latent period, generation time (or serial interval), period of infectiousness, secondary attack rate

Clinical information: incubation period, symptoms and signs, disease spectrum (proportion of asymptomatic infection, clinical disease, severe disease and fatality), risk factors for severe disease, disease duration, disease treatment modalities, immunity

Disease burden: the product of magnitude of the event and individual severity

Health care capacity: availability and accessibility in the affected area of the necessary medical facilities, personnel, diagnostics, vaccines and treatments

Public health capacity: capacities in the affected area for surveillance and appropriate public health measures as specified in Annex 1 of the IHR

Potential for a public health emergency of international concern: see Annex 2 of the IHR

Recommendations

- (1) In cases where WHO deems an event to be of significant risk and where the allegedly affected State Party does not respond to WHO's verification request concerning a possible event, and if other information about the event is already in the public domain, then WHO should provide that publicly available unverified information about the event, while protecting the source of that information. This will allow States Parties to: (a) have access to the signals that caused concern to WHO and the status of WHO's request for verification; and (b) respond by providing information about the event in question.
- (2) WHO should develop standard forms for requesting information and verification of events under relevant articles, clearly listing the type of information necessary for conducting its risk assessment. Such information may include, but is not limited to, microbiological information, infection epidemiology (e.g. transmission patterns, incubation period, attack rate, incidence), disease burden (e.g. clinical features, case-fatality rate) and public health and health systems response capacities. WHO should disseminate these forms and provide training for NFPs on how to use them.
- (3) WHO should proactively and assertively make use of the provisions of Article 11 of the IHR to share information about public health risks with States Parties (including unofficial information from reliable sources, without seeking agreement from the States Parties concerned) and should report annually to the World Health Assembly on how it has complied with the implementation of Article 11, including instances of sharing unverified information with States Parties through the EIS.
- (4) WHO should strengthen its informal interactions with States Parties to enable the Organization to conduct high-quality, rapid risk assessments. To this end, WHO should further develop familiarity, confidence and trust building mechanisms (e.g. periodic conferences, informal informational sessions) between itself and the appropriate NFPs/competent authorities, at the global, regional and country levels.

3.6 COVID-19 EMERGENCY COMMITTEE AND THE DETERMINATION OF A PUBLIC HEALTH EMERGENCY OF INTERNATIONAL CONCERN

Rationale and relevant IHR provisions

62. Article 1 of the IHR defines a public health emergency of international concern as “an extraordinary event which is determined, as provided in these Regulations: (i) to constitute a public health risk to other States through the international spread of disease and (ii) to potentially require a coordinated international response”. Article 1 also defines a “public health risk” as the “likelihood of an event that may affect adversely the health of human populations, with an emphasis on one which may spread internationally or may present a serious and direct danger”. Finally, “event” is defined as “a manifestation of disease or an occurrence that creates a potential for disease”, and “temporary recommendations” are defined as “non-binding advice issued by WHO pursuant to Article 15 for application on a time-limited, risk-specific basis, in response to a public health emergency of international concern, so as to prevent or reduce the international spread of disease and minimize interference with international traffic”.

63. In accordance with Article 12 of the IHR, the Director-General determines whether an event constitutes a public health emergency of international concern. The Director-General must consult

with the State Party where the event occurs for a preliminary determination, after which he/she must convene an Emergency Committee in accordance with Articles 48 and 49 of the Regulations to seek its advice on appropriate temporary recommendations.

64. In accordance with Articles 48 and 49 of the IHR, an Emergency Committee examines the information provided by the WHO Secretariat and the affected States Parties, assesses the event against the definition of a public health emergency of international concern set out in Article 1, and advises the Director-General on whether the event fits that definition, and if so, on associated temporary recommendations, as provided for by Articles 15, 17 and 18 of the IHR.

65. In making the final determination, the Director-General must consider in line with Article 12.4 of the IHR “(a) information provided by the State Party; (b) the decision instrument contained in Annex 2; (c) the advice of the Emergency Committee; (d) scientific principles as well as the available scientific evidence and other relevant information; and (e) an assessment of the risk to human health, of the risk of international spread of disease and of the risk of interference with international traffic.”

66. One of the Review Committee’s objectives was to assess the functioning of the IHR and WHO’s performance with respect to the establishment, working methods and outcomes of the COVID-19 Emergency Committee convened in January 2020. The Committee sought to understand how the Emergency Committee was set up (trigger, timing and composition); how the Emergency Committee operated (receipt and review of information, including discussions and conclusions); whether WHO communicated sufficiently about the reasons why a public health emergency of international concern was not declared after the first meeting of the Emergency Committee; how the final decision was reached; the views of the Emergency Committee’s members; the distinct roles and responsibilities of the Emergency Committee and the Director-General; the significance and consequences of the determination of a public health emergency of international concern; and the implications of the temporary recommendations issued for States Parties.

Findings

Emergency Committee

67. To inform its deliberations, the Review Committee interviewed the Chair of the COVID-19 Emergency Committee and the Chairs of previous Emergency Committees, as well as WHO staff from headquarters and regional offices, and reviewed the documentation received by the Emergency Committee for its first meetings, including WHO risk assessments and country presentations. It also reviewed an internal WHO report of a technical consultation conducted in November 2019 on the implementation of the IHR in relation to Emergency Committees and the determination of a public health emergency of international concern.

68. The Review Committee noted that WHO assessed on 5 January 2020 that the risk was high at the national level, moderate at the regional level and low at the global level. However, on 14 January, based on the availability of new and additional information, including on a case being exported from Wuhan, China, to Thailand, WHO assessed the risk at the global level as being moderate, and the event was deemed necessary to be reviewed by an Emergency Committee. Preparations for convening the Emergency Committee began with the identification of relevant experts from the IHR Roster and other WHO expert advisory panels. A WHO-led mission visited China on 20–21 January 2020 and

was informed that human-to-human transmission existed, but more analysis was required to understand the full extent of such transmission; WHO offered support to China for further analysis.¹

69. The Emergency Committee was convened on 22 January 2020² but was not able to reach a conclusion based on the available information presented. As a result, the Director-General asked for the deliberations to continue the following day and held a media briefing. When the Emergency Committee met again on 23 January 2020, several members considered that there was still insufficient information to be able to assess whether the event constituted a public health emergency of international concern or not; the Committee felt constrained by the restricted and binary nature of the determination (an event either is, or is not, a public health emergency of international concern: there is no intermediate level of warning). Because its views diverged, the Emergency Committee did not advise the Director-General that the event constituted a public health emergency of international concern but agreed to reconvene within 10 days.

70. The Director-General accepted this advice and held a second media briefing. On 23 January, he announced that he was not at that time declaring the event a public health emergency of international concern and reported that the Emergency Committee was divided over whether the outbreak of novel coronavirus constituted such an emergency. He added: “Make no mistake. This is an emergency in China, but it has not yet become a global health emergency. It may yet become one. WHO’s risk assessment is that the outbreak is a very high risk in China, and a high risk regionally and globally”.³ At that time only nine cases and no deaths had been reported outside of China.

71. After the second Emergency Committee meeting on 30 January 2020, the Director-General determined that the outbreak of 2019 Novel Coronavirus (2019-nCoV) constituted a public health emergency of international concern, presented the Committee’s advice to WHO, and issued the Committee’s advice to States Parties as temporary recommendations under the IHR.

72. In terms of process, the Review Committee was informed that, although there are no formal criteria for triggering the convening of an Emergency Committee, WHO usually considers, among other factors, whether three criteria are fulfilled: Is the situation becoming widespread? Is the situation serious/severe? Will a public health emergency of international concern declaration be helpful? More specifically, WHO’s standard risk assessment presents detailed analysis of the available information in relation to three risk questions: what is the risk for human health, what is the risk of event spreading, and what is the risk of insufficient control capacities. For each of those questions, it presents the assessment of likelihood and possible consequences. In addition, it provides detailed assessment of the hazard, exposure and context as well as specific recommended actions, among which whether or not the event should be submitted for review by an Emergency Committee. The team conducting the risk assessment includes WHO technical staff in headquarters and regions across the relevant response pillars.

73. In assessing the selection of the Emergency Committee’s members, the Review Committee found that geographical representation was adequate and noted that most members were native English speakers. Meetings were held in English, although simultaneous interpretation was available upon

¹ <https://www.who.int/china/news/detail/22-01-2020-field-visit-wuhan-china-jan-2020> (accessed 27 April 2021).

² <https://www.who.int/groups/covid-19-ih-er-emergency-committee> (accessed 27 April 2021).

³ <https://www.who.int/director-general/speeches/detail/who-director-general-s-statement-on-the-advice-of-the-ih-er-emergency-committee-on-novel-coronavirus>, (accessed 27 April 2021)

request. Regarding the IHR Roster of Experts, from which members were selected, it was noted that WHO has never made an open call for experts. And although Article 48 of the IHR allows States Parties to nominate experts to the Roster, only 82 have done so. The majority of the over 400 experts have been nominated through WHO technical networks, based on their technical expertise.

74. For each Emergency Committee meeting, members receive documentation from affected States Parties and presentations by the Secretariat on the current status of the event and response activities, and the WHO rapid risk assessment. The Review Committee assessed that, compared with the time allocated to presentations, there is little time for members to discuss and give their assessment of the event against the definition of a public health emergency of international concern and the proposed temporary recommendations.

Public health emergency of international concern

75. The Committee noted some challenges regarding the determination of a public health emergency of international concern. First, the stated criteria used by the Emergency Committee for advising on the determination leave much room for interpretation. For example, what constitutes an “extraordinary event”, and how should the level of severity for different diseases be assessed and differentiated? Is it the actual international spread or the potential risk of spread that should be considered? What does a need for “a coordinated international response” mean in a situation where countries have already implemented comprehensive response measures? Does “international response” refer to a response that occurs in several States Parties or to a response that is coordinated by several States Parties to support the affected area or country? Is a response inside the affected State that is supported by other States an international response or merely a national response supported by others? Does “response” encompass activities directly aimed at curtailing the spread of disease in the affected States, or also the preparedness activities in other States in anticipation of the potential spread of disease to these States? Does “coordinated” refer to coordination by any party, such as the affected State, nongovernmental organizations or UN agencies, or does it refer solely to the coordination by WHO under the IHR with temporary recommendations as the main tool?

76. The Review Committee also noted that the release of funding by international partners to support the public health response is often only triggered when an event is determined to be a public health emergency of international concern, which puts pressure on the Emergency Committee to advise on such a determination if funding is perceived to be a limiting factor for responding to the event. In addition, WHO procedures for assessment and listing of unlicensed vaccines or therapeutics for emergency use are primarily intended for use during a public health emergency of international concern, although the revised procedure can also be authorized by the Director-General for any public health emergency if he/she determines that this is in the best interest of public health.¹

77. In addition, the Review Committee noted a lack of clarity about the actions required after the determination of a public health emergency of international concern, and about how it should be formally ended. Following the Emergency Committee’s advice, the Director-General issues non-binding temporary recommendations, mainly for health measures in relation to travel, pursuant to Article 18 of the IHR. In practice, the temporary recommendations also encompass broad response measures, such as surveillance and clinical management. For events occurring after the full establishment of the WHO Emergencies Programme in 2016, WHO has published detailed public

¹ https://cdn.who.int/media/docs/default-source/medicines/eulprocedure_a63b659c-1cdc-4cee-aa2d-ef5dd9d94f0b.pdf?sfvrsn=55fe3ab8_7&download=true (accessed 29 April 2021).

health response advice in DONs. These appeared weekly during the COVID-19 pandemic and provided details of public health response measures recommended by WHO for the affected countries.

78. In addition, the Committee also discussed the issue of pandemic versus public health emergency of international concern. The term “pandemic” is not defined under the IHR, yet the Committee noticed that the majority of countries started to implement response measures, in particular travel restrictions, as well coordination of efforts for vaccine development and distribution, only after the event was characterized by WHO as a pandemic on 11 March 2020. This was perceived by many countries as a higher level of alert and response than the public health emergency of international concern.

