Second report on progress

Prepared by the Independent Panel for Pandemic Preparedness and Response for the WHO Executive Board, January 2021

The Independent Panel FOR PANDEMIC PREPAREDNESS & RESPONSE

This is the second report on progress from the Independent Panel for Pandemic Preparedness and Response. The report represents over three months of work by the full Panel since it held its first meeting on 17 September 2020. This report has been informed by the review of hundreds of documents, expert consultations across many sectors, case studies, submissions received by the Panel from Member States, academia, civil society , and citizens, and almost 100 interviews with those at the frontlines of pandemic preparedness and response.

The work of the Panel, however, is not yet complete and, as detailed in this report, there are a number of critical questions which remain to be examined in depth before conclusions can be drawn and recommendations made. The first progress report was presented to the resumed session of the 73rd World Health Assembly on 5 November 2020. Following this report, the Panel will again report to the 74th World Health Assembly scheduled for May 2021.

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Preface

The COVID-19 pandemic has been much more than an outbreak of a new infectious disease. The direct health impact seen in the number of people infected and deaths caused has been magnified by substantial indirect impacts on essential health and other services and on people's livelihoods and well-being. Across the planet, people have died, families have been left bereft, and societies and economies reshaped.

Stark inequalities have been laid bare within and between countries. Progress towards the Sustainable Development Goals has been halted and even reversed. The worst of the pandemic and its impact are yet to come as we write at the beginning of January 2021.

As Co-Chairs, we are deeply mindful of the need to ensure that out of the tremendous suffering and loss caused by this pandemic comes a renewed resolve to make the world more prepared, more secure, more just, more equitable, and more resilient for the challenges of the future, which will surely include more pandemic threats. The clarity with which the world realizes today that pandemics pose a fundamental threat to humanity must translate into lasting, structural change for the better.

For all that our institutions and systems have sought to respond to the pandemic, often with heroic and unprecedented measures, the sobering fact is they have been no match for the virus and the speed with which it has spread across the globe. Despite the myriad shining examples on every continent of human ingenuity in response to the virus, we have failed in our collective capacity to come together in solidarity to create a protective web of human security.

As 2020 came to an end, the world was gratified to see vaccines given approval and begin to be used. But this blossoming of hope has been blighted by the manifest inequity in plans for vaccine rollout. Whether you happen to be born in Liberia, or New Zealand, or anywhere else, should not be the factor that determines your place in the vaccine queue. Only the application of principles of universality and equity will be sufficient to enable the world to come out of this crisis together.

COVID-19 emerged at a high point of geopolitical tension, which has impacted on the response to it. In early January 2020, the United Nations Secretary-General observed that geopolitical tensions were at their highest level this century, coincidentally just at the moment when first news of the outbreak was spreading. Those tensions have detracted from decisive and internationally co-ordinated responses to the pandemic. The virus has thrived on division, and the resultant pandemic has exacerbated tensions and undermined multilateral action just when it was most needed.

The Independent Panel for Pandemic Preparedness and Response is tasked with charting what went wrong, what lessons can be learnt from that, and what could be done better in future. This Report sets out the progress which the Panel has made since it first met in September. While our inquiries are ongoing into where the international system could have done better, we are conscious that the means to curb the pandemic through non-pharmaceutical interventions are well known, but still the pandemic rages on. For that reason, this report on progress includes the views of the Panel on critical lessons which are already evident, and on ways in which the response could be reshaped right now.

Her Excellency Ellen Johnson Sirleaf
Co-Chair

The Right Honourable Helen Clark
Co-Chair

on behalf of the Independent Panel

Key messages

The world was not prepared, and must do better

The Independent Panel for Pandemic Preparedness and Response is painfully aware that the world was not prepared for the coronavirus disease (COVID-19) pandemic.

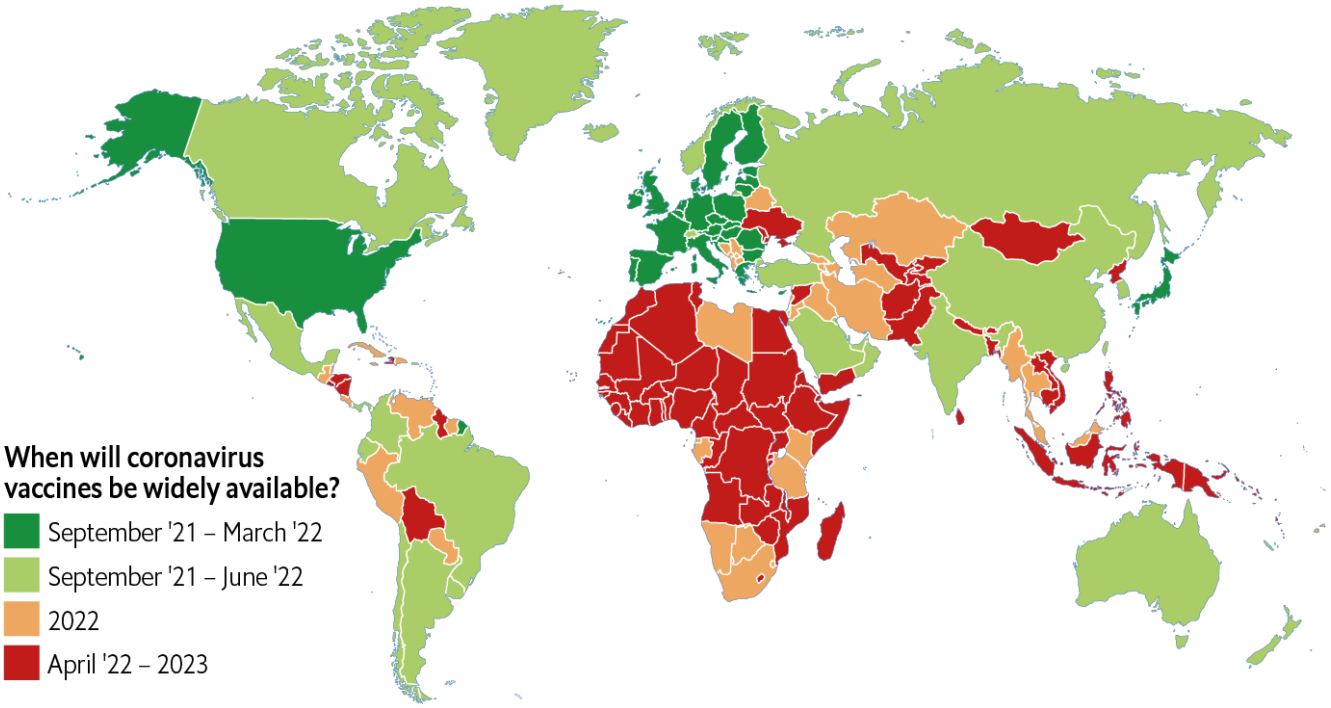
When the scale of the pandemic and its impact became evident, as well as the failures in the chain of preparedness and response, communities and leaders around the world rallied in response, rethinking systems, providing mutual support and solidarity, and sparing no effort in devising the care, treatments, and prevention needed to confront severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Frontline workers exposed themselves to risk and put their lives on the line for their fellow human beings.

While the work of the Panel and our inquiries are ongoing, and we are conscious that the pandemic is continuing to evolve with many countries facing their most challenging period yet in their response to COVID-19, we are unanimous in our view that more decisive and effective action can be taken immediately to save lives and reduce the overall damage from the pandemic. We are also convinced that the evidence of deficiencies in pandemic preparedness and response calls for far-reaching change for the future.

