Strengthening partnerships for a safer world

Report of the global technical consultation on strengthening national health security through pandemic influenza preparedness planning

Hong Kong SAR, 10–12 December 2018
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This consultation report was written by Dr Sian Lewis.

Note to reader

This report aims to capture the key themes and messages to emerge from the presentations and discussion, rather than attempting a strictly chronological account of the meeting.

Some points were emphasized and re-emphasized across multiple sessions—in these cases, the points are not necessarily repeated in detail in the text for each session but do form the basis for key themes of the executive summary.

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<td>AFRO</td>
<td>WHO Regional Office for Africa</td>
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<td>APSED</td>
<td>Asia Pacific Strategy for Emerging Diseases</td>
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<td>AVMI</td>
<td>Africa Vaccine Manufacturers Initiative</td>
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<td>BARDA</td>
<td>Biomedical Advanced Research and Development Authority</td>
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<td>CDC</td>
<td>US Centers for Disease Control and Prevention</td>
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<td>EID</td>
<td>Emerging infectious diseases</td>
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<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<td>GAP</td>
<td>Global Action Plan for Influenza Vaccines</td>
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<td>GIP</td>
<td>Global Influenza Programme</td>
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<td>GISRS</td>
<td>Global Influenza Surveillance and Response System</td>
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<td>GPW13</td>
<td>WHO 13th Global Programme of Work</td>
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<td>IDA</td>
<td>International Development Association</td>
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<td>IDSR</td>
<td>Integrated Disease Surveillance and Response</td>
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<td>IEDCR</td>
<td>Institute of Epidemiology, Disease Control and Research</td>
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<td>IHR</td>
<td>International Health Regulations (2005)</td>
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<td>IHR MEF</td>
<td>IHR Monitoring and Evaluation Framework</td>
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<td>JEE</td>
<td>Joint external evaluation</td>
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<td>LMICs</td>
<td>Low- and middle-income countries</td>
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<td>MOU</td>
<td>Memorandum of understanding</td>
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<td>NAPHS</td>
<td>National action plan for health security</td>
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<td>NDVP</td>
<td>National deployment and vaccination plan</td>
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<td>NGO</td>
<td>Nongovernment organization</td>
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<td>OIE</td>
<td>World Organisation for Animal Health</td>
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<td>PCPI</td>
<td>Pandemic Capacity Progress Indicator</td>
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<td>PEF</td>
<td>Pandemic Emergency Financing Facility</td>
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<td>PIP</td>
<td>Pandemic influenza preparedness</td>
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<td>PIRM</td>
<td>Pandemic influenza risk management</td>
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<td>PISA</td>
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<td>PIVI</td>
<td>Partnership for Influenza Vaccine Introduction</td>
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<td>SAR</td>
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<td>WHO Regional Office for South-East Asia</td>
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<td>SOP</td>
<td>Standard operating protocol</td>
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<td>SPH</td>
<td>Strategic Partnership for IHR and Health Security</td>
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<td>TIPRA</td>
<td>Tool of Influenza Pandemic Risk Assessment (TIPRA)</td>
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<td>WHA</td>
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<td>World Health Organization</td>
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<td>WPRO</td>
<td>WHO Regional Office for Western Pacific</td>
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Executive summary

In December 2017, the international influenza and global health security networks came together for the first time in Accra, Ghana. There they committed to working together to align priorities and coordinate activities. One year later, the networks came together again through the WHO Strategic Partnership for IHR and Health Security (SPH), this time in Hong Kong SAR, to report on their progress and turn their commitment into action.

More than 110 participants, from 44 countries, attended the Global technical consultation on strengthening national health security through pandemic influenza preparedness planning in December 2018. Together, they discussed the crucial role that pandemic influenza preparedness has in supporting broader health security; explored practical tools and tactics for aligning planning and priorities at national, regional and global levels; and reached consensus on next steps in partnering for influenza preparedness and health security.

A crucial role for pandemic influenza

Influenza poses the largest pandemic threat in the world today and yet we remain ill-prepared. More than a hundred countries have no plan for pandemic influenza, and fewer than 13% have updated their plan in the past four years. We cannot predict where or when the next influenza pandemic will emerge but we can be sure that one will appear, and when it does, it could have grave social and economic consequences. This makes investing in pandemic influenza preparedness an essential task for all countries—big or small, rich or poor.

Investing in pandemic influenza preparedness makes sense for other reasons too: from the very first session of the Hong Kong SAR meeting, speakers and participants alike emphasized the crucial role that pandemic influenza preparedness has in supporting broader health security.