79. From discussions with the WHO pandemic influenza preparedness programme, the Review Committee learned that, in the event of the emergence of a new influenza virus that causes an influenza pandemic, the single most important trigger for many of the response mechanisms that have been put in place by WHO and its partners, will be the declaration of a pandemic by WHO. This requirement is specified in many of the documents – notably legally binding advance supply agreements under the Pandemic Influenza Preparedness Framework. Without this specific declaration, many response mechanisms cannot be activated – or may be activated at considerable risk to WHO and the vulnerable populations of the world. Thus, for instance, the advance supply contracts and the response fund under the Framework are not replenishable. If they are triggered and used in advance of a pandemic, and the pandemic is not declared, supplies or funds will not be replenished, compromising the time when they are most needed.

80. The binary aspect of a public health emergency of international concern was brought to the Review Committee’s attention by the Chair of the COVID-19 Emergency Committee, the Chair of the IOAC and some of the Member States that submitted contributions to the Review Committee. In 2016, the Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response recommended the possible introduction of an intermediate level of alert, but this was not adopted by Member States in the five-year global strategic plan to improve public health preparedness and response, which took forward the recommendations of the Ebola Review Committee.¹ The COVID-19 Review Committee discussed at length the pros and cons of an intermediate level of alert, including during a consultation with Member States held on 12 January 2021. The Committee’s assessment of an intermediate level of alert is summarized in Box 2.

**Box 2. Intermediate level of alert:
summary of the Review Committee’s deliberations**

Potential benefits

- It would raise awareness and signal the need for preparedness and response.
- It may allow for better calibration, timeliness, proportionality, regionality and flexibility of response measures.
- It may enable progressive, staggered and adequate preparation, proportional to the level of risk.
- It may encourage countries to communicate promptly to help prevent the situation worsening. It would encourage transparency without countries fearing the negative consequences of potential travel restrictions linked to a public health emergency of international concern.

¹ Document A71/8 and decision WHA71(15) (2018).

- It may enable resources to be mobilized according to the seriousness of the situation.

Potential drawbacks

- Adopting another tier or tiers of public health emergency of international concern would not address the broader challenges, such as non-compliance and pressure not to declare.
- A debate about its introduction may distract attention from more pressing issues with much greater potential impact, such as the clarity of and compliance with WHO recommendations and the overall implementation of the IHR.
- It would further complicate the assessment of an event and its monitoring (already complex with the use of the decision instrument in Annex 2 of the IHR).
- An intermediate level could be misleading if an event still requires global attention but is not (yet) severe or is (still) regionally confined.
- There is an absence of clarity in the IHR or in other mechanisms on how the determination of an intermediate level would be made (would the criteria and process be decided by an Emergency Committee or by the Director-General?)
- There is an absence of clarity on the actions by WHO that such a determination would trigger (would these differ from the advice about public health events provided by WHO via DON?)
- It would not be useful if its sole purpose was to alert people.
- It should require clearly delineated response measures, provisions of resources and open sharing of information between WHO and States Parties for proper risk assessment; this is currently not consistently happening even during a public health emergency of international concern.

81. The Review Committee concluded that introducing a formal intermediate level of alert would not solve the current problem of lack of action on WHO advice and recommendations. Better risk assessments are essential, tailored regionally, and with clear recommendations concerning readiness and response actions. More assertive and open sharing of the findings of WHO's rapid risk assessment was considered necessary, either in DON or in new products such as for example a World Alert and Response Notice (WARN).

82. In addition, clarity is required with regard to the triggers for global coordination and response actions in the case of a pandemic, which may go beyond what the IHR provides for (i.e. issuing of temporary recommendations when a public health emergency of international concern is determined). Such triggers and actions could be related to coordination of global supply chains, or sharing pathogens and benefits arising from it, or coordination of research and development for developing medical countermeasures. These aspects have been raised in the light of recent discussion regarding a global treaty for pandemic preparedness and alert (see further details in Section 3.9).

Recommendations

Emergency Committee

- (1) WHO should make its decision-making process for convening an Emergency Committee available on its website and ensure that it is based on a risk assessment.
- (2) WHO should make available the information, findings of rapid risk assessments and technical documentation that it provides to the Emergency Committee for each of their meetings to all States Parties through the EIS. WHO should allow sufficient time for Emergency Committee members to deliberate and reach a conclusion and to prepare their advice to the

Director-General. Emergency Committee members should not be required to reach a consensus; if there is division, divergent views should be noted in the Committees' report, consistent with Rule 12 of the Emergency Committee terms of reference.

(3) WHO should consider an open call for the IHR Roster of Experts, organized to promote gender, age, geographic and professional diversity and equality, and should generally give more consideration to gender, geography and other aspects of equality and to succession planning (identifying and appointing younger experts).

Raising the alarm

(1) WHO should adopt a more formal and clearer approach to conveying information about the Emergency Committee's meetings to States Parties and the public. To that end, WHO should provide a standard template for statements issued following each meeting, which should include:

- the information provided to the Emergency Committee and its deliberations;
- the reasons and evidence that led to the Emergency Committee's advice;
- any diverging views expressed by Emergency Committee members;
- the rationale for the determination or not of a public health emergency of international concern by WHO;
- the issuance, modification, extension or termination of temporary recommendations;
- the categorization of recommended health measures;
- the significance of a public health emergency of international concern and the key public health response actions expected from States Parties in relation with vaccine activities, funding, release of stockpiles or others; and
- the difference between the declaration of a public health emergency of international concern and the characterization of a pandemic.

(2) For events that may not meet the criteria for a public health emergency of international concern but may nonetheless require an urgent escalated public health response, WHO should actively alert the global community. Building on WHO's online DON, a new World Alert and Response Notice (WARN) system should be developed to inform countries of the actions required to respond rapidly to events so as to prevent an event from becoming a global crisis. This notice should contain the WHO risk assessment, shared in a manner consistent with Article 11 of the IHR, and the specific public health response actions required to prevent a public health emergency of international concern, including calling for an increased response from the international community.

3.7 TRAVEL MEASURES

Rationale and relevant IHR articles

83. The revised IHR were prepared and negotiated from 1995 to 2005 on the premise that health measures in response to public health emergencies should not interfere unnecessarily with international traffic and trade. The IHR provides for various measures relating to international travel that can be implemented by States Parties following WHO's recommendation (in line with Article 18), or as requirements for public health purposes on arrival or departure (in line with Article 23). These measures span a range from those that do not restrict the movement of travellers to those that significantly do. Non-restrictive measures may include checking passengers' itinerary/travel history, and the requirement of medical examination, vaccination or other prophylaxis, or proof thereof. The more restrictive measures include exit screening of persons from affected areas, placing suspect persons under public health observation, isolation of affected persons, contact tracing of suspect or affected persons, and quarantine of suspect and isolation of infected persons. The most restrictive measures that WHO can recommend under the IHR include refusal of entry of suspect and affected persons or of unaffected persons to affected areas, or restrictions on persons from affected areas.

84. Under Article 43 of the IHR, States Parties may implement additional health measures in response to public health risks or a public health emergency of international concern if they achieve the level of protection equal to or greater than WHO recommendations. However, such measures should not be more restrictive of international traffic, or more invasive or intrusive to persons, than reasonably available alternatives that would achieve the appropriate level of health protection. Such measures should be based on scientific principles, scientific evidence of a risk to human health, information from WHO and other international bodies, or WHO advice. If these measures significantly interfere with international traffic (defined as refusal of entry or departure for longer than 24 hours) States Parties are obliged to report the health rationale to WHO within 48 hours, unless these measures are covered by temporary recommendations. WHO is required to share such information with other States and may ask States to reconsider measures after assessing the rationales provided.

85. During the COVID-19 pandemic, the world has witnessed the highest number of health measures implemented relating to international traffic since the entry into force of the revised IHR in 2007. By late January 2020, almost 20 countries had closed their borders to passengers originating from China; by August 2020, all countries had implemented some type of international traffic-related measures. The Committee examined the ways in which the IHR provisions relating to international traffic and their application by WHO and States Parties have helped or hindered the evolution and impact of the pandemic.

Findings

86. The Review Committee identified tension between the scope and purpose of the IHR (to implement response measures without unnecessary interference with international traffic, as set out in Article 2) and Article 43, which allows States Parties to implement restrictive measures if those measures achieve greater health protection than WHO recommendations. In addition, the Review Committee found it difficult to interpret or understand the term "unnecessary" in the context of a pandemic of a novel respiratory pathogen that was spreading rapidly worldwide. With regard to the application of Article 43, WHO may ask countries to reconsider measures based on information received, but there is no obligation for WHO to do so, there is no clarity on what would constitute a justifiable measure, and there is no mechanism to empower WHO to hold countries to account for measures deemed unjustified. The Committee was informed that WHO has not challenged any country

that reported additional health measures, since these were understood in the context of containment and with the aim of protecting their own population from an unknown pathogen.

87. The Review Committee was informed that WHO issued travel advice on 10 January 2020 relating to reports of the outbreak of pneumonia caused by a new coronavirus in China.¹ Recognizing the limited available information at that time, WHO nevertheless recommended the use of the usual personal protection measures against diseases caused by a respiratory pathogen, and recommended that countries ensure the implementation of IHR core capacities at points of entry. WHO advised against imposing any travel or trade restrictions on China, based on the information then available, and in line with the spirit of the IHR to avoid unnecessary interference with international traffic and trade. Information about monitoring travel measures is presented in the timeline in Appendix 3.

88. Updating its travel advice on 24 January 2020, WHO recommended exit screening of passengers from affected areas.² The temporary recommendations issued after the determination of a public health emergency of international concern on 30 January 2020 continued to emphasize the exit screening at international airports and ports in China, “with the aim of early detection of symptomatic travellers for further evaluation and treatment, while minimizing interference with international traffic”³. At that stage, asymptomatic persons were not confirmed as a potential source of infection. In addition, WHO recommended that all countries should prepare for containment (including active surveillance, early detection, isolation and case management, contact tracing and prevention of onward spread of infection with the new coronavirus), and should report to WHO additional health measures taken under Article 43 of the IHR.

89. WHO then started to monitor the measures implemented by States Parties, and from 6 February 2020 it provided weekly updates on its EIS to all NFPs about these measures and their public health rationale. By 6 February 2020, a week after the determination of the public health emergency of international concern, 22 countries had implemented restrictive travel measures relating to the novel coronavirus, including China, which suspended all outgoing travel from Wuhan and introduced internal movement restrictions. In addition, seven countries in the WHO Region of the Americas, one in the European Region and eight in the Western Pacific Region refused entry to passengers from China and other affected areas, although many still allowed nationals to return from those areas. A further five countries implemented screening and/or quarantine, or suspension of visas for any incoming traveller from the affected areas in China. By 18 March 2020, a week after the outbreak was characterized by WHO as a pandemic,⁴ 89 countries had implemented travel measures relating to COVID-19, 32 more than the previous week. By the end of August 2020, all 194 Member States of WHO had implemented some travel-related measures, and many countries continued to update WHO regularly on these measures.

¹ <https://www.who.int/news-room/articles-detail/who-advice-for-international-travel-and-trade-in-relation-to-the-outbreak-of-pneumonia-caused-by-a-new-coronavirus-in-china>, (accessed 27 April 2021).

² <https://www.who.int/news-room/articles-detail/updated-who-advice-for-international-traffic-in-relation-to-the-outbreak-of-the-novel-coronavirus-2019-ncov-24-jan/>, (accessed 27 April 2021).

³ [https://www.who.int/news/item/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-\(2019-ncov\)](https://www.who.int/news/item/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov)), (accessed 30 April 2021).