- **The public health measures which would curb the pandemic need to be applied comprehensively.** Non-pharmaceutical interventions, including early case detection, contact tracing and isolation, physical distancing, limits on travel and gathering, hand hygiene, and mask wearing are effective. These measures must continue to be used at scale, even as vaccination is rolled out. In too many countries, the failure to apply such measures is continuing to result in an unacceptable toll of death, illness, and transmission. Social protection measures focussed on overcoming vulnerability will both enhance the effectiveness of these public health measures, and reduce the drivers of risk.

The full potential of vaccines cannot be realized if narrow national interests and economic power determine who gets access, instead of basic principles of fairness and ensuring that allocation will optimize their public health impact.

- **The pandemic response has deepened inequalities.** Inequalities both within and between nations have worsened as vulnerable and marginalized people in a number of countries have been left without access to health care, not only to treat COVID-19 infection, but also because health systems have been overwhelmed, shutting many out of basic care and services. There is a gap between countries in the level



Source: The Economist Intelligence Unit, January 2021.

Figure 1: Predicted widespread access to COVID-19 vaccines

of access to diagnostics, therapeutics, and essential supplies. The full potential of vaccines cannot be realized if narrow national interests and economic power determine who gets access, instead of basic principles of fairness and ensuring that allocation will optimize their public health impact. We cannot allow a principle to be established that it is acceptable for high-income countries to be able to vaccinate 100% of their populations while poorer countries must make do with only 20% coverage. COVID-19 did not start in the poorest countries, but they are suffering the greatest collateral damage, and they need enhanced solidarity and support from the international community.

- **The global pandemic alert system is not fit for purpose.** Critical elements of the system are slow, cumbersome and indecisive. The Panel has been advised that an increasing majority of alerts concerning outbreaks come to WHO via news or social media and is aware that platforms to collate epidemic intelligence from open and non-traditional sources have been created. Overall, the procedures and protocols attached to the operation of the International Health Regulations (2005) (IHR), including those leading up to the declaration of a public health emergency of international concern, seem to come from an earlier analog era and need to be brought into the digital age. A system of distributed information, fed by people in local clinics and laboratories, and supported by real-time data gathering and decision-making tools, is necessary to enable reaction at the speed required—which is days, not weeks—to confront epidemic risk. This technical updating must be accompanied by a political step-change in the willingness of countries to hold themselves accountable for taking all necessary actions as soon as an alert is issued.

A family prays at the gravesite of a relative who died of COVID-19. Lima, Peru. (Photo: Angela Ponce)

- **There has been a failure to take seriously the already known existential risks posed by pandemic threat.** Previous pandemic crises have prompted numerous evaluations, panels and commissions which have issued many recommendations for strengthening preparedness and response. Too many of those were not acted on. There has been a wholesale failure to take seriously the existential risk posed by pandemic threat to humanity and its place in the future of the planet. The collective reaction has amounted to wishful thinking instead of far-sighted risk assessment and action. This crisis shows how quickly a new virus can sweep away decades of hard-won progress and investment in the future. The Panel believes that for the international community to fail again to heed calls for preparedness against pandemic threat would be unconscionable.

- **The World Health Organization has been underpowered to do the job expected of it.** The Panel is struck that the power of WHO to validate reports of disease outbreaks for their pandemic potential and to be able to deploy support and containment resources to local areas is gravely limited. The incentives for cooperation are too weak to ensure the effective engagement of States with the international system in a disciplined, transparent, accountable and timely manner. The impact of this pandemic ought to be to provide a once-in-a-generation

opportunity for Member States to recognize the common benefit of a suitably reinforced suite of tools available to the international system to enable robust pandemic alert and outbreak containment functions.

The Panel believes that the COVID-19 pandemic must be a catalyst for fundamental and systemic change in preparedness for future such events, from the local community right through to the highest international levels. Institutions across the policy spectrum, not just in health, must be part of effective pandemic preparedness and response. A new global framework is needed to support prevention of and protection from pandemics. Building the capacity to respond effectively to them must be seen as a collective investment in mutual human security and wellbeing.

The Panel believes that such a global reset is achievable, and its report in May will set out recommendations to that end. To be implemented, they will need the global community to come together with a shared sense of purpose and to leave no actor outside the circle of commitment to transformative change.

Health workers around the world had to rapidly shift their priorities to treat patients with a disease of which little was known, and against which they were often insufficiently protected. (Photo: Christine McNab)

Progress, observations and next steps

The Terms of Reference of the Independent Panel for Pandemic Preparedness and Response are to review experience gained and lessons learnt from the international response to COVID-19, while also analysing past and future challenges and the health, social and economic impacts of pandemics. The Panel has organized its Program of Work around four broad themes: building on past experiences of pandemic response, reviewing what has taken place in the COVID-19 response to date, understanding the range of impacts of the pandemic, and considering what a future international pandemic preparedness and response system should look like, including the place of WHO in this system.

This report on progress outlines the observations the Panel has made on evidence put before the Panel and the analysis it has conducted. The observations should be regarded as provisional, both because the investigations of the Panel are not complete and because the pandemic is continuing to evolve, with many countries facing their most severe challenges yet in responding to COVID-19. The future lines of investigation the Panel intends to undertake and critical questions it will seek to answer are detailed below.

1. Build on the past

In addressing the critical issue of whether the world could have been better prepared to avert the COVID-19 pandemic, the Panel is considering whether there are characteristics of the virus and the environment into which it emerged which have created particularly fertile conditions for its spread. As well as the natural and social environment in which the virus emerged, the preparedness policy ecosystem appears to have lacked predictive metrics and follow-through on previous recommendations to strengthen preparedness.

Observations

Conditions around the emergence of the pandemic

History tells us that ***zoonotic*** outbreaks will continue to occur, and they seem to be appearing at a faster pace. From 2011 to 2018, WHO tracked 1483 epidemic events in 172 countries.[1] Since coming into force in 2007, the International Health Regulations (2005) have been used to declare a Public Health Emergency of International Concern six times, five of which have occurred since 2014. Four of those five were due to viruses of zoonotic origin which have only emerged as human threats within the past 50 years but have become increasingly common causes of epidemics. Factors driving zoonotic outbreaks include the increasing human population, urbanization, global commerce and travel, and human encroachment on natural habitats, leading to increased volumes and types of contact between animals and humans.

The COVID-19 pandemic differs from disease outbreaks and pandemics of the recent and more distant past in the scale, speed, and breadth of its impact.

The United Nations Environment Programme and the International Livestock Research Institute have identified[2] seven human-mediated factors driving the emergence of zoonotic diseases: increasing human demand for animal protein; unsustainable agricultural intensification; increased use and exploitation of wildlife and its illegal trafficking; unsustainable utilization of natural resources accelerated by urbanization, land use change and extractive industries; increased travel and transportation; changes in food supply; and climate change. For example, global travel has more than quadrupled since 1990, from one billion people travelling by air then to 4.2 billion in 2018. Addressing these risk factors require 'one health' approaches which combine human, animal and environmental health considerations.

The COVID-19 pandemic ***differs from disease outbreaks and pandemics*** of the recent and more distant past in the scale, speed and breadth of its impact. The facts that the virus is infectious before symptoms appear, and that a high proportion of infections remain asymptomatic, have aided its spread to nearly every country and territory on earth. The pandemic has had an impact on nearly every aspect of social and economic life. It

People have had to balance the need to protect themselves with the realities of their lives. (Photo: Angela Ponce)

has been notable for the large number of infections and deaths which have occurred in high-income countries, but the economic impact of the pandemic has also been harsh on low- and middle-income countries along with the impact on health outcomes beyond COVID-19.