A recent WHO ‘cross-walk’ analysis of pandemic influenza preparedness plans highlights multiple examples of how preparedness serves to strengthen both horizontal and vertical health functions. Throughout the meeting, participants from various countries, including Australia, Bangladesh, Jordan and Sierra Leone showed how preparing for pandemic influenza builds capacities to strengthen health security. In Singapore, for example, the pandemic influenza preparedness plan helped the country manage a Zika outbreak in 2016. As one speaker put it: “there’s nothing you need to practice that you can’t practice with influenza.”

The very process of developing a preparedness plan is a capacity-building exercise in itself: it identifies key gaps in capacity and capability and increases awareness and understanding of key obstacles and opportunities. Perhaps most importantly, it forges relationships and builds trust across diverse sectors and stakeholders. The need for a multisectoral approach—to planning, preparedness and health security—was underscored in almost every session of the Hong Kong SAR meeting.

New tools and tactics

To support that multisectoral approach, and in line with the recommendations made in Ghana, WHO has developed a set of tools to strengthen influenza preparedness in alignment with national health planning and priorities. These were presented in Hong Kong SAR and include:

- A checklist for pandemic influenza risk and impact management and The essential
steps for developing or updating a pandemic influenza preparedness plan, both of which were published in 2018 and explicitly link pandemic influenza preparedness with IHR core capacities;

- The Global Influenza Strategy, which will launch in early 2019 and is linked to various global strategies and guidance for strengthening health security and all-hazards preparedness;
- IHR-PVS bridging workshops that strengthen collaboration across human and animal health;
- The new Pandemic Capacity Progress Indicator (PCPI) tool, designed to help implement the influenza checklist; and
- A country-owned and country-defined resource mapping and costing tool to help implement plans and mobilize resources for areas of need.

Simulation exercises also have a role in supporting collaborative preparedness, especially by testing functional capacities of the multisectoral plan, establishing lines of communication across departments, building confidence among stakeholders and assigning roles and responsibilities. Alongside after-action reviews, they form part of a virtuous cycle of learning that builds capacities to implement pandemic influenza preparedness plans and can help build capacities for other public health emergencies too.

A focus on vaccines

A key message to emerge from the discussion in Hong Kong SAR was that to ensure they are both practical and sustainable, pandemic influenza preparedness plans must leverage existing systems and structures as far as possible. This applies to all areas of a plan; but is particularly relevant to vaccines because being able to use vaccines during a pandemic relies on having an established seasonal influenza vaccination programme with strong local vaccine production and procurement capacities and robust deployment and delivery systems.

Several speakers highlighted how a strong seasonal vaccination programme helps enable a quick and effective response to a pandemic. In 2009, Mongolia was one of the first countries to receive pandemic vaccines from WHO, in large part because it had an existing vaccination programme it could use to deploy them.

Next steps

There is no doubt that members of the international influenza and health security networks remain as committed to working together as they were a year ago. Before they left Hong Kong SAR, they considered the specific actions that they, as countries, WHO and partners, could take to synergize pandemic influenza preparedness and health security planning.

Together, they identified 11 actions for individual countries, and made 7 recommendations to WHO and partners (see Table overleaf).

Six countries included further individual requests to WHO during closing statements at the meeting, asking for tailored WHO support to strengthen their national pandemic influenza preparedness plans.

Four of the countries — Ethiopia, Indonesia, Kenya and Uganda, all asked to receive a package of support to specifically review and refine their plan, using and testing the new PCPI and resource mapping tools.
Table: Summary recommendations

For countries

1. Promote day-to-day collaboration.
2. Prioritize influenza where possible.
3. Harness training opportunities.
4. Assign accountability for collaboration.
5. Establish roles and responsibilities across sectors.
6. Learn from others.
7. Make use of available tools.
8. Embed influenza-specific elements in all-hazards plans.
9. Review JEE reports to identify influenza-relevant elements.
10. Find openings for alignment in plans.
11. Share this meeting report.

For WHO and partners

1. Respect country priorities.
2. Coordinate better among yourselves.
3. Elevate the issue of pandemic flu.
4. Facilitate multisectoral collaboration and engagement.
5. Promote knowledge exchange.
6. Continue technical support to develop, review and refine plans (with use of PCPI and resource mapping tools).
7. Support long-term planning.
Introduction

The latest WHO general programme of work (GPW13) is built around a set of ‘triple billion’ targets, through which the organization aims to ensure that by 2023, one billion more people: benefit from universal health coverage; have better protection from health emergencies; and enjoy better health and well-being.

Central to all three targets, but especially the second, are countries’ commitments under the International Health Regulations (IHR, 2005) to work together for global health security. Through IHR (2005), all countries must build their capacities to detect, assess and respond to potential public health emergencies of international concern.