⁴ <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>, (accessed 27 April 2021).

90. The Review Committee noted the need for more specific criteria against which the States Parties have to report additional health measures (e.g. results of a risk assessment, public health indicators used, scientific evaluations of measures, sectors consulted, and integration in the national response strategy). States Parties who provided WHO with public health rationales for their restrictive measures cited the following factors:

- WHO's determination of the public health emergency of international concern, WHO's advice that the outbreak was still in the containment phase, and the temporary recommendations to all countries to prepare for containment;
- the fact that SARS-CoV-2 was a novel virus, and that knowledge about its characteristics was limited, including the animal source, the duration of its persistence in the environment, and its potential for mutation;
- vulnerabilities relating to limited laboratory capacities; concerns about overburdening public health response capacities, given the concomitant influenza season in many countries; and limited capacities to quarantine returning travellers;
- specific vulnerabilities facing small island developing States and other low- and middle-income countries with limited public health response capacities;
- the limited knowledge about the epidemiology of the disease, including about the ability of transmission from asymptomatic carriers, and the full clinical spectrum of the disease and its severity;
- the lack of a specific treatment or vaccine; and
- perceived public anxiety, and perceived threats to safety and security due to large volumes of travel for business and tourism from the affected areas.

91. The Review Committee discussed in depth whether WHO should have recommended more restrictive travel measures at the beginning of the outbreak, given the level of information available at that time. The Committee noted the need for clearer communication in WHO's early travel-related recommendations. The Committee also noted that the initial call for containment should have warranted advice for travel restrictions, including recommendations for quarantine upon arrival. However, the Committee debated whether more widespread use of border measures, such as entry screening, and/or entry quarantine would have delayed (not entirely prevented) the exponential growth phase in other countries and thus allowing for better preparation for handling the epidemic in those countries.

92. The Committee was informed that a Cochrane systematic review commissioned by WHO on the effect of travel measures during the early stage of the COVID-19 pandemic had found some evidence that travel restrictions contributed to a delay and reduction in international transmission, but such effects seem to have been short-lived and context specific. The exit bans imposed by China appear to have limited the initial geographical and quantitative spread and were considered useful in buying a certain amount of time for other countries to be better prepared and to better control the disease spread combined with domestic measures. Overall, however, the quality of the evidence reviewed was low many of the studies included in the analysis were modelling studies, with varying limitations in the assumptions made in the models, and many studies were "preprints" (not peer-reviewed). The methods and measures examined were different, making comparison difficult, and studies did not take into

account the influence of other domestic measures on the reduction of transmission. The effectiveness of travel restrictions requires more good quality research to consider the factors that may influence effects of restrictions and what combination of measures is the most effective.

93. The Committee considered that, in general, countries that implemented early travel restrictions to reduce importation, as part of a comprehensive package of public health and social measures, kept the incidence of the virus to a low level. However, the longer-term effects of maintaining these restrictions after the early phases need to be considered in the larger context of balancing economic impacts with public health gains. The risk-based approach proposed by WHO to guide decisions in relation to travel measures should continue to be promoted.

94. Furthermore, the Committee found that during the COVID-19 pandemic decisions on travel measures were often taken only at the political level, without technical input, and outside the remit of health authorities. Moreover, the pandemic characterization led to more restrictions as many countries activated their pandemic preparedness plans; this raises particular challenges for risk communication, because on the one hand the IHR provides a legal framework for issuing recommendations for travel measure during a public health emergency of international concern, but on the other hand it is unclear what measures should be triggered by a pandemic characterization.

95. The Committee concluded that effectiveness of travel measures depends on the timing of implementation of travel restrictions (the earlier the better), the scale of travel restrictions, contextual factors (e.g. epidemiology, geography, travel patterns), and concurrent implementation of public health and social measures. Testing should be an integral part of the public health response to identify those for isolation and quarantine in order to reduce transmission.

96. In balancing the impact of public health measures on international travel and trade and public health risk, it is important to consider the precautionary (or “no regrets”) principle when dealing with a new pathogen, where new evidence is emerging as the situation evolves. This principle allows WHO and States Parties to implement precautionary measures when scientific evidence about an emerging and probable high risk is uncertain. The key variables to consider when applying precautionary measures include the certainty of the scientific evidence, the severity of the risk, the magnitude of the stakes, and the potential costs of action or inaction. When faced with a new pathogen with a clear potential for causing a severe pandemic, both the risk, the stakes and the costs of inaction are very high. However, precautionary measures should still be proportional to the perceived threat, non-discriminatory, continuously reviewed in the light of new knowledge and applied in accordance with the IHR, including Article 3.

97. The Review Committee also appraised the challenge posed by large cruise ships, which may create conditions for potential exposure of a large number of passengers residing in close quarters and pose challenges for their isolation and quarantine. This represents novel challenges to States Parties and conveyance operators on a scale not envisioned in the IHR.

98. The Committee sought to examine the extent to which the human rights provisions in the IHR have been followed in the response to COVID-19, including travel measures implemented. Though there was no time for a full analysis of this topic, the Committee deliberated at length about areas for future analysis concerning protecting human rights during health emergencies. Anecdotal evidence was noted with respect to potential human rights issues in relation to the application of public health and social measures at points of entry, for example, possible violence against women, children and elderly people during quarantine. Examples of human rights violations due to strict border closures include crew members not being allowed to leave their ships and sailors, migrant workers and

nationals not being allowed to return to their home country: people were stranded for weeks, even months, often resulting in severe economic hardship and extreme mental distress.

Recommendations

- (1) States Parties should apply a risk-based approach to implementing additional health measures in response to public health risks and acute public health events, including those determined to constitute public health emergencies of international concern, or pandemics, and should conduct regular and frequent risk assessments and re-evaluations of measures in place, based on WHO advice. More scrutiny is needed to ensure that public health measures are necessary, proportionate and non-discriminatory.
- (2) States Parties should comply with Article 43 of the IHR when implementing additional health measures that restrict international traffic, following both the letter and spirit of that Article, including by strictly adhering to its timing requirements for informing WHO about the measures and the public health rationale for their implementation. Consideration should be given to clearly defining States Parties' responsibilities for implementing isolation and quarantine measures under the IHR on international cruise ships, as well as international contact tracing, and care and repatriation of international cruise ship passengers.
- (3) WHO should support research efforts to strengthen the evidence base and its recommendations on the impact and advisability of travel restrictions in relation to a public health emergency of international concern or a pandemic. In this regard, WHO should examine the term "unnecessary interference with international traffic", to arrive at a more practical and consensual interpretation of this term in the context of travel measures during a public health emergency of international concern or a pandemic.
- (4) WHO should make public its mechanism to collect and share real-time information about travel measures, in collaboration with States Parties and international partners.

3.8 DIGITALIZATION AND COMMUNICATION

Rationale and relevant IHR provisions

99. Digital technology has evolved tremendously since the IHR entered into force in 2007. Information can be gathered with surveillance systems more rapidly and signals can be detected from other sources outside the health sector. In addition to rapid data collection, data analyses and sharing of these analyses provide ample opportunities to speed up the response processes. In order to take full advantage of all the opportunities digital technology presents to enable implementation of the IHR, now and in the years to come, solutions must be found to address both data security and data privacy issues.

100. Many of the processes and actions provided for by the IHR require adaptation to reflect these developments. For example, under the IHR, international travellers' vaccination status is currently recorded on the International Certificate of Vaccination and Prophylaxis, following the model presented in Annex 6 of the IHR. This certificate predates even the 2005 revisions of the IHR and has always been in paper format. While some countries have introduced digital verification of yellow fever vaccination status through online cross-border verification of the certificate, the practice has not been widely adopted. Articles 31, 36, 40, 43 and Annexes 6 and 7 of the IHR relate to vaccination

requirements for international travellers. Provisions relating to the issuance of either temporary or standing recommendations under the Regulations, allowing countries to require proof of vaccination for international travellers as a condition of entry or exit, are found in Articles 12, 15, 18 and 53.

Findings

101. With the advent of the COVID-19 pandemic, many countries introduced requirements for travellers to produce documentation showing that they had either been vaccinated for COVID-19, or have SARS-CoV-2 antibodies from past infection, or are free from acute infection based on laboratory tests for SARS-CoV-2 nucleic acid or antigen. Following its sixth meeting in January 2021,¹ the Emergency Committee advised WHO to coordinate with relevant stakeholders to develop standards for digital documentation of travel-related COVID-19 risk reduction measures on interoperable digital platforms. The Review Committee was also informed of the WHO interim position paper,² requested by the Emergency Committee in January 2021, which presents the scientific, ethical, legal and technological considerations regarding proof of COVID-19 vaccination for international travellers. The paper states that at that time (February 2021), national authorities and conveyance operators should not require proof of COVID-19 vaccination for international travel as a condition for departure or entry, because there was still a critical lack of knowledge regarding the efficacy of vaccination in reducing transmission, and because of the limited availability of vaccines worldwide. The Review Committee recognizes that WHO's position may change in the near future, given the rapidly evolving situation in April 2021 when this report was finalized.

102. The Committee noted concerns regarding inequitable access to digital technology, including in low-income countries and poor people in all countries, as well as concerns about protecting personal health information. Digital solutions also leave behind those who are reluctant to use the internet or a mobile telephone. Several commercial and nongovernmental organizations and UN agencies are actively developing digital health applications, including applications to document vaccination status. Rapid advances are being made in digitalizing medical records, relevant public health information and other personal information in formats appropriate for global use.

103. While these are significant issues requiring global discussion, the speed of international development necessitates urgent WHO engagement, leadership and consensus building. There is an urgent need for the development of internationally recognized norms and standards for the use of digital technology in the application of IHR. The Committee was briefed by WHO about the Smart Vaccination Certificate Working Group, which is focusing on establishing standards for a digital vaccination certificate to support vaccines against COVID-19 and other immunizations.

Communication and information sharing

104. The COVID-19 pandemic has affected every corner of the world and will continue to do so for the foreseeable future. Clear, accurate and timely information is required to strengthen the public health response. Rapid communication via social media started to grow soon after the entry into force of the Regulations, and is now so prevalent that information may become available on social media before States Parties can officially communicate with WHO. Also, and more importantly, the content

¹ [https://www.who.int/news/item/15-01-2021-statement-on-the-sixth-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-coronavirus-disease-\(covid-19\)-pandemic](https://www.who.int/news/item/15-01-2021-statement-on-the-sixth-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-coronavirus-disease-(covid-19)-pandemic), (accessed 27 April 2021).

² <https://www.who.int/news-room/articles-detail/interim-position-paper-considerations-regarding-proof-of-covid-19-vaccination-for-international-travellers>, , (accessed 27 April 2021).

shared on social media is not always accurate. The rapid rise in information, combined with information gaps and confusing messaging, have all together created an information epidemic or "infodemic" that is making it hard for people to know what actions to take. This confusion leads to risk-taking behaviours and is eroding social cohesion and trust in health authorities – protracting the pandemic.

105. WHO plays an essential role in providing accurate and timely scientific information, including tools to manage the overabundance of information and misinformation in the fight against COVID-19. The Review Committee recognizes WHO's role in providing authoritative, evidence-based, timely and up-to date information and advice, both to coordinate the global response and to support national responses. WHO's strong leadership in this role during the COVID-19 pandemic (e.g. regular press conferences and global webinars through the newly established WHO Information Network for Epidemics (EPI-WIN),¹ development of information products such as myth busters, and the creation of a new discipline called infodemic management) has helped build public confidence in its advice. However, the Committee noted that coordinating communication across the three levels of the Organization remains challenging.