COVID-19 has also emerged in a dynamic media and information environment. When severe acute respiratory syndrome (SARS) spread in 2003, smartphones enabling data access were the preserve of the future, and under a billion people, some 15% of the global population, had any internet access. By 2014, 2.4 billion people had mobile internet access, and this rose to 3.8 billion by 2019, half the world's population.[3] ***Social media*** and the accelerated volume and distribution of both accurate and inaccurate information, together with polarized political environments, have triggered what has been dubbed an "infodemic". This has not only influenced the behavior of people but has also created anxiety, resulting in a mix of pressures in policy decision-making which have proved hard to manage.

At the very beginning of 2020, the United Nations Secretary-General observed that "***geopolitical tensions*** are at their highest level this century".[4] This was the world into which COVID-19 emerged, and the pandemic has been a vehicle for the expression of those tensions as well as an exacerbating factor. This has been particularly manifested in controversies around the work of WHO and expressions of a lack of confidence in WHO by some of its Member States. It has also been

reflected in the initial failure of the United Nations Security Council to achieve consensus around resolutions in response to the pandemic. This impasse is remarkable in the face of a global crisis with the dimensions of this pandemic.

Preparedness assessment and previous panels

As at the end of 2020, the confirmed count of cases in 218 countries and territories stood at over 80 million with more than 1.7 million recorded deaths. Actual numbers are almost certainly far higher than those recorded. The sheer toll of this epidemic is *prima facie* evidence that the ***world was not prepared*** for an infectious disease outbreak with global pandemic potential, despite the numerous warnings issued that such an event was probable. Key issues for the Panel are whether better assessment of preparedness and its gaps and more assiduous implementation of previous recommendations to reinforce global health security would have enabled better defences to be put in place.

A number of efforts have been made to assess country capacities for pandemic preparedness, both under the monitoring and evaluation framework of the International Health Regulations (2005) and by academic institutions. These include results from the State Parties Self-Assessment Annual Reporting Tool, scores assigned under joint external evaluations as part of the International Health Regulations (2005), and the recent Global Health Security Index. Scores achieved ***in these preparedness assessments have failed to predict*** the relative success of countries in containing the spread of COVID-19. They may not, for example, have had sufficient regard for leadership and political factors which have a bearing on how countries respond.

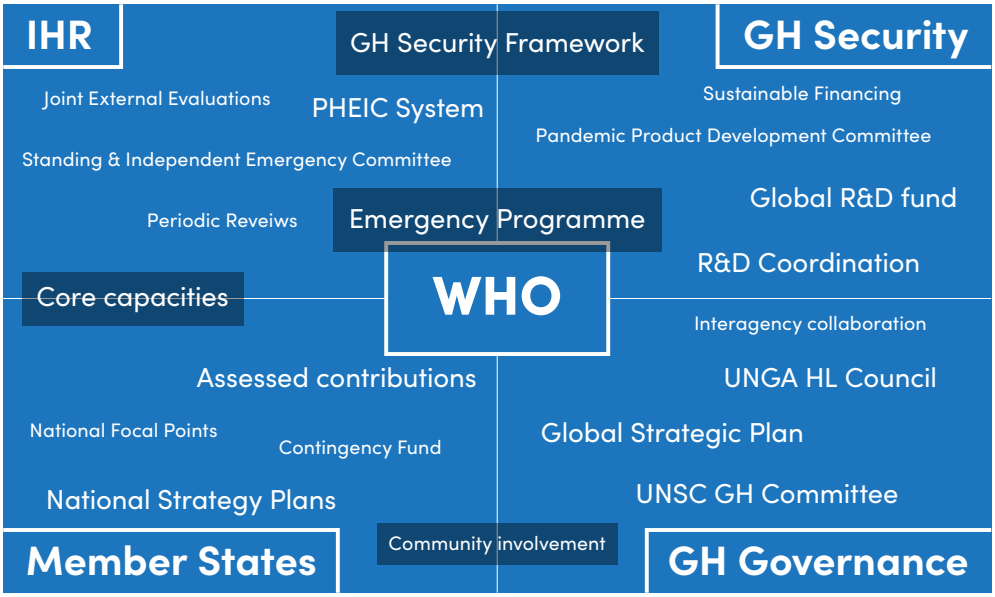
A series of review committees and panels in recent years have pointed to the lack of country core capacities in pandemic preparedness, insufficient implementation of the International Health Regulations (2005) requirements by national governments, weaknesses in WHO´s emergency response systems and programmes, and other gaps and challenges in pandemic preparedness and response at national and international levels, including fundamental weaknesses in health systems.

The Independent Panel has reviewed the ***reports of 12 commissions and panels*** assessing gaps in pandemic response. Their conclusions have consistently pointed to a need for WHO to strengthen its role as the leading and coordinating organization in the field of health, focusing both on its normative work, and on building up a unified, effective, operational capacity for health emergencies with a capacity for rapid decision-making and support for supply chains and surge capacities. Similarly, many previous panels have proposed strengthening the functioning of the International Health Regulations (2005). Among the reform proposals which have been suggested are changes to notification and alert systems, such as the criteria for declaration of a public health emergency of international concern, and the creation of a transparent, politically protected Standing IHR Emergency Committee.

Figure 2: Twelve different commissions and panels have examined outbreaks, pandemics, and the International Health Regulations (2005)

COVID-19		
1	2020	Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 Response
2	2020	Independent Oversight Advisory Committee for the WHO Health Emergencies Programme
3	2020	Global Preparedness Monitoring Board, Annual Report, A World in Disorder
4	2019	Global Preparedness Monitoring Board, Annual Report, A world at risk
5	2019	Independent Oversight Advisory Committee for the WHO Health Emergencies Programme
6	2017	UN Global Health Crises Task Force
7	2017	Independent Oversight Advisory Committee for the WHO Health Emergencies Programme
8	2016	UN High-Level Panel on the Global Response to Health Crises
Ebola 2014		
9	2016	Director General´s Advisory Group on Reform of WHO´s Work in Outbreaks and Emergencies
10	2016	Commission on a GH Risk Framework for the Future: A Framework to Counter Infectious Disease Crises
11	2016	Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response
12	2015	Ebola Interim Assessment Panel
13	2015	Review Committee on Second Extensions for Establishing National Public Health Capacities and on IHR Implementation
H1N1 2009		
14	2011	Review Committee on the Functioning of the International Health Regulations (2005) in relation to Pandemic (H1N1) 2009

Figure 3: Summary of themes emerging from report recommendations



Many of the previous panels produced good ideas and some of them were implemented, including the creation of a dedicated WHO Health Emergencies Programme.

Yet, overall, there has been a failure to undertake comprehensive reforms and to address leadership, funding, and governance issues at the highest international level. For example, a number of the earlier review processes made recommendations concerning the larger picture of global health security, calling for the development of a global strategic plan to improve public health preparedness and response, together with sustainable and dedicated financing for this purpose.

The Panel notes with deep concern that the failure to enact fundamental change despite the warnings issued has left the world dangerously exposed, as the COVID-19 pandemic proves. The Independent Panel does not want to present yet another report to sit on the shelves, leaving historians to ask *what if* its recommendations had been heeded.

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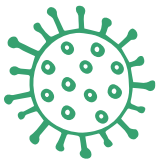
Priorities for the Independent Panel's continued work

- The Panel will conduct additional reviews and analysis of the ***mega-trends, societal changes, and systemic inequalities*** which have contributed to making the impact of this pandemic so devastating.

- Further analysis will be undertaken to understand better why the present ***system to assess*** national preparedness capacity failed to predict actual performance, and how metrics could be improved.

- In an effort to avoid repeating the pattern of neglect, the Panel will work to discern key factors explaining why ***previous recommendations*** have not been implemented, including what is needed to generate a sufficient coalition for change.

