Respiratory pathogens pandemic preparedness
Perspectives on research priorities and key measures of success

Meeting report, Belfast, Northern Ireland, United Kingdom
28 September 2022
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## Abbreviations and acronyms

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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CDC</td>
<td>United States Centers for Disease Control and Prevention</td>
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<tr>
<td>COVID-19</td>
<td>coronavirus disease 2019</td>
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<td>HEPR</td>
<td>health emergency preparedness, response and resilience</td>
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<td>SARS-CoV-2</td>
<td>severe acute respiratory syndrome coronavirus 2</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Summary

On 28 September 2022, the World Health Organization (WHO) convened a meeting on respiratory pathogen pandemic preparedness in Belfast, United Kingdom. The 2-hour, wholly in person event brought together country respiratory disease control managers, pandemic planning policymakers and academics involved in pandemic planning. The purpose of the meeting was to discuss global guidance on respiratory pathogen pandemic preparedness, drawing on lessons learned from the coronavirus disease 2019 (COVID-19) pandemic. Two moderated panel discussion sessions served to solicit inputs to inform WHO’s guidance planning components on research priorities in respiratory pathogen pandemic preparedness, as well as key measures of success, monitoring and evaluation.

Participants identified existing capacities for respiratory pathogens that should be leveraged to ensure efficiency, both for research efforts and for monitoring overall preparedness. Risk assessments should be used to inform research priorities, including developing countermeasures for various respiratory pathogens with pandemic potential. In addition, enhanced linkages are needed between research networks and public health networks to better inform preparedness planning. When implementing preparedness plans, monitoring preparedness metrics is critical to identify gaps in capacities and resources. Selected measures should be holistic, spanning coordination, surveillance, community engagement, clinical care and access to countermeasures, and should focus on functional capacities. Finally, participants acknowledged that it is critical to consider national context, including operational capacity, when setting research and monitoring priorities.

1. Background

Respiratory pandemics are unpredictable, but recurring events that have major global consequences for human health and economic well-being. Preparedness and response planning are critical in helping to mitigate the impact of a pandemic. Working with countries and partners, WHO is developing an approach, guidance and resources that enable holistic respiratory pathogen pandemic preparedness. This includes building on lessons learned from COVID-19 and other recent emergencies, as well as the application of earlier guidance, including pandemic influenza risk management (1) and preparing for national response to health emergencies and disasters (2).

The new pandemic planning approach accounts for commonalities in respiratory pathogen pandemic preparedness and response, such as in emergency coordination, surveillance, clinical management, risk communication and community engagement, and pandemic product deployment, so that pathogen-specific components are embedded and advanced accordingly. The approach will support countries and other stakeholders to advance respiratory pathogen preparedness, both pathogen-agnostic and pathogen-specific elements, efficiently and coherently.

On 27 April 2022, WHO published Strengthening pandemic preparedness planning for respiratory pathogens: a policy brief (3), which encouraged countries and partners to undertake an integrated approach to respiratory pathogen pandemic preparedness planning. WHO also commenced a global process to develop a guidance document titled Preparedness and resilience for emerging threats module 1: planning for respiratory pandemics. A briefing about the guidance development was held on 26 July 2022 and engaged participants from...
81 countries. A first draft of the guidance was then circulated to technical stakeholders at the country, regional and global level on 8 August 2022 (4).

Further consultations with countries and partners involved in respiratory pathogen preparedness are needed to inform WHO’s guidance development and to advance this overall body of work. This meeting provided the opportunity to further engage stakeholders, to advocate for the new integrated approach for respiratory pathogen preparedness and to discuss opportunities for strengthening key aspects, including research priorities and programme implementation.

2. Objectives of the meeting

The meeting intended to achieve four key objectives:

- set the scene and introduce the integrated approach for strengthening respiratory pathogen pandemic preparedness, building on lessons learned from previous health emergencies;
- gather perspectives on lessons learned during previous pandemics and how such lessons will be applied towards preparing for future respiratory pathogen pandemics;
- discuss research priorities in respiratory pathogen pandemic preparedness; and
- gather inputs on the key measures of success, monitoring and evaluation of respiratory pathogen pandemic preparedness.