106. During interviews with the WHO communications team, concerns were raised that the term "pandemic" is not used in the IHR, although it could potentially serve as an alert declaration, not only in relation to influenza, but for diseases caused by many different pathogens. The Review Committee also noted concerns about the pronunciation of PHEIC (an acronym traditionally used for public health emergency of international concern, but which is not part of the IHR text) as "fake", given the widespread use of the term "fake news". Regardless of the pronunciation, the Committee noted that more needs to be done to communicate the definition of a public health emergency of international and the consequences following the declaration of such an emergency. As noted in previous sections, many countries responded more actively when the pandemic was announced than when the public health emergency of international concern was determined.

Recommendations

- (1) WHO should develop standards for producing a digital version of the International Certificate of Vaccination and Prophylaxis, in consultation with States Parties and partners. An urgent priority is for WHO to study issues relating to digital vaccination certificates, such as mutual authentication and data security.
- (2) WHO should develop norms and standards for digital technology applications relevant to international travel, ensuring individual privacy and facilitating equitable access to all persons, including those in low-income countries. This may include the development of digital technologies for contact tracing in the international context, as well as options for the digitalization of all health forms in the IHR.
- (3) WHO should make greater use of digital technology for communication among NFPs and support States Parties in strengthening information technology systems to ensure rapid communication between NFPs, WHO and other States Parties.
- (4) WHO and States Parties should strengthen their approaches and capacities for information and infodemic management, risk communication and community engagement, in

¹ <https://www.who.int/teams/risk-communication/epi-win-updates> (accessed 27 April 2021).

order to build public trust in data, scientific evidence and public health measures, and to counter inaccurate information and unsubstantiated rumours. As the acronym used for a public health emergency of international concern (PHEIC) is not part of the IHR text and is often pronounced [feik] (or “fake” in English), WHO and States Parties should consider using an alternative such as PHEMIC.

3.9 COLLABORATION, COORDINATION AND FINANCING

Rationale and relevant IHR provisions

107. Effective implementation of the Regulations requires States Parties to collaborate actively with each other and with WHO. International cooperation and coordination are the foundations of the IHR and feature prominently in many focus areas of this report, including in the discussions of NFPs, notification, verification and risk assessment. Recognizing that many sectors of society are affected by the pandemic and involved in the global response, the Review Committee sought to understand the extent to which IHR enabled collaboration and coordination in the global response to COVID-19. The relevant IHR provisions are Articles 14 (cooperation between WHO, other intergovernmental organizations and international bodies); 44 (States Parties’ mutual collaboration and assistance and WHO’s collaboration and assistance with States Parties); and 46 (transport and handling of biological substances, reagents and materials for diagnostic purposes).

108. The Review Committee sought to understand how well the current mechanisms of collaboration and coordination for global outbreak response functioned during COVID-19. How well did WHO collaborate with States Parties during the pandemic, including in the provision or facilitation of technical cooperation and logistical support, and what needs to be changed or improved? In particular, the Committee wanted to understand the financing challenges in implementing WHO’s obligations under the IHR and requested an assessment of the current level of financing and gaps in WHO’s IHR-related work.

Findings

Collaboration and coordination

109. The Regulations include detailed provisions about identifying and reporting serious threats to international health. However, they are not specific about response coordination and deployment, other than requiring the issuance of temporary recommendations if the event constitutes a public health emergency of international concern, which usually refer only to travel measures as provided in Article 18 of the IHR. Article 44 provides for collaboration and assistance among States Parties and with WHO but gives no practical guidance on facilitating this. The Committee noted that the Regulations could be more relevant by providing guidance for the coordination of national and international response measures, beyond issuing temporary recommendations.

110. In recent years, WHO has often relied on GOARN to support the global response to health emergencies. The Committee interviewed the Chair and Vice-Chair of GOARN and was informed of a survey among the Network’s Steering Committee on the challenges involved in responding to COVID-19, the Network’s engagement in implementing relevant IRH provisions, and options for the future.

111. GOARN's Steering Committee recognized the IHR as a key element of outbreak preparedness, readiness, alert and response, but noted that their application needs to be strengthened at the community, national and international levels. Priorities include: developing a digitalized system for early outbreak detection, rapid alert and confirmation; strengthening community-based rapid response capabilities; improving emergency management decision-making processes based on robust scientific advice, risk communications and accountability under the IHR; and modifying the evaluation of core capacities for alert and response to reflect both country and international abilities to manage outbreaks and pandemics.

112. There is general agreement that a stronger GOARN could support better implementation of the relevant IHR provisions, particularly with regards to rapid risk assessment, implementation of acute outbreak response activities, international coordination of outbreak response, and preparedness and readiness planning and monitoring. Respondents suggested the need for a change in GOARN's current outbreak response model to further prioritize in-country and regional capacity building, including through effective application of standard operating procedures for coordination of partners' work both in-country and internationally.

113. In relation to the determination of a public health emergency of international concern, the survey also indicated support for an approach that facilitates the earliest possible alerts, robust scientific and technical advice to countries, and triggered rapid response activities, including international coordination and technical support where appropriate. Other areas for further consideration include: the operability of global financial support for partners' capacities for preparedness and response; and options for integrating IHR capacities within the health system and for improving assessment of capacities without burdening States Parties

114. Coordination of the global COVID-19 response through the UN Crisis Management Team was activated at the request of the UN Secretary-General on 4 February 2020, led by WHO. As the only body able to bring such a comprehensive array of UN organizations together, it played an important role in facilitating coherence across the UN system by sharing relevant information.

115. The Committee was also appraised of WHO's Emergencies Response Framework (ERF),¹ which sets out how WHO manages its risk assessment, grading and operational response to public health events in support of Member States and affected communities. It focuses on scaling up and managing response activities for acute events and emergencies, outlines roles and responsibilities across the three levels of the Organization and takes an all-hazards approach. It is currently being updated to respond to the IOAC's recommendations and lessons learned from the Ebola virus disease outbreaks, COVID-19 and other emergencies. Examining the relations between the Regulations and the ERF, the Committee noted that the ERF's health information covers surveillance, epidemiology, information products, analytics and data management. Another component of the ERF is the coordination and engagement of partners, including GOARN, emergency medical teams, the Global Health Cluster and partner liaisons.

116. The emergence of a novel pathogen requires the rapid development of diagnostic assays, therapeutic interventions, vaccine development and prophylactic measures. In order to engage the global scientific community in these response efforts, it is essential that pathogens, their genomic sequence, and relevant clinical samples be made available to the global medical research community. The Review Committee noted that rapid scientific discoveries about COVID-19 and the development

¹ <https://www.who.int/hac/about/erf/en/> (accessed 27 April 2021).

of diagnostic tests were made possible by China's sharing of the genomic sequence of the novel coronavirus with WHO on 11 January 2020. The original virus isolate was, however, not shared internationally. While Article 46 of the IHR requires States Parties to facilitate the transport and handling of biological substances, the Regulations do not specifically mandate the rapid sharing of biological samples for risk assessment.

117. In considering how the Regulations could facilitate the rapid sharing of scientific findings and samples within the global scientific community under Article 6, the Review Committee noted that a new mechanism for cooperation in this area is needed. Lessons learned from pandemic influenza preparedness planning might offer a useful model for further development. In addition, other relevant provisions of international law, such as the Nagoya Protocol, need to be considered. The Committee was apprised of ongoing discussions about how this and other elements may strengthen global coordination and collaboration during global health emergencies and pandemics through a possible global convention on pandemic preparedness and response (see Box 3).

Box 3. Possible contents of a future global convention on pandemic preparedness and response

Article 57 of the Regulations addresses the IHR's relationship with other international agreements, including treaties and conventions. The Article calls for relevant instruments to be interpreted so as to be compatible with the IHR and anticipates the possibility of "concluding special treaties or arrangements" to facilitate the application of the IHR.

Any future pandemic convention or treaty would not only have to be compatible with Article 57 but should also have the effect of strengthening it.

Currently, the IHR mostly concern detection, assessment and alert provisions, as well as preparedness provisions relating to core capacities. Several other elements are required for a comprehensive global architecture for emergency preparedness and response but fall outside the scope of the IHR:

Prevention and protection

- Prevention and management of zoonotic risks as part of a One Health approach: identifying and preventing zoonotic spill over from wildlife and livestock. This would require coordination with environmental treaties on issues such as biodiversity and trade in endangered species.
- All-of-government and whole-of-society coordinated national health emergency planning and preparedness, including stockpiling arrangements. This would partly overlap with IHR core capacities but would strengthen implementation. Links sharing of influenza viruses with human pandemic potential with benefit-sharing for countries in need; e.g. access to pandemic antivirals and vaccines and assistance with capacity building in areas that are closely related to IHR core capacities

Emergency response

- Structured systems for sharing information about and samples of pathogens, genome sequences and the resulting benefits for public health purposes.
- Enhanced international cooperation on and accessibility of research and innovation for health emergencies, including with respect to the effectiveness of public health and social measures.
- Increased and economically optimized local, regional and global capacities to manufacture and distribute medical supplies and countermeasures.
- A global health emergency workforce, capable of rapid deployment nationally, regionally and internationally, to detect and respond to health emergencies.
- Protection of the integrity of global supply chains.

Enabling factors

- Sustained and predictable funding of health emergency preparedness and response, including from domestic budgets and innovative financing arrangements.
- Peer and expert review processes and mutual accountability mechanisms.
- Measures to promote compliance, e.g. verification and inspection procedures, enhanced dispute settlement

- processes, sanctions for non-compliance.
- Processes for structured normative development, e.g. protocols and guidelines as in the Framework Convention on Tobacco Control.
 - Clear prioritization of public health protection in the treaty's objective.
 - Protection of human rights and privacy in context of surveillance technology, artificial intelligence and use of big data for public health purposes

Financing

118. The Regulations do not put enough emphasis on each State Party's financial responsibility nor do they highlight the role of international funding in raising awareness and creating common understanding of the IHR and in strengthening States Parties' core capacities.

119. The Review Committee requested an analysis of WHO's current level of funding for IHR-related functions across the Organization. The Committee received a functional mapping of current staffing levels implementing WHO's obligations under the IHR, at headquarters and in five of the six WHO regional offices (no data from the Regional Office for Africa). The exercise mapped WHO staff implementing WHO's obligations under the IHR in relation to: NFPs, core capacities; surveillance, notification, verification and information sharing; public health response; the Emergency Committee and determination of a public health emergency of international concern; additional health measures; the Review Committee and standing recommendations; reporting; and specific requirements for vector-borne diseases. From this preliminary analysis it appears that about 194 full time equivalents are providing WHO's IHR-related functions, with a total estimated staff cost of about US\$ 42 million. This analysis did not include WHO staff involved in public health response activities at headquarters and in some of the regions since this varies from event to event; and it does not include funding for activities such as workshops, guidance development and country support activities. The largest proportion of staff is involved in functions relating to monitoring IHR core capacities and surveillance, notification and verification.

120. This is the first time to the Review Committee's knowledge that such a comprehensive functional human resource mapping of IHR-related functions has been conducted. However, since there was no baseline, nor a standard guidance of the minimum staffing requirements for all IHR-related functions, and often the requirements vary from event to event, these estimates reflect only a snapshot of the current situation. More analysis is required to fully understand the current funding of IHR-related functions, their allocation and potential gaps.

Recommendations

(1) States Parties should ensure adequate and sustained financing for IHR implementation at the national and subnational levels and provide adequate and sustained financing to the WHO Secretariat for its work on preventing, detecting and responding to disease outbreaks, pursuant to the recommendations of the Working Group on Sustainable Financing established by the Executive Board in January 2021.

(2) WHO should strive to ensure that there are adequate human and financial resources across all its offices at the headquarters, regional and country levels for effective implementation of the Organization's obligations under the IHR across the functions related to communication with NFPs, building and assessment of core capacities, notification, risk assessment and information sharing, coordination and collaboration during public health emergencies alert and response, and other relevant IHR provisions.