2. Review the present



The Panel is conscious that it is easy to identify shortcomings in the early response to an outbreak with the benefit of hindsight, but far more difficult to exercise good judgement in the context of emerging, scientifically-uncertain, and incomplete information. Nevertheless, the Panel believes there are important lessons to be drawn from what was known about and acted on in response to the emergence of COVID-19 from its earliest stage. In understanding more clearly national responses to the emerging outbreak, the Panel will pay particular attention to the advice and recommendations which were issued to countries and to how they responded to this advice.

Observations

Early responses

Evidence before the Independent Panel suggests that the emergence of a new pathogen such as SARS-CoV-2 should trigger ***a complex early response dynamic*** whose elements include the identification of case clusters (in this instance manifesting as a pneumonia of unknown cause), establishing a likely new causal agent through laboratory and genetic analyses, triggering of surveillance and alert systems, developing novel diagnostics and therapeutics, issuing advice and recommendations for action, interaction between national, regional and international systems, and resultant willingness to take action based on national capacities.

The initial chronology[5] of the early phase of the outbreak suggests that there was potential for ***early signs*** to have been acted on more rapidly, with an escalation of response tied more immediately to the emerging information about the spread of the virus. If the precautionary principle had been applied in relation to the earliest indicative but unconfirmed evidence of human-to-human and asymptomatic transmission, more timely and stronger warnings of the potential for human-to-human transmission could have been issued by both WHO and national and local authorities.

The Panel is not conducting a forensic inquiry into ***the origins*** of the virus or seeking to pinpoint the spillover event when it moved from animal to human hosts. We note that WHO has convened a global study of the origins of SARS-CoV-2, the first phase of which will explore how the circulation of SARS-CoV-2 might have started and gather evidence from the cluster of cases identified in December 2019 for potential clues as to its origin. The Panel will seek to be informed by the ongoing

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Jimvelle Cac prepares for her night-shift as a nursing assistant at an emergency department in Baltimore, Maryland, USA. (Photo: Rosem Morton)

work of this study. To date we have seen no new facts which contradict the conventional wisdom concerning likely origins, but we regret the lack of a transparently-established, global consensus on the origins. Notwithstanding the clarity such a consensus would have furnished, the focus of the Panel is on the response actions which were taken, or not taken, from the earliest moment at which information was available about a new pneumonia of unknown etiology.

In retrospect, it is clear that the volume of infections in the early period of the epidemic in all countries was ***higher than reported***. A largely hidden epidemic contributed to the global spread: simulations have shown that mobility networks of air travel predicted the emerging global diffusion of the virus during the early phase of the epidemic.

There is evidence from Wuhan that locally available, commercial, next-generation-sequencing conducted in late-December 2019 provided the first suggestion that a novel virus may be responsible for the clinically observed cases of pneumonia of unknown origin. This may indicate the potential for a more significant role for these relatively ***inexpensive techniques***, which are able to use technical advances in parallel sequencing to enable high-throughput and reliable results at a fraction of previous costs. They could be made widely available, and protocols could be set in place so that the results they produce can be incorporated into public health surveillance systems.

A close reading of the chronology of the earliest events in the emergence of COVID-19 also suggests to the Panel that there were lost opportunities to apply ***basic public health measures*** at the earliest opportunity. While still collecting information, the Panel is becoming more confident in its understanding of the early events in Wuhan, China, where the first presently known cluster of cases was identified setting in train the identification of SARS-CoV-2 as the cause. The Panel is aware of emerging reports of novel coronaviruses possibly being evident in other countries as well, and the Panel will continue to monitor the scientific developments associated with the ongoing investigations and sampling from this time.

What is clear to the Panel is that public health measures could have been applied more forcefully by local and national health authorities in China in January. It is also clear to the Panel that there was evidence of cases in a number of countries by the end of January 2020. Public health containment measures should have been implemented immediately in any country with a likely case. They were not. According to the information analysed by the Panel, the reality is that only a minority of countries took full advantage of the information available to them to respond to the evidence of an emerging epidemic.

Similarly, the earliest evidence of the success of measures taken against SARS-CoV-2 could have been shared more widely and proactively, and action should have been taken more rapidly to employ the most successful containment measures in all places where cases appeared. The Panel has noted that when WHO conducted a technical briefing at its Executive Board session on 4 February 2020, it reported that there had been over 12 000 confirmed cases in China but only 176 cases in the rest of the world — definitive evidence of human-to-human transmission, and also a clear signal to all countries with even a handful of cases that they needed to act quickly to contain the spread. In far too many countries, this signal was ignored.

The ***Emergency Committee*** established under the International Health Regulations (2005) was convened on 22 January 2020. It is not clear why the committee did not meet until the third week of January, nor is it clear why it was unable to agree on the declaration of a public health emergency of international concern when it was first convened. A public health emergency of international concern was declared on 30 January, but on the evidence considered thus far by the Panel, the extent of response to that in countries around the world fell short of what should have been expected. The Panel is continuing to consider what actions could have been taken including by WHO and regional, national, and local actors, that may have resulted in more forceful country action, in particular in the period from the beginning of February 2020 until early March. One question is whether it would have helped if WHO had used the word pandemic earlier than it did. Although the term pandemic is neither used nor defined in the International Health Regulations (2005), its use does serve to focus attention on the gravity of a health event. It was not until 11 March that WHO used the term.

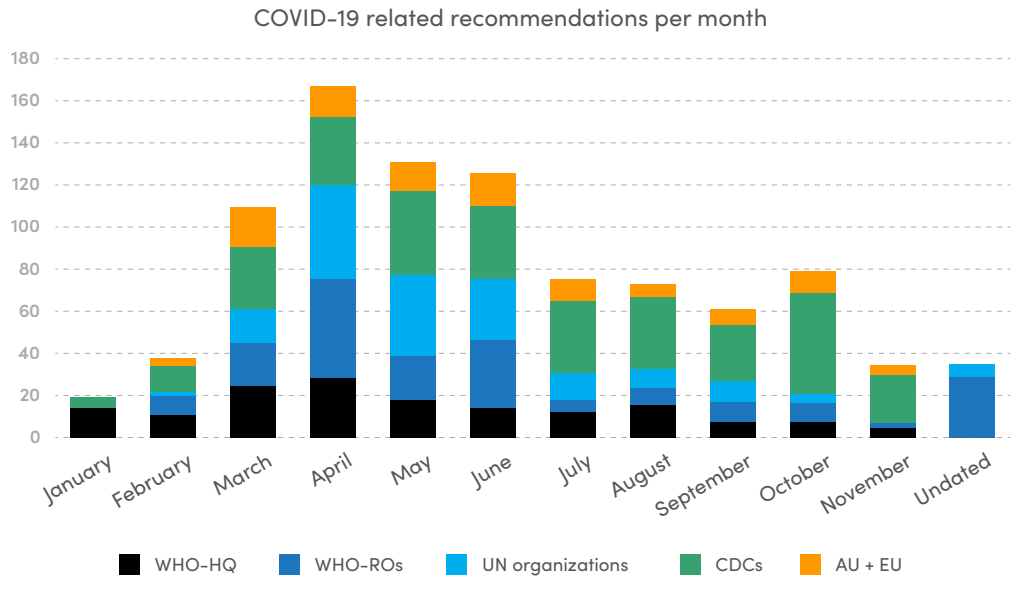
International recommendations issued during 2020

The Independent Panel has documented in total ***almost 900 recommendations*** published by WHO, including its regional offices, and other international organizations from 1 January to 14 November 2020. Those recommendations are mainly technical guidance documents, such as technical, scientific, and policy briefs, considerations, interim and risk assessment guidance documents, fact sheets, and protocols, checklists and other tools prepared for governments, public health authorities and frontline health workers. Advisory documents for the general public have not been included in this inventory.