3. Meeting proceedings

The meeting took place on 28 September 2022 in Belfast, United Kingdom. In the 2-hour proceedings, the meeting provided participants with an overview of plans for global guidance on respiratory pathogen pandemic preparedness, drawing on lessons learned from the COVID-19 pandemic. Following on from this, two moderated panel discussion sessions served to solicit ideas and discuss research priorities in respiratory pathogen pandemic preparedness, as well as key measures of success, monitoring and evaluation. The agenda is available in Annex 1.

3.1 Welcome and scene-setting presentation

The opening session introduced the new, innovative approach to integrated respiratory pathogen pandemic planning. Drawing on lessons learned from COVID-19, the approach involves leveraging systems, capacities and resources where they exist, building on both pathogen-specific and pathogen-agnostic elements to prepare for known respiratory pathogens and a novel respiratory disease X.

To support the roll-out of this approach, it was mentioned that WHO is working on a variety of products, including: an upcoming guidance document on planning for respiratory pandemics, a commissioned report on lessons learned from COVID-19, a mosaic respiratory surveillance framework, a variety of country case studies, simulation exercises, and other partner and country materials.

The forthcoming guidance document (4) has four main objectives. They include:
informing and guiding countries and partners; providing a structure for planning; outlining functional capacities; and providing an outline for a preparedness plan. The working draft of the guidance document was previously shared with a range of technical stakeholders at the global, regional and country level on 8 August 2022. The following panel sessions were intended to solicit further inputs to inform the guidance document.

3.2 Panel Discussion 1: Research priorities in respiratory pathogen pandemic preparedness

The first panel session focused on research priorities to facilitate preparedness for respiratory pathogens. The intended outcomes of the session were, first, to identify what key research activities are needed for preparedness and, second, to identify the role that government and other stakeholders have in facilitating research efforts. Panelists represented perspectives from academia, ministries of health and donor agencies. A wide variety of inputs from audience members, spanning ministry of health representatives to participants from nongovernmental and international organizations, were discussed. The following points were raised with respect to research needs:

- During the inter-pandemic period, it is important to conduct regular risk assessments on respiratory pathogens with pandemic potential.
- More research is needed to explore commonalities in transmission dynamics for various respiratory pathogens.
- There is a need to expand available diagnostic tools for respiratory pathogens with pandemic potential, including rapid diagnostic tests and viral production assays.
- More research is needed on vaccines and antivirals for respiratory pathogens with the potential to cause a pandemic, including how to incentivize production and how far down the development pathway certain countermeasures should be taken during the inter-pandemic period.
- Focusing on non-pharmaceutical interventions is a key priority. This is a particular need in low-resource settings, where data on such interventions are lacking.
- Finally, standardized research protocols need to be defined during the inter-pandemic period that will allow rapid response in pandemic times.

To facilitate key research efforts, the following actions were suggested for governments and other key stakeholders:

- Leverage existing systems and partnerships that resulted from previous pandemics. An example that was referenced was adapting SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) genomics capacities moving forward.
- Focus on improving risk communications with the public, including communicating why different countries take different decisions, and explaining the science behind the policy.

“We need to be very clear about the science that goes into informing a country’s decision.”

Professor Wendy Barclay, Imperial College

- In low-resource settings, enhance linkages to find expert networks for specific research subject areas to share workloads and expertise.
- Improve overall linkages between science networks and public health networks. Research needs to be better connected to public health planning.

Ultimately, it was noted that research needs are variable across regions and countries, and it is important to consider national resources and capacities when determining what research needs to be done.
3.3 Panel discussion 2: key measures of success, monitoring and evaluation of respiratory pathogen pandemic preparedness

The second panel session focused on monitoring and evaluation. The intended outcomes of the session were to identify why monitoring respiratory pathogen pandemic preparedness is important and what should be monitored to determine preparedness. The panelists represented perspectives from ministries of health and academia as well as the private for-profit sector. The following points were raised regarding the importance of monitoring:

- Noting the increased frequency of respiratory events in recent years, monitoring is important to identify and address gaps in preparedness.

“Research is contextual. We need to understand how it will function at a national level.”
Dr. Ghazi Kayali, Human Link

- There is a need to think more holistically and to come up with different measures that look at operational capacity. This goes beyond measuring whether or not a country has a plan; monitoring should, for example, focus on whether a country has the ability to diagnose a disease, or whether they are reporting their surveillance data on a routine basis.