(3) States Parties should give WHO a clear mandate to proactively support individual States Parties when information about high-risk events becomes known to the Organization. Currently, this can only be provided upon a State Party's request. WHO should further strengthen its work with relevant networks to coordinate and offer immediate technical support in outbreak investigations and risk assessments when information about high-risk events becomes known to the Organization, and such offers should be accepted by States Parties; where such offers are not accepted by States Parties, they should promptly provide an explanation in writing of their position.

(4) WHO should establish and implement clear procedures and mechanisms for intersectoral coordination and collaboration on preparedness and for alert and rapid response to acute events, including a public health emergency of international concern, and strengthen existing operations through an expanded GOARN and by working with the Emergency Medical Teams, the Global Health Cluster and other relevant networks.

(5) WHO and States Parties should consider the benefits of developing a global convention on pandemic preparedness and response in support of IHR implementation. Such a convention may include provisions for preparedness, readiness and response during a pandemic that are not addressed by the IHR, such as for example, strategies for the rapid and timely sharing of pathogens, specimens and genome sequence information for surveillance and the public health response, including for the development of effective countermeasures; provision for equitable access globally to benefits arising from sharing the above; and provisions for rapid deployment of a WHO team for early investigation and response, for maintaining the global supply chain, as well as for prevention and management of zoonotic risks as part of a One Health approach.

(6) WHO should facilitate and support efforts to build evidence and research on effectiveness of public health and social measures during pandemics, so as to underpin preparedness and readiness efforts, including the formulation of emergency guidance and advice.

3.10 COMPLIANCE AND ACCOUNTABILITY

121. The Review Committee noted that the IHR do not contain a clear mechanism to monitor compliance with the many obligations of WHO and States Parties, other than a static self-assessment report on core capacities and a WHO Secretariat annual implementation report to the World Health Assembly. These reports, and the tools used to produce them, do not assess how well individual countries have performed on specific IHR functions and obligations, nor do they assess how well WHO has met its obligations under the IHR. The Committee repeatedly noted that “the IHR has no teeth”; that is, there are no enforcement mechanisms.

122. The overall responsibility for implementing the IHR lies with the States Parties. The Committee noted that effective implementation of the IHR requires many functions that are not within the narrow mandate of the NFPs, such as multisectoral coordination of emergency preparedness and response and collaborative risk assessment. The distinction between the NFP and the competent authority of a State Party (i.e. “the authorities responsible within its respective jurisdiction for the implementation of health measures under these Regulations”, as defined in Article 4.1 of the IHR) is often blurred, resulting in confusion about the roles and expectations of NFPs, and a perceived challenge in ensuring States Parties' accountability for all their obligations under the IHR. Current assessments indicate that few States Parties are coordinating actions across relevant sectors through a whole-of-government or whole-of-society approach. The absence of a dedicated national entity, with enough authority and a

clear mandate to lead IHR implementation, is seen as a significant constraint to effective implementation of the Regulations at the national and subnational levels.

123. The Review Committee was appraised of the Universal Periodic Review (UPR) process developed and implemented by the Human Rights Council¹ to assess how countries comply with their human rights obligations (see Box 4). The Committee considers that a similar peer-review mechanism may be useful in improving emergency preparedness and response, as well as compliance with States Parties' legal obligations under the Regulations. The UPR in the human rights arena has been shown to foster intersectoral coordination, whole-of-government approaches and civil society engagement, to encourage participation and good practices, and to link implementation of its recommendations with the Sustainable Development Goals and other government agendas. These outcomes are highly relevant to the need to raise awareness of and foster intersectoral cooperation for IHR implementation at the country level.

Box 4. UPR: a mechanism to improve human rights

- The UPR is a comprehensive, State-to-State peer review mechanism of the Human Rights Council introduced in 2006 to review the fulfilment of the human rights obligations and commitments of all 193 UN Member States once every four and a half years. The mechanism provides an opportunity for States to demonstrate actions taken to improve their human rights situation and reminds States of their responsibility to fully respect all human rights and fundamental freedoms, thus aiming to improve the human rights situation in all countries and address human rights violations wherever they occur.
- The UPR process includes three two-week sessions per year during which representatives of 14 countries are interviewed by representatives of other countries for 3.5 hours. Countries are visited by experts selected from the OHCHR roster of human rights experts. Each country review is supported by three documents:
 - (1) a national report no more than 10 000 words by the country concerned (often led by the foreign ministry, the judiciary or a combination of ministries);
 - (2) an OHCHR document based on independent human rights experts' reports regarding compliance with international treaties, norms and standards; and
 - (3) a document summarizing general comments made by other relevant stakeholders, including nongovernmental organizations. OHCHR's emphasis is on the reliability and objectivity of the information. For each country review, a working group prepares recommendations that must be approved by the Council. A reviewed country may then choose either to accept or to "note" each recommendation; the ones that are accepted are expected to be implemented.
- The UPR is an open, transparent and participatory process focused on systemic improvement, it does not go into specific situations. Member States tend to act on recommendations they have accepted, sometimes with support from other Member States, but there are no consequences for inaction. For its part, OHCHR tends to give more prominence to good practices, as an encouragement to others. The UPR is increasingly used by humanitarian bodies to flag abuses under the Geneva Conventions, and sometimes issues relating to health as a human right.

Recommendations

- (1) Each State Party should inform WHO about the establishment of its national competent authority responsible for overall implementation of the IHR that will be recognized and held accountable for the NFP's functionality and the delivery of other IHR obligations. WHO, in

¹ <https://www.ohchr.org/en/hrbodies/upr/pages/uprmain.aspx> (accessed 27 April 2021).

consultation with Member States, should develop an accountability framework for the competent authorities responsible for implementing the IHR.

(2) WHO should work with States Parties and relevant stakeholder to develop and implement a universal periodic review mechanism to assess, report on and improve compliance with IHR requirements, and ensure accountability for the IHR obligations, through a multisectoral and whole-of-government approach.

(3) Given the experience of the COVID-19 pandemic and the need for multisectoral collaboration, WHO should further develop guidance on how to structure rigorous and all-inclusive, whole-of-government assessments and other preparedness activities, and should work with Member States to engage stakeholders beyond the health sector in order to identify and address country level gaps in preparedness.

(4) WHO should collaborate with international human rights bodies to monitor States Parties' actions during health emergencies and to regularly reiterate the importance of responses that respect international human rights principles, including the protection of personal data and privacy as agreed by States Parties in the IHR.

4. IMPLEMENTATION OF RECOMMENDATIONS FROM PREVIOUS IHR REVIEW COMMITTEES

124. Part of the Committee's mandate was to review progress on implementing the recommendations of the three previous IHR Review Committees. Given the similarity of some of the recommendations across the four Review Committees, it is clear that while there has been progress, implementation has been uneven and the overall pace of change since 2011 has been too slow: if the recommendations made in 2011, 2015 and 2016 had been acted on, States Parties and WHO would have been better prepared for COVID-19.

4.1 Review Committee on the Functioning of the International Health Regulations (2005) in relation to Pandemic (H1N1) 2009

125. The report of the H1N1 Review Committee,¹ presented to the Sixty-fourth World Health Assembly in May 2011, highlighted a number of issues that are still relevant and need to be addressed. For example, the report states: "The most important structural shortcoming of the IHR is the lack of enforceable sanctions. For example, if a country fails to explain why it has adopted more restrictive traffic and trade measures than those recommended by WHO, no legal consequences follow." It continues: "The Committee also noted systemic difficulties that confronted WHO and some shortcomings on the part of WHO: The absence of a consistent, measurable and understandable depiction of severity of the pandemic. Even if the definition of a pandemic depends exclusively on spread, its degree of severity affects policy choices, personal decisions and the public interest. What is needed is a proper assessment of severity at national and subnational levels. These data would inform WHO's analysis of the global situation as it evolves, allowing WHO to provide timely information to Member States. The Committee does, however, recognize that characterization of severity is complex and difficult to operationalize."

126. The Health Assembly noted the report and through resolution WHA64.1 (2011)² it requested the Director-General to report on progress made in the implementation of these recommendations at the Sixty-sixth World Health Assembly. The progress report in document A66/16³ highlights the progress and remaining gaps and concludes that: "The Review Committee's report and recommendations continue to play an important role in shaping the Secretariat's work, both in terms of the implementation of the International Health Regulations (2005) and the preparations for future influenza pandemics. While the value of the Regulations to countries and to the Secretariat continues to be demonstrated during the management of acute public health events, such as the ongoing illness associated with a novel coronavirus, at the same time the extension procedures have kept international attention on the establishment of the national capacities. At a time of global economic crisis, when rapid progress is challenged by limitations in technical, human and financial resources, the Regulations remain a focus for commitment to maintain and improve global public health security."

127. Progress on implementing the 15 recommendations has been further analysed by WHO, and that analysis is currently being peer reviewed before publication. An overview was presented to the

¹ Document A64/10 (https://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_10-en.pdf?ua=1, accessed 27 April 2021).

² Resolution WHA64.1 (2011) (https://apps.who.int/gb/ebwha/pdf_files/WHA64-REC1/A64_REC1-en.pdf, accessed 27 April 2021).

³ Document A66/16 (https://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_16-en.pdf, accessed 27 April 2021).

COVID-19 Review Committee, which noted that substantial progress has been made on the following recommendations:

- strengthening WHO's internal capacity for sustained response through the establishment of the WHO Health Emergencies Programme, with its revised Emergency Response Framework and the regular implementation of an incident management system for public health emergencies;
- improving practices for the appointment of an Emergency Committee through development of standard procedures for the convening of an Emergency Committee;
- revising pandemic preparedness guidance;
- creating a contingency fund for public health emergencies; and
- reaching agreement on sharing of samples of influenza viruses and access to flu vaccines and other benefits through the adoption in 2013 of the Pandemic Influenza Preparedness Framework.¹

128. Moderate progress has been made in five areas: enhancing the EIS; ensuring the necessary resources for all NFPs; developing and applying measures to assess severity; streamlining the management of guidance documents; and developing and implementing a strategic, Organization-wide communications policy. Limited progress has been made in three areas: reinforcing evidence-based decisions on international travel and trade; encouraging advance agreements for vaccine distribution and delivery; and establishing a more extensive global public health reserve workforce. This Review Committee notes with concern the persistent challenges relating to WHO's role in the areas of travel and trade, which have been apparent during the COVID-19 response.

4.2 Review Committee on Second Extensions for Establishing National Public Health Capacities and on IHR Implementation

129. This Review Committee's report,² submitted to the Sixty-eighth World Health Assembly in May 2015, highlights that "though progress had been made in many areas [...] countries in every Region still face significant challenges to fully implement the IHR. Key impediments to IHR implementation include: insufficient authority/capacity of NFPs; the misconception that implementation of the IHR is the sole responsibility of ministries of health; limited involvement/awareness of sectors other than human health; [...] a perception that implementation is a rigid, legal process with less emphasis on operational implications and learning from experience". In resolution WHA68.5 (2015),³ the Health Assembly commended the Review Committee for its report, urged Member States to support the implementation of the recommendations contained therein, and requested the Director-General to present an update on progress made to the Sixty-ninth World Health Assembly.

¹ Document A66/17 (https://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_17-en.pdf, accessed 27 April 2021).

² Document A68/22 Add.1 (https://apps.who.int/gb/ebwha/pdf_files/WHA68/A68_22Add1-en.pdf, accessed 27 April 2021).

³ Resolution WHA68.5 (2015) (https://apps.who.int/gb/ebwha/pdf_files/WHA68-REC1/A68_R1_REC1-en.pdf#page=27, accessed 27 April 2021).