This inventory includes 330 ***technical guidance*** documents published by WHO including its regional offices, and more than 570 technical guidance documents produced by major international and national public health organizations. The Panel intends to conduct a detailed examination to understand when they were made and on what scientific evidence-base, and whether or not they had a significant impact in shaping the response to COVID-19. The Panel also wants to understand more about recommendations or non-recommendations on critical areas of the response, including on the issues of travel restrictions, the nature of transmission — including whether it was assumed to be by droplets or aerosolized, mask wearing, and other features of virus transmission and effectiveness in containment.

Even before its detailed examination is conducted, however, the sheer volume of recommendations issued suggests to the Panel the major risk of a lack of direction, clarity and consistency of the type which would have assisted countries to set priorities in their responses. The coherence and prioritization of recommendations, and evidence concerning their actual patterns of use as experienced in countries, will be an issue to which the Panel will pay particular attention.

Figure 4: COVID-19 related recommendations made by WHO and other International Organizations



Source: Analysis by The Independent Panel.

Priorities for the Independent Panel's continued work

- The Panel will address remaining questions in relation to ***establishing the facts*** of what occurred, especially in the earliest phase of the emergence of the pandemic, including through continued interviews, consultations and analysis. The timeliness and impact of information and advice issued by WHO and other bodies will also be reviewed in relation to the ***chronology*** of the emergence, spread of, and responses to COVID-19 and will be part of the Panel's next report.

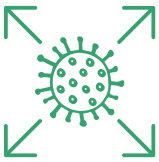
- The Panel will review the methods and tools employed by ***surveillance and alarm systems*** and consider the extent to which such tools and procedures are adequate to meet the needs of alerting decision-makers and populations to a fast-moving novel pathogen of the type represented by SARS-CoV-2.

- The Panel will seek a more complete understanding of the strengths and weaknesses of the International Health Regulations (2005) as an international framework of relevance to pandemic preparedness and response. To support this, it is liaising with the Review Committee on the functioning of the International Health Regulations (2005) during the COVID-19 response.

- The Panel will continue to gather evidence and to analyse the main features of ***national and subnational responses***, including the relationship between decision-makers and sources of scientific advice, the timeliness of decisions taken, the coordination between subnational and national government responses and the degree of decentralization in national health systems, whether there were perceived trade-offs between economic costs and public health responses, the role of communities in shaping responses, and the extent to which the international system was able to respond to national needs, including through the quality and consistency of its advice.

- The Panel will continue to explore the part played by ***regional structures*** and institutions in the response and their potential role in the future in relation to pandemic preparedness and response.

3. Understand the impact



The pandemic's impact has spread widely, but not randomly. Decisions taken at national and global levels have shaped its severity. The direct impact of the pandemic on health services has been a key concern, but so too have been the indirect impacts on other health conditions. A disturbing general trend has emerged which has seen low- and middle-income countries disadvantaged in access to essential supplies and suffering more gravely than high-income countries in reduced access to other health services and increased economic impacts. In many countries, a trust deficit has been a significant factor impeding effective COVID-19 responses.

Observations

National leadership and coordination

It is overwhelmingly evident to the Panel that ***choices made*** at both national and subnational levels of what policies and measures to implement, by whom, and when, have shaped the severity of the epidemic in each country. Very different outcomes achieved by countries with similar preparedness planning suggests that there is not some simple, one-size-fits-all formula which guarantees response success. Rather, there is a complex interaction between technical and other capacities and political and decision-making systems which determines the willingness to take action.

This pandemic has shown that safeguarding the health of people, societies, and environments, and their ability to cope, is an agenda which transcends the health sector and requires ***whole-of-government and whole-of-society*** responses. Initial evidence suggests that high-level coordination has been a key determinant of response success. The importance of this and other determinants of success will be systematically examined by the Panel.

Impact on health services

The Panel has seen evidence suggesting that international, regional and national institutions have struggled to deliver the necessary responses, including to activate pandemic alert measures, deploy ***essential supplies*** (personal protective equipment, oxygen, ventilators etc.), and build surge capacities for testing, isolation, contact tracing, and care. Access to response measures has been inequitably distributed. A survey[6] by

... choices made at both national and sub-national levels of what policies and measures to implement, by whom, and when, have shaped the severity of the epidemic in each country.

Nurses rise to the challenge, at a cost

Nurses entered 2020, "The Year of the Nurse and the Midwife", with a six-million-person deficit in the global workforce. In a year meant to highlight their work, leadership and the need for more investment, nurses instead had to face the challenge of a new, rapidly spreading virus against which they too often had too little protection.

During an Independent Panel "Exchange" town hall with nurses in December, the Panel heard about the ways in which nurses adapted quickly, despite working in systems often ill-prepared and ill-equipped to support them or the patients for whom they were caring. The Exchange meeting, coordinated with the International Council of Nurses (ICN) and Nursing Now, and attended by about 250 nurses from around the world, heard how nurses stepped in to innovate to help reorganize hospital and health care services, manage COVID-19 patients, provide health messaging and increasingly, establish and staff vaccine delivery systems.

The Panel also heard about the direct deadly toll COVID-19 has taken on nurses, with 1500 nurse deaths as of October 2020 (now thought to be over 2000). The ICN has called for standardized and systematic collection of numbers of health care worker infections and deaths — not only to measure the health toll on workers, but also to understand the dynamics of disease transmission. The ICN has also called for COVID-19 to be labelled an occupational disease.

Mental health is also an issue. Seventy per cent of national nursing associations are reporting high levels of mental health distress amongst nurses, together with reports of physical exhaustion, verbal and physical attacks and discrimination. There is concern that the stress of COVID-19 will result in nurses close to retirement leaving the profession early.

The Panel heard that 2021 should be the year to 'act and invest' in nurses, ensure they have a seat at decision-making tables, educate more nurses, and support and retain those already in the workforce.

The Independent Panel EXCHANGE
Listening, Learning:
Your Experience with COVID-19

WHO found low-income countries rarely able to access enough personal protective equipment and treatment (dexamethasone) in the first half of 2020, and many low- and middle-income countries have faced persistent constraints in accessing oxygen, treatments such as monoclonal antibodies, and diagnostic tests, including reagents.

The burden of COVID-19 cases has threatened to overwhelm clinical services, not only during the initial peaks of the epidemic but also as subsequent waves have hit. These burdens have taken a toll on front line workers in a range of settings, including community treatment centres, primary health centres, and hospitals. The impact on all staff in these settings has been substantial — not only the direct toll of deaths and illness among frontline staff, but also the psychological toll as a result of dealing with the crisis over a prolonged period.

Community engagement has been a successful strategy to enhance national responses. This has included the deployment of community health workers; for example, the cohort of 50 000 community informants established for polio detection in Nigeria was also engaged in the COVID-19 response, Thailand's network of village health workers has been a key support to the response there, and India has drawn on a cadre of a million women social health activists. The importance of community engagement, however, extends well beyond inputs to the traditional health system.

Systems for health require substantive community engagement at every step of pandemic preparedness and response, from early detection and alarm to the dissemination of reliable information throughout a community, including effective ways to prevent, care for and treat infection. We cannot overcome resistance to masks and vaccines or the misuse of therapies through traditional health care systems alone. The Panel will continue to investigate the best models of community engagement, and whether there has been a failure to use community responses as effectively as possible in the COVID-19 response.