The need for such capacity building remains clear and present. From Severe Acute Respiratory Syndrome (SARS) and H1N1 influenza to Middle East respiratory syndrome coronavirus (MERS-CoV) and Ebola, the 21st century has seen dozens of newly emerging diseases with pandemic potential prompt a protracted global health crisis. At the same time, ‘old’ diseases like malaria, cholera, yellow fever, and Zika have re-emerged on an unprecedented scale, taking an enormous toll on the countries they reach.

Pandemic influenza in focus

Across all countries, influenza poses the greatest pandemic threat of all: there is no way of predicting where or when next influenza pandemic will emerge, but one is certain to appear, and once it does, the social and economic consequences could be very severe.

That is why, while IHR (2005) promotes an all-hazard approach to emergency preparedness and response; countries are increasingly being asked to specifically plan and prepare for pandemic influenza as well.

The two activities need not be mutually exclusive. Indeed, there is growing recognition that the essential capacities needed to manage the risk and impact of pandemic influenza are often the same as those required to manage broader health security threats.

Meeting objectives

1. **To further align approaches** to influenza pandemic preparedness planning and IHR (2005) capacity building.
2. **To share the latest WHO strategies** and guidance for health security and pandemic influenza preparedness planning.
3. **To foster knowledge exchange** in how to practically link pandemic influenza preparedness and health security planning.
4. **To introduce new, cost-effective, tools** for planning and implementing pandemic influenza preparedness.
Last year, in Ghana, the Strategic Partnership for IHR and Health Security (SPH) brought the international influenza and health security communities together for the first time to explore how they could align key priorities and coordinate activities (see ‘About SPH’ overleaf). Among the meeting outcomes were recommendations to countries to ensure up-to-date pandemic influenza preparedness plans and a request to WHO and partners to support their efforts (see Annex I).

One year later, SPH brought the networks together again, this time in Hong Kong SAR, to report on their progress and strengthen the connections made in Ghana.

More than 110 participants, from 44 countries, attended the Global technical consultation on strengthening national health security through pandemic influenza preparedness planning in December 2018. Together, they discussed the crucial role that pandemic influenza preparedness has in supporting broader health security; explored practical tools and tactics for aligning planning and priorities across the two; and reached consensus on next steps in partnering for influenza preparedness and health security.

All of the countries represented at the Hong Kong meeting had previously completed a Joint External Evaluation (JEE) and many had developed a National Action Plan for Health Security (NAPHS). The meeting was meant to encourage those countries to use their JEE experience to create or update their pandemic influenza preparedness plans with the support of WHO guidance that links the country JEE results with pandemic influenza preparedness planning.

Opening remarks

The meeting was ceremonially opened by Hong Kong SAR’s Director of Health, Dr Constance Chan Hon-yee, who emphasized the value of countries coordinating their efforts on pandemic influenza preparedness and health security.

“Preparedness planning is essential and crucial to any effective strategy for public health protection.”

Dr Constance Chan Hon-yee, Director of Health, Hong Kong SAR

Describing Hong Kong SAR’s efforts to implement IHR, Dr Chan spoke of how a robust preparedness plan for pandemic influenza that is refined through lessons learnt from experience and testing can help secure public health at local, regional and global levels.

Other speakers to address the opening session were: Dr Masaya Kato, WHO-WPRO representative; Dr Ann Moen, Chief of Influenza Preparedness and Response Unit, WHO; Dr Rick Bright, Director of U.S. Biomedical Advanced Research and Development Authority (BARDA); and Mr Ludy Suryantoro, Team Leader of SPH, WHO.

All speakers in the opening session emphasized the links between health security and pandemic influenza and called for greater strategic partnership and collaboration across the two communities as the key to unlocking better public health preparedness.
A call for strategic partnership

More than one speaker said influenza poses a unique threat. It is constantly evolving; it is impossible to predict when or where the next pandemic strain will emerge; and its origins and impacts stretch across sectors and borders. This makes pandemic influenza a global problem that can only be addressed through multisectoral and multinational partnership and collaboration.

There is a need to align planning and priorities for pandemic influenza with those for health security—at national, regional and global levels. In practice, this means that each country must take ownership for building capacities in both fields and align these as much as possible. WHO and partners, in turn, must commit to giving countries the support they need to align planning processes within their own borders as well as with regional and global planning and preparedness initiatives.

“Each country needs to take ownership of delivering and developing core capacities for IHR and pandemic influenza.”

Dr Ann Moen, Chief of Influenza Preparedness and Response Unit, WHO

A framework is needed for making connections, building relationships and nurturing partnerships across countries and sectors, as well as developing the tools and tactics required to build a pandemic influenza preparedness plan as part of an all-hazard strategy for national health security.

In all cases, partnership efforts for pandemic influenza preparedness and health security must be inclusive of all countries and communities and, in keeping with the UN’s 2030 Agenda for Sustainable Development, must ‘leave no one behind’.

“We must carefully plan for preparedness so that we do not leave anyone behind.”