130. In response to the recommendation that “the Director-General consider a variety of approaches for the shorter- and longer-term assessment and development of IHR core capacities”,¹ WHO developed the IHR monitoring and evaluation framework for core capacities that, in addition to the annual reporting, covers after action reviews, simulation exercises and independent external evaluations.²

4.3. Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response

131. The Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response made 12 recommendations in its report submitted to the Sixty-ninth World Health Assembly in May 2016.³ Through decision WHA69(14) (2016), the Health Assembly requested the Director-General “to develop for the consideration of the Regional Committees in 2016 a draft global implementation plan for the recommendations of the Review Committee [...] and [...] to submit a final version of the draft global implementation plan for the consideration of the Executive Board at its 140th session”.⁴ This global plan was developed following discussions at all six regional committees in 2017, a web-based consultation conducted by the WHO Secretariat between 19 September and 13 October 2017, and a consultation with Member States, through the Permanent Missions in Geneva, on 8 November 2017. The plan was noted with appreciation by the Seventy-first World Health Assembly in decision WHA71(15) (2018) but its uptake has not been significant. The IHR annual implementation report at the Seventy-second World Health Assembly assessed progress made on specific areas of the five-year global strategic plan.⁵

132. The COVID-19 Review Committee noted progress in implementing comprehensive assessments of core capacities through the IHR monitoring and evaluation framework but also noted that the COVID-19 pandemic had revealed some limitations of this approach: many countries with higher assessment scores had difficulties in responding effectively to outbreaks. The Committee also noted progress in WHO’s approach to risk communication and information sharing, in particular its standardized approach to conducting rapid risk assessment for events that may constitute a public health emergency of international concern (as mentioned in Section 3.6). In addition, the Strategic and Technical Advisory Group for Infectious Hazards was established in 2018 as a technical advisory group to the WHO Health Emergencies Programme,⁶ and EPI-WIN was established in 2020 as a mechanism for sharing public health information and combatting misinformation relating to the COVID-19 pandemic.⁷ Progress has been made on implementing the Ebola Review Committee’s recommendations on strengthening NFPs, supporting the most vulnerable countries, and strengthening health systems capacities, although there is still much room for improvement.

¹ Document A68/22 Add.1, paragraph 43 (https://apps.who.int/gb/ebwha/pdf_files/WHA68/A68_22Add1-en.pdf, accessed 29 April 2021).

² Annex of Document A69/20. (https://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_20-en.pdf, accessed 27 April 2021).

³ Document A69/21 (https://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_21-en.pdf, accessed 27 April 2021).

⁴ Decision WHA69(14) (2016) (https://apps.who.int/gb/ebwha/pdf_files/WHA69-REC1/A69_2016_REC1-en.pdf#page=85, accessed 27 April 2021).

⁵ Document A72/8 (https://apps.who.int/gb/ebwha/pdf_files/WHA72/A72_8-en.pdf, accessed 27 April 2021).

⁶ https://www.who.int/emergencies/diseases/strategic-and-technical-advisory-group-for-infectious-hazards/STAG_IH_TOR_2018_final.pdf?ua=1 (accessed 29 April 2021).

⁷ <https://www.who.int/teams/risk-communication/about-epi-win> (accessed 29 April 2021).

133. When the COVID-19 pandemic is over, the Committee recommends a more comprehensive assessment of progress on implementing previous Review Committees' recommendations, focusing on how recommendations have been implemented at the national and regional levels, as well as at WHO headquarters. At present, neither States Parties nor WHO have the time or the resources to undertake this work.

5. CONCLUSIONS

134. When the IHR came into force on 15 July 2007, two years after being adopted by the World Health Assembly, WHO announced that “the global community has a new legal framework to better manage its collective defences to detect disease events and to respond to public health risks and emergencies”.¹ The IHR’s main priority is to prevent and control the international spread of public health risks.

135. The Regulations are a pillar of global health security: the foundations of the global architecture for monitoring and responding to public health risks and emergencies, involving countries, institutions and networks coordinated by WHO. The purpose of this architecture is to enable the prevention, detection and containment of health risks and threats, the strengthening of national capacities for that purpose, and the coordination of a global alert and response system.

136. Despite being almost 20 years in the making, none of these elements have proved sufficient against SARS-CoV-2: since the beginning of 2020 we have been experiencing a prolonged crisis, unprecedented in our recent history. Millions of lives have been lost; countless more people are suffering from long-term complications of the acute disease and many others struggle with poor mental health resulting from months of anxiety, depression, deprivation and social isolation. Children have missed months of in-school education, adults have missed months of work, and existing inequities have been exacerbated. Travel has been severely disrupted. Most countries’ economies experienced significant declines in 2020, and governments have accumulated levels of debt not seen since the Second World War.

137. As the Review Committee submits this report, the pandemic has yet to be brought under control and most countries still have travel restrictions in place. Highly effective vaccines, whose speed of development has been remarkable, offer reason for optimism. However, the uneven and inequitable roll-out of vaccines globally and the recognition of rare safety concerns, the difficulty in sustaining effective implementation of other public health measures, and the emergence of new virus variants mean that control of the pandemic will take some time. While a few countries have reached and maintained a low incidence of COVID-19, several countries are entering new waves driven by new virus variants first identified in December 2020, some of which have a higher reproductive rate and may cause more severe disease and/or may escape vaccine immunity.

More than a year on, why is the world still struggling to contain SARS-CoV-2?

138. The reasons for the inadequate response are multiple. Importantly, and also highlighted by all other IHR Review Committees, national capacity to prevent, detect and respond to public health risks is weak. In the context of COVID-19, the time it took to identify person-to-person transmission of the virus, as well as asymptomatic and pre-symptomatic transmission was probably one of the most challenging elements for an appropriate response at the beginning of the outbreak; WHO could have used its own risk assessments, without waiting for approval from affected countries or advice from the Emergency Committee. Another important factor was the collective inability to foresee early on in the pandemic’s evolution the health, social and economic impact in the absence of effective pharmacological interventions. The world was not prepared for this kind of threat.

¹ <https://www.who.int/ihr/publications/ihrbrief1en.pdf> (accessed 29 April 2021).

139. If the global community had known in the first days of 2020 what it knows now, it is likely that WHO, many governments and other stakeholders would have acted differently. While acknowledging the many unknowns at the beginning of the outbreak, the Review Committee considers that stronger implementation of public health measures as advised by WHO might have delayed the international spread and prevented the early exponential growth of the outbreak, and thus given governments time to put in place strategies to keep the epidemic under control and reduce the disease burden.

Key messages

140. Despite the challenges and constraints of working virtually and conducting its review during the pandemic, the Review Committee undertook an article-by-article assessment of the functioning of the IHR in the context of COVID-19. The findings and recommendations in Chapter 3 are based on the evidence available as of 31 March 2021 and almost 100 interviews. From the beginning of its deliberations, Review Committee members agreed that its recommendations should be comprehensive and practical rather than aspirational, in order to set out what needs to be done to improve the functioning of the IHR. Over the course of its deliberations, the Committee formulated the following key messages.

Compliance and empowerment

1. Lack of compliance of States Parties with certain obligations under the IHR, particularly on preparedness, contributed to the COVID-19 pandemic becoming a protracted global health emergency.

141. The Review Committee noted that the design of the IHR fulfils its original aim as the agreed framework for global health protection, and no major amendments are needed at this stage. However, the interpretation and implementation of the IHR by both WHO and States Parties is suboptimal. The inherent tension between the IHR's aim to protect health and the need to protect economies by avoiding travel and trade restrictions has been noted by the Committee as the most important factor limiting compliance with the Regulations. While the Committee did not have time to review each State Party's implementation of and compliance with IHR, from the interviews and assessments conducted, the Committee considers that a renewed commitment is needed for the IHR provisions relating to:

- notification and requests for verification of health risks using the existing mechanisms for information sharing between countries and WHO;
- provision of sufficient information by countries to WHO to enable an informed risk assessment;
- more assertive use by WHO of relevant IHR provisions to enable early risk communication for public health alert and response purposes;
- more systematic approach in the convening and deliberations of the Emergency Committee;
- prioritization of policies for health protection over protection of travel and trade; and
- more assertive use of the precautionary principle in the face of new pathogens.

2. Responsibility for implementing the IHR needs to be elevated to the highest level of government.

142. In interviews and written statements, Member States and experts expressed overwhelming support for the IHR as a cornerstone of international public health and health security law. However this support is in stark contrast to reality: compliance with the Regulations is uneven and the Regulations have not been mainstreamed across all government institutions. It is critical that the Regulations receive high-level political support. More clarity is needed on the respective roles and responsibilities of States Parties and WHO, as well as a clearer understanding of the limitations faced by WHO in implementing the provisions of the IHR.

3. A robust accountability mechanism for evaluating and improving compliance with IHR obligations would strengthen preparedness, international cooperation and timely notifications of public health events.

143. The Review Committee noted that the static assessment of core capacities has in many instances provided a false sense of security, and even some countries with high scores for capacities assessed with the existing tools did not respond adequately. A robust system of compliance evaluation was cited during interviews as a potential approach to strengthening the overall framework of the Regulations and its credibility as a legal instrument. The Committee strongly recommends that WHO and States Parties implement a mandatory universal peer-review mechanism to foster whole-of-government and whole-of-society accountability for implementing the IHR. This should be complemented by the establishment of a national authority empowered to elevate health issues to high-level political processes and to oversee the implementation of the IHR across the government.

Early alert, notification and response

4. Early alert is important for triggering timely action, including enabling WHO Secretariat to use the powers conferred to it by the IHR.

144. Early sharing of information about events that may pose a risk of international spread of disease is essential for effective implementation of the IHR. It enables WHO to conduct an informed risk assessment and alert the world to measures needed to prevent such a risk from becoming either a public health emergency of international concern or a pandemic. WHO tends not to share unverified information because States Parties tend to interpret a request for verification as a request for approval to share the unverified information for which verification was requested. With the inexorable rise of social media, such information is often already in the public domain, and WHO should be more assertive and proactive in its use of Articles 8 and 11 of the Regulations. WHO's communication of public health risks needs to be more agile and updated on a regular basis so that emergencies are responded to as early as possible. Countries should also inform WHO as soon as possible about all events that require notification under the IHR, in order to enable WHO to make rapid and evidence-informed risk assessments and to allow rapid alert and response.

5. Early response requires better collaboration, coordination and trust.

145. The Committee also noted the legal constraints on the technical support that WHO can offer to countries for early verification, assessment and early response: this support can only be provided at the request of countries. WHO should be empowered to collaborate with an expanded GOARN, IANPHI and other networks to offer immediate technical support in outbreak investigations and risk assessment; where such offers are not accepted by States Parties, they should promptly explain their

position. In addition, WHO should share its risk assessments publicly, and should develop a mechanism allowing open sharing of information about events under review.

6. Applying the precautionary principle in implementing travel-related measures would enable early action against an emerging pathogen with pandemic potential.

146. When dealing with a new pathogen, with new evidence emerging as the situation evolves, the focus should be on protecting health, sharing essential information and specimens, and accepting that travel and trade restrictions may be required. Communication and guidance from WHO are vital to inform countries' responses. Building on WHO's online DON, a new World Alert and Response Notice (WARN) should be developed to inform countries of the actions required to respond rapidly to events so as to prevent an event from becoming a crisis. The Regulations allow this even in the absence of advice from an Emergency Committee.

Financing and political commitment

7. Effective IHR implementation requires predictable and sustainable financing at both the national and international levels.

147. All previous IHR Review Committees have highlighted the need for sufficient resources to be allocated to the implementation of the Regulations. This includes national funding for strengthening detection and response capacities in the context of building resilient health systems. It also includes funding for WHO to enable it to lead an effective, coordinated, multisectoral and evidence-based global effort to protect humanity against public health risks. Financial support mechanisms are also needed for some countries.