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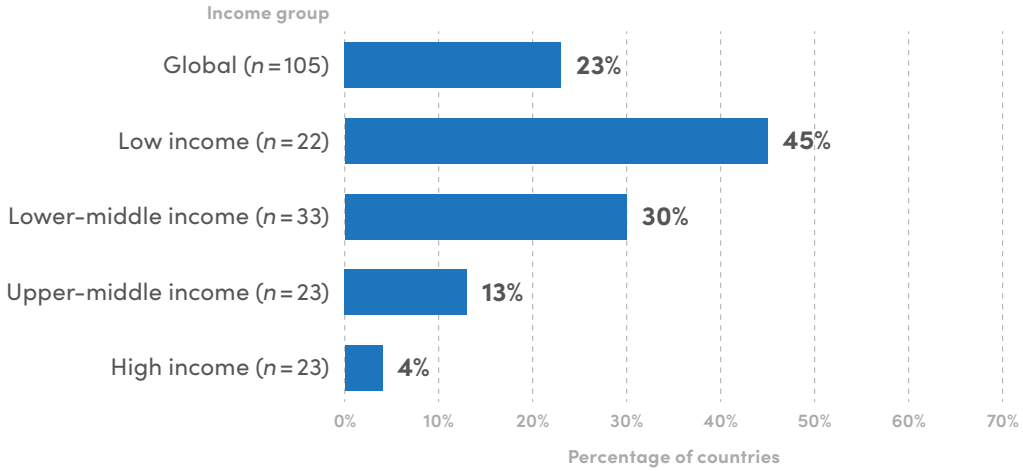
Alongside the direct impacts of COVID-19 on health, 90% of 105 countries surveyed by WHO have reported experiencing ***non-COVID-19 health service disruptions***.[7] Findings from that survey show these disruptions have been substantial in low- and middle-income countries with the greatest impacts on outpatient services, prevention/screening and community-based services. The initial evidence suggests that recovery following initial disruptions has been stronger for campaign-based services such as immunization and anti-malaria programmes, suggesting lessons that can be applied to accelerate service recovery and building back better.

Apollo Mangula, a community health worker in Uganda, has shifted his work to educate his community about COVID-19. (Photo: Miriam Watsemba)

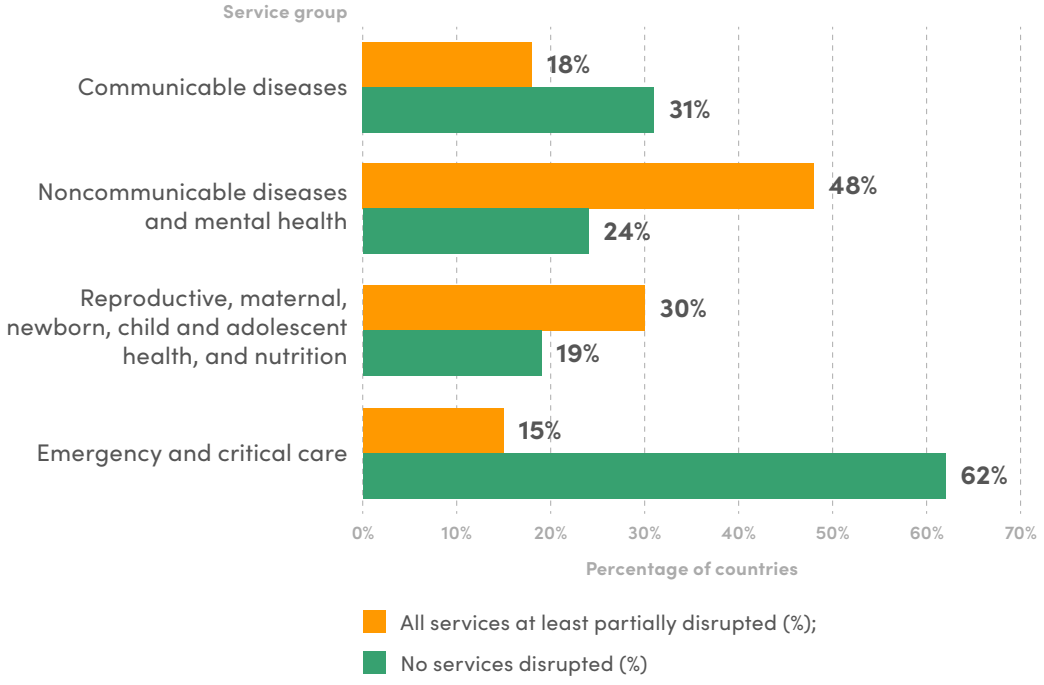
There have also been service disruptions in high-income countries across a range of both communicable and noncommunicable diseases, although only 4% of high-income countries reported disruptions to at least three-quarters of their services, compared to 45% of lower income countries which did so.

Figure 5: Percentage of countries reporting at least partial disruption in at least 75% of services (n=105 countries)



Source: World Health Organization, Pulse survey on continuity of essential health services during the COVID-19 pandemic: interim report, 27 August 2020.

Figure 6: Percentage of countries reporting disruptions across entire service groups (n=105 countries)



Source: World Health Organization, Pulse survey on continuity of essential health services during the COVID-19 pandemic: interim report, 27 August 2020.

Economic impact

Prioritizing health or prioritizing the economy has proved to be a false dichotomy. A preliminary observation by the Panel is that economic outcomes have been better in economies where strict public health control measures have been implemented effectively, and in those countries health outcomes measured by the numbers of cases and deaths have been substantially better. The same pattern appears to apply to the pace of recovery, with more strict public health measures being followed by stronger economic recoveries. While the Panel is cognizant that the pandemic is ongoing, and so the long-term trends in relation to economic impact are yet to be definitively established, we nevertheless believe that sufficient evidence exists to be confident that decisions to implement strict public health control measures will leave economies at least no worse off than those that do not implement these measures, while averting significantly more death and illness.

There are critical feedback loops between epidemic control and economic activity. For example, there is evidence that unless people feel safe, they will be reluctant to re-engage in key economic and social activities, such as schooling or commerce. Similarly, social protection and labour regulation measures are key levers to reduce transmission risk.

...sufficient evidence exists to be confident that decisions to implement strict public health control measures will leave economies at least no worse off than those that do not implement these measures, while averting significantly more death and illness.

The world's total GDP was US$ 87.8 trillion in 2019 (World Bank). At the end of 2019 the world economy was expected to grow 3% in 2020. Instead, as a result of the pandemic and other factors indirectly related to it, a 4% contraction is expected. This means a loss of 7% in global GDP amounting to some US$ 6 trillion. This is clearly a case where billions can save trillions, implying rates of return that are not in the tens or hundreds, but in the thousands.

Impact on communities

The COVID-19 crisis has revealed a ***trust*** deficit between people, institutions and leadership in some countries. The trust deficit has also fuelled the infodemic and set up a vicious cycle of disinformation and inadequate response. The profound gap in trust combined with the use and impact of social media disconnected from other methods of managing public health information is another illustration of the failure of analog responses in a digital age.

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In most societies, disadvantage has been exacerbated by the pandemic, with deepening inequalities in health access and infections disproportionately affecting those in more precarious or informal employment. Migration brings particular vulnerabilities in access to both health services and social protection. As has been documented by the International Organization for Migration, migrants and forcibly displaced persons, including those affected by conflict, often contend with poor living and working conditions, face discrimination or exploitation, or do not benefit from social protections. Only 43% of countries provide access to health services to all migrants regardless of their legal status.[8]

The United Nations High Commissioner for Human Rights has drawn attention not only to the neglect of rights to health and protection in the pandemic, but also to ***rights abuses*** as some governments have restricted rights to free expression, to assemble, and to participate in public life, not to reduce the spread of the virus but rather in order to shut down political dissent and criticism under the cover of the COVID-19 response.[9]

... disadvantage has been exacerbated by the pandemic, with deepening inequalities in health access and infections disproportionately affecting those in more precarious or informal employment.

Priorities for the Independent Panel's continued work

- The Panel will document the magnitude of the continued disruption of ***other essential health services***, such as routine vaccinations, maternal and child health services, cancer diagnostics and treatments, and sexual and reproductive health services. It will study what mitigation measures have been put in place, and, where evidence exists, it will report on the impact of these measures.