Dr Masaya Kato, WPRO
I. Setting the scene

About this session

This session, which comprised a series of short presentations followed by a panel discussion, aimed to explore the convergence between pandemic influenza preparedness initiatives and efforts to strengthen broader health security.

**Chair:** Dr Lawrence Kerr, US Department of Health and Human Services

**Presenters:** Mr Ludy Suryantoro, WHO; Dr Ann Moen, WHO; Dr Wenqing Zhang, WHO; Dr Sutayut Osomprasop, World Bank.

**Panel discussants:** Dr Jackie Katz, US Centers for Disease Control and Prevention (CDC); Dr Jing Wang, World Organisation for Animal Health (OIE); Professor Mahmudur Rahman, Bangladesh Institute of Epidemiology, Disease Control and Research (IEDCR); Dr Olubumni Ojo, Nigeria Centre for Disease Control.

WHO-led initiatives

Presenters in this session highlighted four WHO-led initiatives that together set the global scene for pandemic influenza preparedness and national health security. All four are designed to align the priorities and activities of pandemic influenza preparedness and national health security.

IHR Monitoring and Evaluation Framework (IHR MEF)

The IHR MEF ensures the mutual accountability of Member States and WHO for global health security through transparent reporting and dialogue. It comprises four components (see Figure 1):

- **Annual reporting to the World Health Assembly (WHA).** This is compulsory under IHR (2005). Focusing on capacity, this self-reported country data is used to monitor national progress towards implementation of IHR (2005).
- **Joint external evaluations (JEEs).** These are voluntary multisectoral assessments of a country’s IHR core capacities to identify the most urgent needs and priorities within their health security system.
- **Simulation exercises.** These are voluntary, qualitative training and quality assurance exercises designed to test and evaluate emergency policies, plans and procedures before a crisis.
- **After action reviews.** Also voluntary, these qualitative reviews examine the response to an emergency after it has happened. They seek to identify what worked well and what needs improving.

Together, the components of the IHR MEF provide a comprehensive, multisectoral picture of a country’s capacity and functionality in detecting, notifying and responding to public health emergencies.
By helping countries to identify both their strengths and weaknesses in operational readiness, the IHR MEF offers the building blocks needed to develop an effective National Action Plan for Health Security (NAPHS) that can build short and long-term capacities, embedded in health sector development strategies.

Strategic Partnership for IHR and Health Security (SPH)

SPH supports Member States in their efforts to expand multisectoral collaboration and accelerate implementation of IHR (2005), providing a coordination platform for countries, partners and donors to share information and work together for the strengthening of core health security capacities. Founded on the understanding that strong collaboration and coordination is vital to our collective ability to prevent, detect and respond to global health threats, SPH promotes multisectoral partnership and exchange through four pillars:

- **Strategic Partnership Leadership** is a multi-stakeholder advisory group that gives SPH leadership and oversight.
- **Strategic Partnership Networks** bring stakeholders across different fields together so that countries, partners and donors can share experience and expertise and forge new partnerships.
- **Strategic Partnership Resources** is an online gateway to diverse country data, along with donor and expert profiles, guidelines, tools, resource maps, and other useful documents and links related to IHR (2005) implementation and health security.
- **Strategic Partnership Forum** brings countries, partners and donors together in high-level events to foster relationships and align investment priorities with country-defined needs and gaps.

Beyond these, SPH uses specific tools and tactics to support collaboration, coordination and cooperation among countries, partners and donors.

At an international level, this includes hosting expert roundtables to identify best practices, case studies and models for coordinating multisectoral partnerships; and convening meetings to broaden the participation of stakeholders, including promoting collaboration between the civilian and military health sectors.

At the national and sub-national levels, SPH has developed tools to map resources (financial, technical and in-kind) to support implementation of country health security priorities, and to leverage synergies between pandemic influenza preparedness and health security planning.

Global Influenza Strategy

In June 2017, WHO kick-started the development of a global influenza strategy to guide efforts to tackle influenza over the next decade. Following consultation with and input from a broad range of stakeholders—including participants at the 2017 influenza and health security meeting in Ghana—the strategy is in its final stages of clearance, due to be published in early 2019.
With strong links to major global health strategies (including both GPW13 and IHR) and guidance for health systems strengthening and all-hazards preparedness, the new influenza strategy is designed around two high-level outcomes:

1. **Better global tools**: A global action plan that leads to greater research, innovation and availability of improved tools for prevention, detection, control and treatment of influenza.

2. **Stronger country capacities**: That every country has an influenza programme that is evidence-based, optimized to fit their needs and contributes to national and global preparedness, response and health security.

The first outcome envisages a significant step up in research and development to deliver a suite of improved, novel and universal vaccines, more effective treatments, better understanding of the virus and host response and better detection methods.