8. A new era of international cooperation is required to better support IHR implementation.

148. The IHR are concerned with early detection, alert, preparedness and response but, as the COVID-19 pandemic has shown, much stronger and better coordinated global action is needed to improve both preparedness and response. Important issues not specifically mentioned in the IHR include: rapid sharing of genetic information and samples of pathogens of concern, with adequate access to benefit; research coordination; development of and equitable access to medical countermeasures and other innovations developed during emergencies; ensuring a global workforce to support rapid response; ensuring a global supply chain for health emergencies; and fostering a One Health approach to address the risks of emergence and transmission of zoonotic diseases. These issues require greater political will, international cooperation between all relevant stakeholders and across sectors, and aligned actions to achieve shared goals. Political commitment to developing and implementing the legal frameworks required to underpin these processes appears to be emerging, as evidenced by the growing support for a proposed global convention for pandemic preparedness and response.

9. Looking forward

149. The Review Committee's recommendations point to a number of elements that require reinforcement or modification, emphasizing that the main objective of the Regulations is the protection of health: this is the only consideration that should guide WHO's actions. Priorities include: more meaningful cooperation during and between health emergencies; greater transparency; more frequent exchanges of detailed real-time data and experiences at all levels; and greater speed in sharing genome sequences and samples of pathogens. Fortunately, digital technology supporting such

developments is increasingly becoming available, such as data mining to detect disease outbreaks early and next-generation molecular tools to track the spread and evolution of pathogens.

150. In the Committee's view, its 40 recommendations should be implemented without delay. However, it is for States Parties to decide which recommendations they will take forward and how. It is clear that sustainable national health systems, accessible to all, are an essential basis for global health emergency preparedness and response, and that the foundation of productive international collaboration is trust and transparency. Neither can be achieved without the other: they are two sides of the same coin.

151. The world must be prepared to respond better to the next public health emergency of international concern, especially if it has the potential to become a pandemic. The essential changes to enable effective implementation of the IHR require urgent action, not years of political negotiations.

Appendix 1

NAMES AND AFFILIATIONS OF REVIEW COMMITTEE MEMBERS

Preben Aavitsland, Senior Consultant, Professor, Domain for infectious disease prevention, health and the environment, Norwegian Institute of Public Health, Oslo, Norway (Rapporteur)

Ximena Aguilera, Director, Center of Epidemiology and Health Policy, Faculty of Medicine, Universidad del Desarrollo, Santiago, Chile

Seif Salam Al-Abri, Director General for Disease Surveillance and Control at the Ministry of Health of Oman

Vincent Anami, Continent Representative (Africa), Center for Disaster and Humanitarian Assistance Medicine, Uniformed Services University of the Health and Sciences, Friends International Centre, Nairobi, Kenya

Thouraya Annabi Attia, Director of the Food Safety Department at The National Agency of Sanitary and Environmental Control of Products, Ministry of Health, Tunisia

Carmen Aramburu, Director of Health and Social Policy, Delegation of the Spanish Government in Catalonia, Spain

Lucille Blumberg, Deputy Director, National Institute for Communicable Diseases, National Health Laboratory Service, Johannesburg, South Africa (Vice-Chair)

Malinee Chittaganpitch, Medical Scientist Advisor, Department of Medical Sciences, Ministry of Public Health, Thailand

James LeDuc, Director of Galveston National Laboratory, University of Texas Medical Branch, Galveston, United States of America

Dexin Li, Former Director, National Institute for Viral Diseases Control and Prevention, Chinese Center for Disease Control and Prevention, People's Republic of China

Rinat Maksyutov, Director General, Federal Budgetary Research Institution - State Research Center of Virology and Biotechnology VECTOR, Federal Service for Surveillance on Consumer Rights Protection and Human Well-being, Koltsovo, Russian Federation

Talat Mokhtari Azad, Director, Iranian National Influenza Center, Department, Tehran University of Medical Sciences, School of Public Health, Tehran, Islamic Republic of Iran

Mohamed Moussif, Chief of Public Health, Mohammad V International Airport, and National Coordinator of the Points of Entry Programme, Morocco

Olubunmi Ojo, retired pioneer Director, Surveillance and Epidemiology, and responsible for implementation of International Health Regulations at the National Public Health Institute, Nigeria Centre for Disease Control, Former Director, Disease Surveillance, Nigeria Centre for Disease Control, Abuja, Nigeria

Jean-Marie Okwo-Bele, Public health consultant, Democratic Republic of the Congo

Tomoya Saito, Director, Center for Emergency Preparedness and Response, National Institute of Public Health of Japan

Amadou Alpha Sall, Director, Institut Pasteur de Dakar and WHO Collaborating Centre for Arboviruses and Viral Hemorrhagic Fevers, Senegal

Mark Salter, Consultant in Global Health, Public Health England, London, United Kingdom of Great Britain and Northern Ireland

Myongsei Sohn, Professor Emeritus, College of Medicine, Yonsei University, Republic of Korea

Lothar H. Wieler, President of the Robert Koch Institute, Germany (Chair)

The following experts were nominated as members of the Review Committee but withdrew during the review process:

- Kalpana Baruah (India),
- John Lavery (Canada)

Appendix II

LIST OF DOCUMENTS PRESENTED TO AND REVIEWED BY THE COMMITTEE**WHO publications**

International Health Regulations (2005). Third edition. Geneva: World Health Organization; 2016. (<https://apps.who.int/iris/rest/bitstreams/1031116/retrieve>, accessed 29 April 2021)

World Health Assembly **resolution WHA73.1**, (2020). (https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_R1-en.pdf, accessed 27 April 2021)

Implementation of the International Health Regulations (2005). Report of the Review Committee on the Functioning of the International Health Regulations (2005) in relation to **Pandemic (H1N1)** 2009. Report by the Director-General. Geneva: World Health Organization; May 2011 (document A64/10). (http://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_10-en.pdf, accessed 27 April 2021)

Implementation of the International Health Regulations (2005). Report of the Review Committee on **Second Extensions** for Establishing National Public Health Capacities and on IHR Implementation. Report by the Director-General. Geneva: World Health Organization; March 2015 (document A68/22 Add.1) (http://apps.who.int/gb/ebwha/pdf_files/WHA68/A68_22Add1-en.pdf, accessed 27 April 2021)

Implementation of the International Health Regulations (2005). Report of the Review Committee on the Role of the International Health Regulations (2005) in the **Ebola** Outbreak and Response. Report by the Director-General. Geneva: World Health Organization; May 2016 (document A69/21) (https://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_21-en.pdf, accessed 27 April 2021)

All statements on the meetings of the International Health Regulations (2005) **Emergency Committee** regarding the coronavirus disease (COVID-19) pandemic. (<https://www.who.int/groups/covid-19-ihr-emergency-committee>, accessed 27 April 2021)

WHO Emergency Response Framework, second edition. Geneva: World Health Organization; 2017. ([https://www.who.int/publications/i/item/emergency-response-framework-\(-erf\)-2nd-ed](https://www.who.int/publications/i/item/emergency-response-framework-(-erf)-2nd-ed), accessed 27 April 2021)

WHO's work in health emergencies. Strengthening WHO's global emergency preparedness and response. Report by the Director-General. Geneva: World Health Organization; January 2021 (document EB148/18). (https://apps.who.int/gb/ebwha/pdf_files/EB148/B148_18-en.pdf, accessed 27 April 2021)

IOAC Interim report on WHO's response to COVID-19, February 2020. (<https://www.who.int/publications/m/item/ioac-interim-report-on-who-s-response-to-covid-19>, accessed 27 April 2021)

Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme. Looking back to move forward. November 2020 (document A73/10) (<https://www.who.int/publications/m/item/looking-back-to-move-forward-ioac-report-to-the-resumed-wha73-10>, accessed 27 April 2021)

Background documents prepared by IHR Review Committee Secretariat

Article-by-article analysis of the IHR, C. Dolea, F. Gonzalez-Martin, T. Hoffman, H. Hollmeyer, K. Abe, September 2020

Functions of the IHR that may require revisions preliminary literature review D. Bramley, September 2020

Summary of recommendations from previous IHR Review Committees – C. Dolea, F. Gonzalez-Martin, T. Hoffman, H. Hollmeyer, K. Abe, September 2020

Perceived systemic challenges and weaknesses in the design and implementation of the IHR (2005), G. Burci, November 2020

A systematic review of recommendations made by the IHR Review Committees, G. Rodier, February 2021 (draft)

Member States inputs to the Review Committee – a compilation document prepared by the Review Committee Secretariat, February 2021

Mechanisms to alert the global community on public health risks, including the role of a public health emergency of international concern, and possible intermediate level of alert, under the International Health Regulations (2005), C. Dolea, February 2021

Conduct of the Emergency Committees under the IHR (2005) - operational manual, WHO, June 2017 (draft)

Core capacity requirements: monitoring and reporting S. Chungong, J. Xing, N. Kandel, R. Sreedharan, October 2020

IHR legal preparedness, considerations for the Preparedness subgroup – F. Gonzalez-Martin, G. Howse, November 2020

Intra-action review materials and country features, S. Chungong et al, October 2020

Analysis of Member States facing fragile, conflict and vulnerable settings, S. Chungong et al, October 2020

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Appendix III

**TIMELINE OF EVENTS RELATING TO THE FUNCTIONING OF THE IHR
DURING THE COVID-19 RESPONSE**

The events referred to below relate to the following IHR functions:

- notification, verification and information sharing by States Parties
- information sharing by WHO
- convening of the Emergency Committee and determination of a public health emergency of international concern
- travel advice, temporary recommendations and States Parties' reporting on additional health measures under Article 43
- collaboration and coordination under Article 44.

31 December 2019

WHO's country office in China picks up a media statement by the Wuhan Municipal Health Commission website on cases of "viral pneumonia" and informs the IHR Focal Point in the WHO Western Pacific Regional Office. WHO's Epidemic Intelligence from Open Sources (EIOS) platform also picks up a media report on ProMED (a programme of the International Society for Infectious Diseases) about the same cluster of cases of "pneumonia of unknown cause" in Wuhan.

1 January 2020

The IHR Contact Point of the **WHO Western Pacific Region** requests information on the reported cluster of atypical pneumonia cases in Wuhan from the Chinese authorities. WHO sets up the Incident Management Support Team across the three levels of the Organization.

2 January 2020

WHO informs GOARN partners (major public health agencies, laboratories, UN agencies, international organizations and NGOs) about the cluster of pneumonia cases in China.

3 January 2020

Chinese officials respond to WHO's request for verification under Article 10 of the IHR, confirming that the bulletin released by the Wuhan Municipal Health Commission on 31 December was a formal notification by the Government to the public; they also provide information to WHO about a cluster of 44 cases of "viral pneumonia of unknown cause" identified in Wuhan, of which 11 are serious.

4 January 2020

WHO tweets that there is a cluster of pneumonia cases, but with no deaths, in Wuhan and that investigations to identify the cause are underway.

5 January 2020

WHO publishes information about an outbreak of pneumonia of unknown origin in Wuhan on its website in a DON report, and shares the same information through the EIS, which is a password protected platform accessible only to IHR States Parties and specific UN agencies.

8 January 2020

WHO headquarters writes to China's NFP requesting further information: "in order to conduct a comprehensive risk assessment and communicate with States Parties, we urgently require specific confirmation as to the discovery of a novel coronavirus and additional detailed information on the epidemiology, the clinical presentation, additional laboratory findings including sequencing, and the containment measures put in place".

9 January 2020

WHO reports that Chinese authorities have determined that the outbreak is caused by a novel coronavirus. The WHO Executive Director of the Health Emergencies Programme writes to China's NFP requesting China to share the diagnostic polymerase chain reaction (PCR) primer and full genome sequence.

10 January 2020

The WHO Health Emergencies Programme convenes the first meeting of its Strategic and Technical Advisory Group for Infectious Hazards to seek technical and scientific advice.

WHO issues initial technical guidance online with advice on how to detect, test and manage potential cases. This guidance is sent to WHO's regional emergency directors to share with WHO representatives in countries.