- The Panel will examine measures taken to address human resource deficits, including best practice in expanding the pool of trained health workers, addressing the movement of health workers between countries, and service models which extend health service delivery modalities to overcome limitations in supply.

- The Panel will take stock of and analyse the climate that has led to the COVID-19 ***infodemic***. The Panel will consider the adequacy of the measures taken by international and national systems to shape the communication environment and propose ways in which it could be strengthened.

Social protection measures, including ensuring food security, are a factor in mitigating the wider impacts of the pandemic. (Photo: Katumba Badru Sultan)

- Evidence considered by the Panel suggests that ***community*** engagement in the response has not to date been as widespread or effective as it could have been, and this will be a key avenue for more detailed inquiry. Civil society actors have proven innovative and resilient in pandemic response; yet it appears that this resource has been neglected by many decision-makers and response institutions.

- Both the ***economic impact and the social impact*** of the pandemic will be the subjects of further analyses by the Panel, including the specific impact on women and young people. The Panel will document the devasting financial and social costs to humanity and societies, and will also endeavour to shed light on the underlying structural factors and pre-conditions that impacted outcomes.

4. Change for the future

The COVID-19 pandemic constitutes the most acute crisis across health and economic dimensions faced by the global architecture since it was established following the Second World War. The system has struggled to meet the challenge of the pandemic. Global leadership has been exercised weakly. There has been greater reliance than ever before on WHO, and there have been major new needs in relation to coordinated supply, accelerated development of vaccines and other counter measures, and rapidly deployable financing. The Panel will consider the most critical steps that can be taken to address the deficiencies revealed by the pandemic.

Observations

Global and regional leadership

Never before in modern times has ***the international community*** been called on to respond to a global health crisis of this magnitude and with such widespread consequences. The international system's response has been found wanting in many respects. It took the members of the United Nations Security Council until July 2020 before they could agree on any response resolution, and even then it was limited in scope and ambition. It was not until almost one year into the crisis that the United Nations General Assembly convened a Special Session on the pandemic; it too was limited in its tangible outcomes.

WHO has been providing global leadership for the international health response. The existence of the WHO Health Emergencies Programme has enabled much more rapid and stronger support from WHO in comparison to its response during the 2014–2016 Ebola outbreak. The newly established Science Division has brought more rigour to the work of the Organization and has enabled a wider range of scientific advice to be collated systematically and made available at a more rapid pace than ever before. At the same time, the pandemic has tested WHO's capacities to broker globally effective solutions to new problems, such as the global race for personal protective equipment. It is too early in the course of the Panel's work to come to a definitive judgement concerning the exercise by WHO of its various functions in pandemic preparedness and response. It is however abundantly clear that the world is more reliant on an effective WHO than ever before in the Organization's history.

The Panel has also been struck by the limited effectiveness of significant international groupings in having an impact on the course of this pandemic. For example, both the G7/8 and the G20 have given priority in past meetings to health security and pandemic preparedness, including by running simulation exercises, but their action in the COVID-19 pandemic has been largely reactive, as has that of the G77.

Regional responses have varied. While there have been differences of emphasis, countries in the Asia-Pacific regions have applied broadly similar and rigorous public health measures, supported relatively

consistent messaging, and implemented border closures. Exemplary leadership has been provided by the Africa Centres for Disease Control and Prevention, supported by rapidly convened and sustained high-level political leadership across the continent, with concerted attention to gaps in response supplies and capacities. The Panel will continue to investigate how regional responses have had an impact on country outcomes in facing COVID-19.

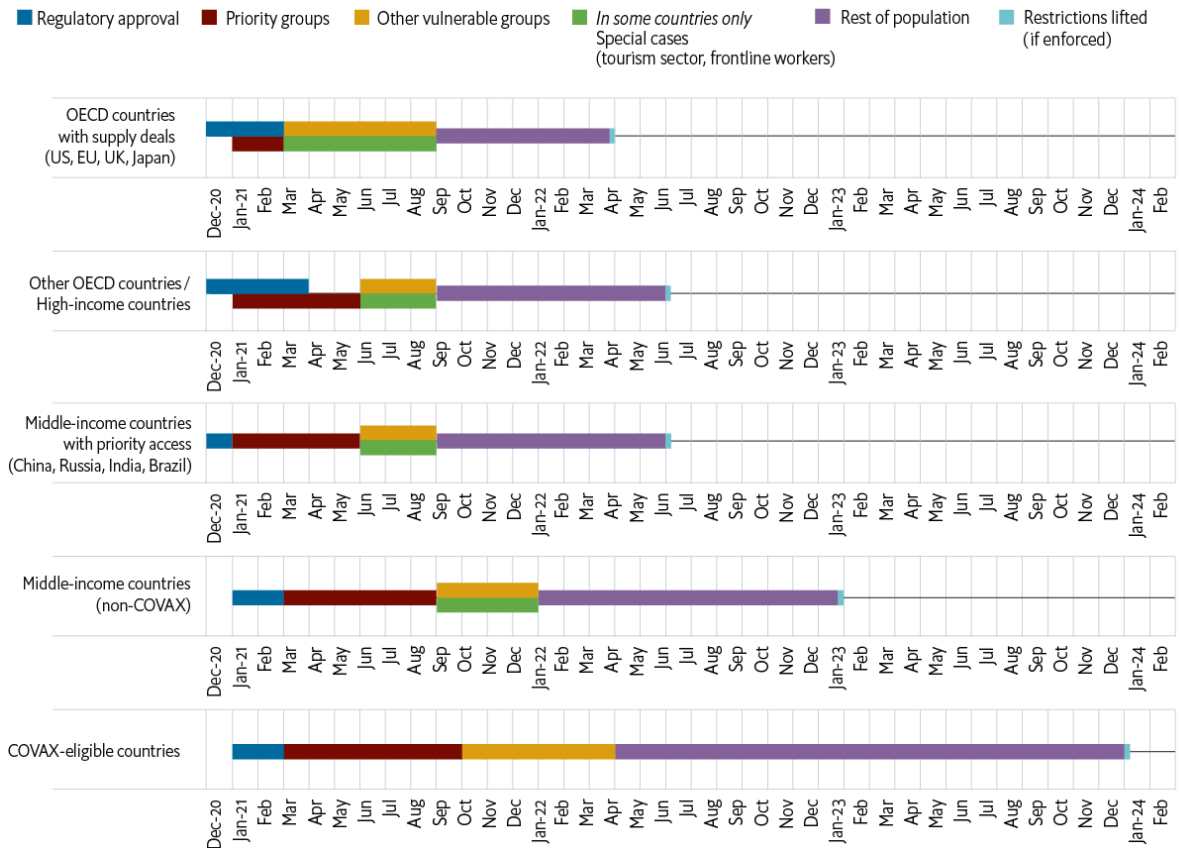
Major weaknesses in the global supply chain have been revealed, including the absence of effective frameworks to ensure equitable access, poor stockpiling, over-reliance on single sources, hoarding, and logistics limitations.

Essential supplies

Major weaknesses in the ***global supply chain*** have been revealed, including the absence of effective frameworks to ensure equitable access, poor stockpiling, over-reliance on single sources, hoarding and logistics limitations (it is estimated that by June 2020, only around one fifth of global demand for personal protective equipment and tests kits had been met). The United Nations COVID-19 Supply Chain System was a welcome addition to supply modalities for lower-middle-income countries, accounting for around half of supplies obtained, but it took three months to become fully operational and roles should have been more clearly defined and better fitted to the capabilities of the various organizations responsible for governance and implementation.

Essential supplies, including oxygen, were insufficient in many countries. (Photo: Angela Ponce)

Figure 7: COVID-19 vaccine rollout projections



Source: The Economist Intelligence Unit, January 2021.