The second envisages countries integrating laboratory and surveillance capacities into NAPHS and ensuring they translate across pathogens, incorporating seasonal influenza programmes into universal health coverage plans, and ensuring pandemic preparedness plans are up to date.

Together, the high-level outcomes aim to reduce the burden of seasonal influenza, minimize the risk of zoonotic influenza and mitigate the impact of pandemic influenza (see Figure 2).

**Global Influenza Programme (GIP)**

Established in 1947, the GIP is designed to provide Member States with strategic advice, technical support and coordination of activities. It includes the network of public health laboratories called the **Global Influenza Surveillance and Response System (GISRS)**, which provides the continuous seasonal and zoonotic influenza surveillance and virus sharing that forms the foundation for the global fight against influenza. Made up of 153 institutions in 114 countries, GISRS tests up to four million specimens each year to identify new strains with pandemic potential as and when they emerge.
Beyond surveillance, the GIP supports pandemic preparedness by standardizing the approach to risk assessment through, for example:

- The Pandemic Influenza Severity Assessment (PISA), which measures a pandemic’s urgency, intensity and scale.
- The Tool of Influenza Pandemic Risk Assessment (TIPRA), which documents features of the virus and identifies knowledge gaps for further investigation.

The GIP also supports countries’ planning processes, for example by:

- Publishing guidelines and tools to develop, update and test preparedness plans;
- Carrying out capacity-building activities and simulation exercises;
- Identifying best practices in leveraging existing plans for pandemic influenza;
- Assessing preparedness levels and seeing how WHO can provide better support;
- Exploring non-pharmaceutical interventions

**Tackling the funding challenge**

Pandemic preparedness is a public good that transcends national borders and cuts across multiple sectors. This makes financing a challenge, particularly in countries where influenza is not seen as an immediate threat or where it must compete for resources with many other priorities.

Dr Sutayut Osornprasop described some of World Bank’s efforts to overcome the funding challenge.

These efforts fall into three categories:

1. **Financing options.** The World Bank offers financial support through various mechanisms including the International Development Association (IDA), the Pandemic Emergency Financing Facility (PEF), the Catastrophe Deferred Drawdown Option, the Contingency Emergency Response Component, and a range of individual regional and country-specific projects.

2. **Analytical and advisory services.** This includes research and economic analyses to help illustrate institutional arrangements and provide evidence to inform policy dialogue and strategy development.

3. **Convening efforts.** The World Bank convenes global and regional events to exchange experience and expertise in financing health security; and it runs simulation exercises for global and country policymakers to raise awareness of the threat posed by pandemics and drive investment in preparedness.
**Key messages**

Pandemic influenza preparedness has a crucial role in supporting broader health security. All but two of the 19 technical areas assessed in the JEE can be directly related to influenza (see Figure 3). Speakers and participants showed how building capacities for pandemic influenza builds capacities for other emergencies and strengthens broader health security. For example, Singapore used its pandemic influenza preparedness plan to manage a Zika outbreak in 2016. Similarly, in Pakistan, surveillance capacities built to detect and monitor avian influenza have provided a good platform for supporting the surveillance of other diseases.

“When you prepare for pandemic influenza it helps global health security and vice versa.”

*Professor Mahmudur Rahman, Director, IEDCR, Bangladesh*

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**Figure 3. Relevance of influenza to the JEE technical areas**

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<td>IHR coordination, communication &amp; advocacy</td>
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Not needed | Influenza-related | Influenza
The momentum behind JEE offers a unique opportunity for cross-fertilization. More than 90 countries have completed a JEE, and 47 have gone on to turn the results of that exercise into a NAPHS. This drive to plan for health security is not mirrored in the field of pandemic influenza, where preparedness planning has stagnated since 2009. Fewer than 13% of countries have updated their pandemic influenza preparedness plan in the past four years. More worryingly, more than a hundred countries have no plan for pandemic influenza at all. An analysis of plans shows that many of the countries that have completed a JEE or NAPHS are without a national influenza plan. Collaboration and strategic partnership across the influenza and health security communities in these countries could be particularly beneficial.

Country ownership is key. Speakers from diverse countries, partners and WHO teams underscored the need for countries to take the lead in preparing for pandemic influenza, strengthening IHR capacities and aligning the activities. At the same time, several speakers said that countries must be supported by regional and international initiatives, including those by WHO, which should provide leadership and serve to consolidate efforts for collective gains.

Pandemic influenza preparedness and health security planning both rely on multisectoral collaboration. All speakers, whether referring to health security planning or pandemic influenza preparedness, emphasized the need for a multisectoral approach that cuts across government ministries and a broad range of stakeholders, including nongovernment organizations (NGOs), civil society, UN agencies and development partners.

“It is critically important that relationships are developed across government sectors, particularly across health, agriculture, veterinary and environment sectors as well as departments of defence.”