“We need to measure tangible, functional capacity”
Ms. Ann Moen, United States Centers for Disease Control and Prevention

- There is also a need to monitor preparedness of national coordination mechanisms, as it was noted that many did not function as intended during the COVID-19 pandemic.

- Forming linkages with the private for-profit sector is critical for monitoring the development and availability of countermeasures, such as antiviral stockpiles and vaccines for various respiratory pathogens.

- Measures around community engagement are critical for monitoring and evaluating overall preparedness.

“We are only as strong as the weakest link.”
Ms. Rachael Pung, Ministry of Health, Singapore, and London School of Hygiene and Tropical Medicine, United Kingdom of Great Britain and Northern Ireland

- Monitoring is also important to inform decision-making, including strategic decisions on resource allocation based on operational capacity.

“We’re talking about key measures of success, to really have success, you have to have the community on board”
Dr Supriya Bezbaruah, World Health Organization

It was noted that while cross-cutting tools such as the *International Health Regulations (2005)* (5) are necessary to measure preparedness, monitoring needs to be specific to the respiratory pathogen or control programme. With respect to what should be monitored to determine preparedness, the following inputs were made:

- Measuring whether or not a country has a plan; monitoring should, for example, focus on whether a country has the ability to diagnose a disease, or whether they are reporting their surveillance data on a routine basis.

- Forming linkages with the private for-profit sector is critical for monitoring the development and availability of countermeasures, such as antiviral stockpiles and vaccines for various respiratory pathogens.

- Measures around community engagement are critical for monitoring and evaluating overall preparedness.

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- Noting the increased frequency of respiratory events in recent years, monitoring is important to identify and address gaps in preparedness.
4. Conclusions and next steps

Meeting participants reiterated that many valuable lessons can be drawn from the COVID-19 pandemic as we work towards a new, integrated approach to respiratory pathogen pandemic planning. Defining key research priorities and monitoring needs are critical steps for preparedness. Accordingly, in the closing session, the following key takeaways were identified:

- Moving forward, existing capacities for respiratory pathogens should be leveraged to ensure that preparedness efforts are efficient.
- Risk assessments play a pivotal role in all stages of preparedness and response, and should be routinely used to inform the development of diagnostics, therapeutics and other countermeasures for various respiratory pathogens with pandemic potential.
- Enhanced linkages between research networks and public health networks are needed to better inform planning.
- There is a need to think holistically in monitoring preparedness, including elements within coordination, surveillance, community engagement, clinical care and access to countermeasures. Moreover, measures should focus on tangible, functional capacity.
- Contextual considerations are critical when defining both research needs and monitoring and evaluation measures.

Meeting inputs stimulated ideas on research and monitoring components in the context of WHO’s planned guidance (4). Version 1.0 of the guidance was published in March 2023.
References


Annex: Agenda

Master of Ceremonies: Dr Isabel Bergeri, WHO

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<tr>
<th>Time (BST)</th>
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<tr>
<td>17:30-17:50</td>
<td><strong>Welcome and scene-setting presentation</strong></td>
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<td>Dr Gina Samaan, WHO</td>
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<td>17:50-18:35</td>
<td><strong>Panel Discussion 1: Research priorities in respiratory pathogen pandemic preparedness</strong></td>
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<td>Moderator: Mr Christopher Chadwick, WHO</td>
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<td>Professor Wendy Barclay, Imperial College</td>
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<td>Professor Cheryl Cohen, University of the Witwatersrand; National Institute for Communicable Diseases, South Africa</td>
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<td>Dr Peter Hart, Wellcome Trust</td>
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<td>18:35-19:20</td>
<td><strong>Panel Discussion 2: Key measures of success, monitoring, and evaluation of respiratory pathogen pandemic preparedness</strong></td>
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<td>Moderator: Dr Aspen Hammond, WHO</td>
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<td>Dr Salah Al-Awaidy, Ministry of Health, Oman</td>
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<td>Dr Aeron Hurt, Roche</td>
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<td>Ms Ann Moen, CDC, United States of America</td>
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<td>Ms Rachael Pung, Ministry of Health, Singapore and London School of Hygiene and Tropical Medicine, United Kingdom</td>
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<td>19:20-19:30</td>
<td><strong>Next steps and closing</strong></td>
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<td>Dr Noore Alam, WHO Regional Office for the Eastern Mediterranean</td>
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