Trade and travel restrictions have had a negative impact on the flow of essential commodities but have most likely been helpful in curbing transmission. The perceived need to balance disease containment against the counter-veiling desire not to constrain trade and travel is as old as the history of quarantine itself. A core element of the International Health Regulations (2005) is to require health events where there is a significant risk of international travel or trade restrictions to be notified to WHO. In its wider investigation of the impact of advice issued to countries, the Panel will pay particular attention to recommendations concerning travel, alongside its continuing liaison with the Review Committee on the functioning of the International Health Regulations (2005) during the COVID-19 response.

Diagnostics, vaccines and therapeutics

Global institutions, with the support of States and non-State actors, have rapidly developed platforms for coordinated innovation in the development of new tools, particularly ***diagnostics, vaccines and therapeutics***. The Access to COVID-19 Tools Accelerator (ACT-A) platform has been deployed rapidly and in largely collaborative fashion among institutions across its research and development (R&D) acceleration, procurement and market shaping efforts. Major implementation challenges remain, however, including ensuring equity and the reflection of country and civil society voices, and operating within weaker institutional arrangements in the non-vaccine pillars. In addition, the critical funding gap faced by ACT-A threatens to jeopardize its success and requires urgent resolution.

There are major ***risks*** that countries with less capacity and ability to self-finance vaccines and therapeutic advances will be left out. If that transpires, the consequence will be a two-tier world, divided between countries where COVID-19 is relatively controlled, and those where COVID-19 adds to the overall burden of disease as yet another ongoing, endemic disease. The effective flow and access of new diagnostics, therapeutics, and vaccines to the populations most in need, based on equitable public health criteria, must be the central plank of international co-operative efforts. Equitable access to and participation in the knowledge economies driving innovation will be a critical lever of change.

Financing

Pandemic preparedness financing has been treated as a cost rather than an investment, and as a result has been neither secure nor sustainable. In relation to response, it appears on preliminary evidence considered by the Panel that ***financial mechanisms*** at the global level were too slow and uncoordinated to provide the necessary financial support to enough countries in a timely fashion to enable them to escalate their responses and to mitigate pandemic impacts sufficiently.

WHO finds itself required to engage in perpetual fundraising efforts, to the detriment of its ability to concentrate on the delivery of its core priorities, including in pandemic preparedness and response.

There has been a lack of ignition funding and risk capital to accelerate R&D and manufacturing. Weaknesses in the financing infrastructure also extend to WHO, which finds itself required to engage in perpetual fundraising efforts, to the detriment of its ability to concentrate on the delivery of its core priorities, including in pandemic preparedness and response.

Priorities for the Independent Panel's continued work

- The Panel will further its understanding of the institutional arrangements under which ***the international system*** exercises its mandates, including the governance of pandemic preparedness and response, in order to identify weaknesses and consider ways in which the global health architecture can be optimized.

- The Panel will develop a definition of the ***functions*** of the international system in pandemic preparedness and response, together with an assessment of which actors and mechanisms are needed for the performance of these functions.

- The Panel will examine ***models of effective solutions to complex collective action problems*** which exist elsewhere in the international sphere, including in climate change adaptation, environmental protection and security, and weapons control. Potential avenues to reinforce transparency and compliance with international agreements

will be analysed, including in relation to the International Health Regulations (2005). The contribution and combination of both State-driven and grassroots, community-led interventions will be assessed.

- Critical issues still to be examined include the roles and mandates of the ***World Health Organization***, and the ways in which leadership and governance functions are exercised to achieve timely and robust accountability internationally and from Member States. The Panel will also consider whether clear authority and decision-making can be exercised by WHO with the necessary speed in the context of outbreaks with pandemic potential, and the apparent disconnect between expectations of the Organization and the manner and quantum of its funding.

- The Panel is reviewing the ecosystems that have evolved to respond to the needs for ***essential supplies***, as well as for the development of novel ***diagnostics, treatments and vaccines***. Critical issues to be examined include whether there is a need for a predefined way of working, including clear roles and responsibilities, to be kept in readiness for the future. The Panel will analyse carefully the gap between commitments to equitable distribution and the realities as they have been experienced in the COVID-19 response.

- The Panel will further review needs for ***international funding*** — for what and by whom, as well as the source of funding, recognizing the need to think beyond official development assistance when addressing financial needs for global common goods.

At the height of nationwide and local lockdowns, nearly 1.5 billion schoolchildren were affected by school closures. (Photo: Rosem Morton)

About the Independent Panel

The Independent Panel for Pandemic Preparedness and Response was established by the WHO Director-General in response to World Health Assembly resolution WHA/73.1 of 19 May 2020 requesting him *inter alia* to "initiate an independent, impartial and comprehensive evaluation of the international health response" to COVID-19. In July 2020, the Director-General requested former Prime Minister of New Zealand, the Right Honourable Helen Clark, and the former President of Liberia, Her Excellency Ellen Johnson Sirleaf, to be Co-Chairs of the Panel. The Co-Chairs selected 11 distinguished individuals with diverse backgrounds and experience to comprise the Panel. All are participating in their personal capacities and are not representing any governments or organizations.

The mission of The Independent Panel is to provide an evidence-based path for the future, grounded in lessons of the present and the past, to ensure countries and global institutions, including specifically WHO, effectively address health threats. The Panel has to date held three full meetings, on 17 September 2020, 20–21 October 2020 and 16–17 December 2020. Reports of the Panel's meetings and other relevant documents have been published on the Panel's website (www.TheIndependentPanel.org). Due to the exigencies of the pandemic, and in common with enterprises and groups across the world, the Panel has conducted its meetings and consultations virtually.

The areas of concern and key questions specified in World Health Assembly resolution WHA73.1 provide the basis for the Terms of Reference adopted by the Panel. The Panel's Program of Work builds on the Terms of Reference and is organized around four main interconnected themes of enquiry:

i. **Build on the past:** Learn from previous epidemics and pandemics and the status of the system and actors pre-COVID-19.

ii. **Review the present:** Determine an accurate and verified chronology of events and activities in relation to the COVID-19 pandemic; analyze recommendations made by the WHO and responses by national governments.

iii. **Understand the impact:** Review how health systems and communities responded, and assess the direct and indirect impacts of both the pandemic and response measures.

iv. **Change for the future:** Develop a vision for a strengthened international system ideally equipped for pandemic preparedness and response including both the World Health Organization and the international system at large.

In applying the highest standards of quality and rigour in its analysis, the Panel is using a variety of methods to conduct its work including systematic reviews of published data, mapping and analysis of both academic and policy literature, in-depth interviews, symposia and expert consultations, commissioned analysis and selected case studies.

The Panel has established a programme of stakeholder engagement which includes open information exchanges, interactive discussions, brief opinion surveys and open invitations for submissions through its website. The Panel is seeking engagement and perspectives from as many stakeholders as possible in order to share knowledge and draw lessons from around the world. Regular briefings of Member States are conducted through regional groupings. While the opportunity has been created for submissions and other input to the Panel to be made confidentially, the Panel continues to be committed to working in a manner that is as open and transparent as possible, including by publishing on its website reports of the Panel meetings and other key progress documents.

Co-Chairs and members

Co-Chairs

Her Excellency Ellen Johnson Sirleaf

The Right Honorable Helen Clark

Panel Members

Dr Mauricio Cárdenas

Ms Aya Chebbi

The Honorable Mark Dybul, MD

Professor Michel Kazatchkine

Dr Joanne Liu

Ms Precious Matsoso

The Rt Hon David Miliband

Ms Thoraya Obaid

Ms Preeti Sudan

Professor Ernesto Zedillo

Professor Zhong Nanshan

Endnotes

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