Dr Jackie Katz, Deputy Director, Influenza Division, US CDC

There are many initiatives underway to support the type of multisectoral collaboration required, including the UN Tripartite Agreement between WHO, OIE and the Food and Agriculture Organization (FAO), the IHR MEF and SPH and the IHR-PVS bridging workshops that bring stakeholders from emergency preparedness and veterinary services together to assess capacities and develop plans for improvement.

Figure 4. A unique forum and opportunity for strategic partnership and collaboration

Influenza network

- 100+ countries have no plan for pandemic influenza
- <13% countries have updated their plan in past 4 years

Health security network

- 91 countries have completed a JEE
- 48 countries have completed a NAPHS

Accra, 2017

Hong Kong SAR, 2018
Multisectoral collaboration can be difficult in practice. While speakers and participants agreed on the need for a multisectoral approach, several of them pointed out that it is not always easy to achieve. In some cases, that is because it is not clear who is responsible for what. In other cases, it is more of a logistical challenge. In Nigeria, for example, the JEE involved more than 40 sectors and the journey from JEE to NAPHS had to consider actions at national, state and local levels of government. Having a strong One Health mechanism, such as a steering committee, can help coordinate multisectoral collaboration. And having champions in different ministries can help secure the engagement of key sectors.

The investment case remains to be made in many countries. Financing pandemic influenza preparedness plans and NAPHS still poses a significant challenge in many countries. In part, that is because the economic risk and return of financing preparedness and response is not well understood—even though there is increasing evidence to suggest that investing in influenza preparedness can help address other hazards, and that investing in systems strengthening during ‘peace time’ pays off during emergencies.

WHO and the World Bank are developing a guide on how to make the investment case to help countries articulate the value of investing in preparedness. Participants warned the two organizations to take care in communicating their guidance, pointing out that different countries use different language for budgeting.

Involving key stakeholders can accelerate buy-in, approval and uptake. More than one speaker suggested that one way of securing finance for preparedness plans is to involve those departments that hold the purse strings in developing the plans. Speakers from Australia, Bangladesh and Nigeria all underscored the need to build awareness of preparedness plans—among finance ministries, parliamentarians and military sectors—well before they are put up for government approval.

“When drawing up our NAPHS we invited the budget office and involved military people and the lower house so that nothing would be strange when the plan got to them for approval.”
Dr. Olubummi Ojo, Director for Disease Surveillance, Nigeria Centre for Disease Control

Further information
- IHR MEF https://extranet.who.int/sph/ihrmef
- SPH https://extranet.who.int/sph/
- GIP www.who.int/influenza/gip
- PISA www.who.int/influenza/surveillance_monitoring/pisa/guidance
- TIPRA www.who.int/influenza/areas_of_work/human_animal_interface/tipra
- PIRM www.who.int/influenza/preparedness
- GISRS www.who.int/influenza/gisrs_laboratory
- IDA http://ida.worldbank.org
II. WHO toolbox

About this session

This session comprised three short presentations and a panel discussion followed by an open question and answer slot. WHO and country representatives described the latest tools available for building pandemic influenza preparedness plans as part of an all-hazard public health strategy and highlighted country perspectives on how to use tools in practice.

Chair: Dr Michael Mahar, US CDC

Presenters: Dr Weigong Zhou, WHO; Mr Glenn Lolong, WHO; Mr Payman Hemmati, WHO.

Panel discussants: Ms Rhonda Owen, Australia; Dr Sopon Iamsirithaworn, Thailand; Dr Mohd Alex Vandi, Sierra Leone; Dr Zheng Jie Marc Ho, Singapore; Mr Pasi-Pekka Mustonen, Finland.

Latest initiatives

The latest WHO initiatives for strengthening pandemic influenza preparedness in alignment with health security include two recently-published planning tools, two in-development planning and implementation tools, and an integration project.

All five are designed to synergize pandemic influenza preparedness planning with existing health security mechanisms (including JEE and NAPHS), as well as regional frameworks (such as the Asia Pacific strategy for emerging diseases and public health emergencies) and other partner initiatives.

1. Preparedness checklist

The Checklist for pandemic influenza risk and impact management highlights important actions and capacity requirements that countries should consider when developing or revising national pandemic influenza preparedness plans.

Designed to help countries implement the WHO’s PIRM framework, this checklist emphasizes multisectoral and multidisciplinary approaches, and advocates for national response plans that are tailored to a country’s own experience, resources and vulnerabilities.