WHO issues advice on international travel and trade, stating that no significant human-to-human transmission has yet been reported. Given heavy population movements relating to the Chinese New Year holiday and the increased risk of cases being reported from elsewhere, WHO advises personal protection measures for travellers and advises against any restrictions of international traffic.

11 January 2020

WHO tweets that it has received the genome sequence for the novel coronavirus from China.

12 January 2020

Chinese authorities submit the whole genome sequence of COVID-19 to the GISAID platform on gisaid.org.

WHO publishes a second DON based on the additional information from China. This includes evidence suggestive of exposure at a seafood market that was closed on 1 January 2020, and the Government reports that there is no clear evidence that the virus passes easily from person to person.

13 January 2020

Thailand confirms its first imported case, which is the **first case in the WHO South-East Asia Region** reported to WHO. The information is published in a DON and on the EIS. The person, a traveller from Wuhan, China, was identified by thermal surveillance at Bangkok's Suvarnabhumi Airport on 8 January and diagnosed in hospital on 12 January.

WHO convenes the first teleconference with the diagnostics and laboratories global expert network.

WHO publishes first protocol for a reverse transcription PCR assay to diagnose the novel coronavirus.

14 January 2020

WHO's technical lead for the response notes in a press briefing that there may have been limited human-to-human transmission of the coronavirus (in the 41 confirmed cases) and that there is a risk of a possible wider outbreak.

17 January 2020

Japan confirms its first imported case. The person, a traveller returning to Japan after developing symptoms while staying in Wuhan, China, in late December 2019, was diagnosed in a hospital on 15 January. The information is published in a DON and on the EIS.

19 January 2020

The WHO Western Pacific Regional Office tweets that, according to the latest information received and WHO analysis, there is evidence of limited human-to-human transmission.

20 January 2020

Chinese experts publicly report that sustained human-to-human transmission has been confirmed.

20–21 January 2020

WHO conducts a mission to Wuhan and meets public health officials to learn about the response to the cluster of cases of novel coronavirus. Composed of WHO staff from the China Country Office and WHO headquarters, the team visits the Wuhan Tianhe Airport, Zhongnan hospital and the Hubei provincial CDC, including the Biosafety Level 3 laboratory handling coronavirus specimens.

21 January 2020

The Republic of Korea reports its first imported case. The case, a Chinese national residing in Wuhan, China, is detected through thermal surveillance at Incheon International airport, and is diagnosed in hospital the following day. The information is reported in a DON and on the EIS.

Information sharing through DONs is discontinued; WHO starts publishing daily Situation Reports, which continue until 16 August and are then published weekly, ongoing as at 15 April 2021.

23 January 2020

The United States of America reports its first confirmed case of the novel coronavirus, the **first case in the WHO Region of the Americas**. The information is reported in the daily Situation Report.

22–23 January 2020

The WHO Director-General convenes the IHR Emergency Committee on 22 January. At the end of the meeting, Committee members express divergent views on whether or not the event constitutes a public health emergency of international concern. The Director-General asks the Committee to continue its deliberations the following day. After receiving additional information about the situation in China, the Committee still has divergent views but stands ready to be reconvened as needed. The Committee suggests undertaking a WHO international multidisciplinary mission to China to support efforts to identify the source of the outbreak and respond to the situation.

24 January 2020

France informs WHO of three cases of novel coronavirus, all of whom have travelled from Wuhan, China. These are the **first confirmed cases in the WHO European Region**.

Updated WHO advice for international traffic is issued that advises the provision of personal protection measures for travellers from China, exit screening in countries or areas with ongoing transmission of the novel coronavirus (2019-nCoV) (currently China), and comprehensive entry screening in countries without transmission.

27 January 2020

A senior WHO delegation led by the Director-General arrives in Beijing to meet Chinese leaders in order to learn more about the response in China and to offer technical assistance.

28 January 2020

A senior WHO delegation led by the Director-General arrives in Beijing to meet Chinese leaders, learn more about the response in the People's Republic of China, and to offer technical assistance. The WHO Director-General meets with China's President, Xi Jinping. They discuss continued collaboration on containment measures in Wuhan, public health measures in other cities and provinces of China, conducting further studies on the severity and transmissibility of the virus, continuing to share data with WHO, and a request for China to share biological material with WHO. They agree that WHO will send an international team of leading scientists to China who will work with Chinese counterparts to better understand the context and the overall response, and to exchange information and experience. The WHO Director-General and Regional Director discuss with China's Minister of Health the sharing of virus samples to support the development of a vaccine.

The United Arab Emirates reports the **first cases in the WHO Eastern Mediterranean Region**.

30 January 2020

WHO reports 7818 total confirmed cases worldwide, and 98 cases and no deaths in 18 countries outside China. Four countries have evidence of human-to-human transmission outside China

(Germany, Japan, the United States of America and Viet Nam). WHO assesses risk as very high for China, and high globally.

The second Emergency Committee meeting is held. The Director-General declares the event a public health emergency of international concern and issues temporary recommendations to States Parties.

Travel-related temporary recommendations include advice to China to continue exit screening at major international airports. All countries should place particular emphasis on reducing human infection, preventing secondary transmission and international spread, and contributing to the international response, based on WHO's technical advice. The Emergency Committee does not advise any travel or trade restrictions.

3 February 2020

The Princess Diamond cruise ship arrives in Yokohama, Japan, and begins to quarantine after a guest who had disembarked in Hong Kong tested positive on 1 February.

WHO releases the Strategic Preparedness and Response Plan outlining the public health measures that the international community should take, and stands ready to provide support to all countries in their efforts to prepare for and respond to 2019-nCoV.

6 February 2020

WHO begins to share information about travel measures on the EIS: 22 countries are implementing travel-related measures as reported from WHO regional offices.

The first Circular Letter from the Director-General is sent to Member States, recalling the obligations under Article 43 of the IHR and WHO travel advice.

11 February 2020

WHO issues advice on key considerations for repatriation and quarantine of travellers from China.

11–12 February 2020

WHO convenes a Research and Innovation Forum on COVID-19 to set a research agenda relating to scientific unknowns about the new virus.

16–24 February 2020

WHO-China Joint mission assesses the seriousness of the new disease, its transmission dynamics and the nature and impact of China's control measures; teams make field visits to Beijing, Guangdong, Sichuan and Wuhan.

17 February 2020

The second Circular Letter from the Director-General is sent to Member States, recalling obligations under Article 43 of the IHR and WHO travel advice.

25 February 2020

First confirmed case in Algeria, the **first in the WHO African Region**.

29 February 2020

WHO updates its advice for international traffic, defining “affected areas” and recommending that “travellers who are sick to delay or avoid travel to affected areas”; restrictions may only be justified at the beginning of an outbreak, should be based on risk assessment, proportionate to the risk and short in duration, and reconsidered regularly.

11 March 2020

COVID-19 is characterized as a pandemic by WHO.

A joint statement by the International Civil Aviation Organization and WHO is issued.

EIS announcement: 51 States Parties are implementing additional health measures relating to COVID-19.

16 March 2020

WHO launches the COVID-19 Partners Platform as an enabling tool for countries and all other stakeholders to collaborate in the global COVID-19 response. The Platform features real-time tracking to support the planning, implementation and resourcing of country preparedness and response activities.

18 March 2020

EIS announcement: 89 countries are implementing additional health measures relating to COVID-19.

14 April 2020

WHO publishes a COVID-19 strategy update, with guidance for countries preparing for a phased transition from widespread transmission to a steady status of low-level or no transmission. It aims to support all countries in controlling the pandemic by mobilizing all sectors and communities to prevent and suppress community transmission, reduce mortality and develop safe and effective vaccines and therapeutics.

1 May 2020

The third Emergency Committee meeting is held. The event continues to constitute a public health emergency of international concern. Following the Emergency Committee’s advice, the Director-General issues temporary recommendations to States Parties on coordination and collaboration, preparedness, surveillance, additional health measures, health workers, food security, the One Health approach, risk communication and community engagement, research and development, and essential health services. Recommendations relating to international travel include: avoiding restrictions on international transport of food, medical and other essential supplies and permitting the safe movement of essential personnel required for an effective pandemic response; implementing appropriate travel measures with consideration of their public health benefits; implementing and monitoring case finding and contact tracing of travellers; continuing to review travel and trade

measures; engaging in global efforts to respond to the challenges posed by COVID-19 to managing maritime vessels; not implementing trade restrictions beyond those considered to be of public health importance in accordance with international agreements; and continuing to provide public health rationales to WHO for additional health measures imposed, in accordance with the IHR.

18 May 2020

The Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme, which continuously reviews WHO's work in health emergencies, publishes its interim report on WHO's response to COVID-19 from January to April 2020.

30 July 2020

WHO issues updated travel advice: its advice on *Public health considerations while resuming international travel* outlines a risk-benefit analysis for deciding on travel measures, based on epidemiology, public health and health systems' capacities to respond.

1 August 2020

The fourth Emergency Committee meeting is held. The event continues to constitute a public health emergency of international concern. The WHO Director-General issues temporary recommendations to States Parties. Travel-related recommendations include: implementing, regularly updating and sharing information with WHO on appropriate and proportionate travel measures and advice, based on risk assessments; and implementing necessary capacities, including at points of entry, to mitigate the potential risks of international transmission of COVID-19 and to facilitate international contact tracing.

8–9 September 2020

The WHO Director-General convenes the Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 Response, following the Health Assembly's request in resolution WHA73.1.

30 October 2020

The fifth Emergency Committee meeting is held. The event continues to constitute a public health emergency of international concern. The WHO Director-General issues temporary recommendations to States Parties on leadership and coordination, evidence-based response, research, surveillance and contact tracing, risk communication and community engagement, diagnostics, therapeutics and vaccines, health measures in relation to international traffic, and essential health services. Travel-related recommendations include: regularly reconsidering measures applied to international travel in compliance with Article 43 of the IHR and continuing to provide information and rationales to WHO on measures that significantly interfere with international traffic; ensuring that measures affecting international traffic (including targeted use of diagnostics and quarantine) are risk-based, evidence-based, coherent, proportionate and time limited; and continuing to strengthen capacity at points of entry to manage potential risks of cross-border transmission and to facilitate international contact tracing.

16 December 2020

WHO issues updated travel advice: its advice on *Considerations for implementing a risk-based approach to international travel in the context of COVID-19* provides a tool for risk-management of travel measures.

27 December 2020

The first ever International Day of Epidemic Preparedness is held to promote the importance of preventing, preparing for and forming partnerships to combat epidemics.

31 December 2020

WHO issues a DON on SARS-CoV-2 variants, covering reports from Denmark, the United Kingdom and South Africa. It details the public health response and WHO's risk assessment and advice.

14 January 2021

Thirteen scientists from the international mission team, WHO and the World Organization for Animal Health tasked with examining the origins of the virus that causes COVID-19 arrive in Wuhan, China.

15 January 2021

The sixth Emergency Committee meeting is held. The event continues to constitute a public health emergency of international concern. The WHO Director-General issues temporary recommendations to States Parties in relation to SARS-CoV-2 variants, COVID-19 vaccines, health measures in relation to international traffic, evidence-based response strategies, surveillance, and strengthening health systems. Recommendations relating to international traffic include: at the present time, not introducing requirements for proof of vaccination or immunity as a condition of entry for international travel given the still critical unknowns regarding vaccine efficacy in reducing transmission and limited availability of vaccines; not using proof of vaccination to exempt international travellers from complying with other travel risk reduction measures; implementing coordinated, time-limited, risk-based and evidence-based approaches for health measures relating to international traffic, in line with WHO guidance and IHR provisions; and sharing information with WHO on the effects of health measures in minimizing the transmission of SARS-CoV-2 by international travellers to inform WHO's development of evidence-based guidance.

18 January 2021

The Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 Response presents an interim progress report at the 148th session of the Executive Board.

5 February 2021

WHO issues its Interim position paper: *considerations regarding proof of vaccination for international travel*.

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