The checklist also serves as an important bridge between pandemic influenza preparedness and global health security. It draws direct links between pandemic planning activities and IHR core capacity requirements, integrating the essential capacities needed to manage pandemic influenza with the core capacities required to manage broader health security threats. In total, 30 out of 48 JEE indicators (or 15 out of 19 technical areas) are mapped in the checklist, across seven broad areas:

- preparing for emergency;
- surveillance, investigation and assessment;
- health services and clinical management;
- preventing illness in community;
- maintaining essential services and recovery;
- research and development; and
- evaluation, testing and revising plans

2. Essential steps in planning

The Essential steps for developing or updating national pandemic influenza preparedness plans is intended to complement the preparedness checklist and ensure that when countries develop or update an influenza
pandemic preparedness plan, they set clear objectives and follow a robust process.

Participants at the Ghana meeting in 2017 played a key part in shaping this document, providing feedback on an initial draft and making suggestions for improvement. The resulting guidance articulates three phases of preparedness planning:

I. Preparation and situation analysis
II. Developing or updating a plan
III. Evaluating, finalizing and disseminating the plan

For each planning phase, the guidance sets out the objectives, steps, considerations and individual tasks that should be carried out.

3. Pandemic capacity progress indicator (PCPI)

To help countries implement the preparedness checklist described above, WHO SPH has developed the PCPI tool. The PCPI tool links the results and recommendations of JEE and the IHR annual reporting to the national pandemic influenza preparedness planning process.

It provides a library of actions for pandemic influenza preparedness capacity building that is linked to the IHR MEF so countries can track their progress in preparedness planning and identify gaps in capacity. This, in turn, allows countries to target their preparedness activities to areas of need, using the data to leverage domestic and partner technical and financial support (see Section IV below for more information on the PCPI).

4. Resource mapping tool

Where the PCPI supports the development of pandemic influenza preparedness plans, the resource mapping tool supports their implementation.

Developed in Excel to maximize accessibility, the resource mapping tool allows countries to cost the activities in their pandemic influenza preparedness plan, identify the financial and technical resources available to implement them and prioritize accordingly.

As an adaptation of the SPH resource mapping and impact analysis on health security investment (REMAP) tool, it can also help harmonize different country plans and map partner projects in the country, providing visibility for partners and policymakers (see Section IV below for more information on the resource mapping tool).

5. Leveraging plans

To leverage pandemic influenza preparedness through synergies with other disease-specific plans, WHO is undertaking a project called Identifying best practices of pandemic influenza preparedness planning. The project is made up of four phases of work:

I. Global review of existing plans and mapping. To identify and map all health security and preparedness plans, all-hazard and hazard-specific.

II. Cross-walk between relevant plans. To identify potential synergies between plans by mapping disease-specific capacities against pandemic influenza essential requirements and JEE indicators.

III. Work with selected countries. To find ways of integrating plans and harnessing best
practices to update pandemic influenza preparedness plans.

IV. Test and evaluate in pilot countries. To pilot the updated pandemic influenza preparedness plan.

The project, which is still in Phase II, paints a worrying global picture of national pandemic influenza preparedness plans, with more than half of all countries having no plan available (see Figure 5).

There are encouraging initial findings from Phase II, however. The ongoing cross-walk of plans shows much overlap between JEE indicators and capacities in disease-specific plans. It further suggests that countries can use their existing plans, priorities and resources to elevate their pandemic influenza preparedness plans from strategic to operational levels.

Country perspectives

Five countries gave their perspectives on using tools for pandemic influenza preparedness in the context of strengthening health security. Each country has used a slightly different approach, as outlined in brief below.

The country representatives underscored their lessons learnt (summarized in the key messages below); and shared their top tips for success (see Figure 6).

Australia

Australia has a comprehensive preparedness system that includes:

- Legislation on surveillance, data sharing and control of pathogens, as well as a biosecurity act;
- A regular exercise programme;
- Decision-making structures through committees;
- An emergency operations centre;
- Surveillance systems and protocols;
- Laboratory systems and protocols;
- A medical stockpile;
- Capability for pandemic vaccine; and
- A comprehensive pandemic plan.

The plan is regularly updated and every year a model or study is undertaken to try and improve it.

Finland

Finland did its JEE in 2017 and its subsequent national action plan was aligned with the Security Strategy for Society, which is overseen by a broad-based cooperation platform called the National Security Committee.

As part of wider preparedness, Finland also has a national multisectoral pandemic influenza preparedness plan, which is regularly updated and periodically tested on multiple levels.

Since August 2018, Finland has had a multisectoral steering group, which includes representation from the offices of the president and prime minister, to help implement the national action plan that emerged from the JEE.

Finland has contributed to many of the key global processes for building health security capacity, including the model for JEE. It also provides financial and technical support for capacity building in various low- and middle-income countries (LMICs).

Sierra Leone

Sierra Leone has recently completed a resource mapping and costing exercise with the WHO REMAP tool to prioritize actions for building capacity in preparedness.

Using a One Health foundation, the country listed all the activities required to build core capacities and assigned a cost to them. The
first budget came out at USD 260 million, which was unrealistic in light of all the other competing priorities facing Sierra Leone.

The country then developed a list of seven weighted criteria to prioritize activities based on need and feasibility:

- Is the activity a quick win?
- Is it a priority for the country?
- Does it have a known advocate in country?
- Is it ongoing or needs to be completed quickly in the plan?
- Does it require significant resources?
- Are there existing opportunities for funding?

Figure 6. Country ‘top tips’ for preparing for pandemic influenza while strengthening health security

The prioritization exercise identified 107 key capacity-building activities to focus on and reduced the corresponding budget to USD 50 million, which was more realistic and much more ‘donor-friendly’.

The country is now taking those activities forward, with a focus on real-time surveillance, immunization, antimicrobial resistance, chemical events, national laboratories, biosafety and biosecurity, emergency response and operations, risk communications, preparedness and reporting.

Singapore

Singapore has had a pandemic influenza preparedness plan since 2003. Last updated in 2014, the current Disease Outbreak Response System Condition plan mirrors the WHO pandemic alert levels but is tailored to local context and experience.

The plan is informed by multiple stakeholders, including academics, and is supported by a wide range of public-private partnerships.

Most recently, completion of the JEE has helped Singapore assess its progress in preparedness; and ongoing research and development is helping Singapore reflect on current approaches, assess alternatives and identify best practices that can be used to drive continuous improvement.

Thailand

Thailand developed its first national pandemic influenza preparedness plan in 2005. Since then, the plan has evolved to cover all emerging infectious diseases (EID) and the current version (2017–2021) is based on six complementary and inter-related strategies:
1. Preparedness system for emergencies
2. One Health prevention and control system
3. Risk communication and public relations
4. International cooperation
5. Civil society and private sector participation
6. Knowledge management, research and development

The EID plan involves stakeholders from more than a dozen government departments as well as local administrative organizations and university networks. It is run through a national committee chaired by the deputy prime minister and is implemented at all levels of government.

A recent assessment of the plan against the WHO checklist for pandemic influenza preparedness has highlighted areas for improvement; the plan will consequently be updated in early 2019.

Key messages

Capacity building involves hazard-specific and all-hazard components. Pandemic influenza preparedness planning is a process that takes a country from capacity to capability in responding to a pandemic. The action required to complete the journey includes two components:

- Building all-hazard capacities—for example, through IHR MEF, NAPHS, regional strategies and health systems strengthening—to manage broad health security threats;
- Building hazard-specific capacities—for example, through GISRS, risk and severity assessments, pharmaceuticals and public health measures—to address specific needs in pandemic influenza response.

“In some countries, there are lots of disease-specific plans on different diseases and that makes it difficult to focus.”
Dr Sutayut Osornprasop, Senior Human Development Specialist, World Bank

“Planning is a capacity building process—it’s not just about coming up with a plan but also about learning.”
Dr Zheng Jie Marc Ho, Deputy Director
Public Health Intelligence and Non-Communicable Diseases, Singapore

Building capacities for influenza builds other IHR capacities. Several speakers and participants re-emphasized this point. The recent cross-walk of plans carried out by WHO suggests that leveraging pandemic influenza preparedness plans can also serve both horizontal and vertical health functions including: governance, human resources and financing, research, participation and health communication (horizontal); and health protection and promotion, disease
prevention, health care and emergency preparedness (vertical).

Developing a plan is a capacity building process in itself. The very process of developing a preparedness plan is a capacity-building exercise in itself: it identifies key gaps in capacity and capability, and increases awareness and understanding of key obstacles and opportunities. Perhaps most importantly, it forges relationships and builds trust across diverse sectors and stakeholders.

“We should not stand alone. We are taking into consideration other plans to make sure we address all issues.”
Dr Mohd Alex Vandi, Director Health Security and Emergencies, Sierra Leone

Preparedness plans must be practical and effective. Some participants voiced concerns that combining many different plans may make them unwieldy to implement. All speakers agreed that plans must be practical to be of any real value. That means they must be:

- **Comprehensive** but manageable;
- **Flexible**—designed with some level of pre-set decisions but ultimately able to adapt to changing situations because a pandemic rarely plays out according to plan;
- **Tested** on a regular basis to ensure they remain effective;
- **Built on existing systems and structures** as far as possible;
- **Inclusive**, developed through a functional One Health platform that can ensure multisectoral buy-in and ownership.

“You need to use your normal influenza systems in a pandemic—they might need to be enhanced but you don’t create new ones.”
Ms Rhonda Owen, Department of Health, Australia

Mainstreaming can help prioritize and implement activities. In Australia, specific activities from the national action plan are assigned to individuals to do within their normal tasks. This type of mainstreaming allows influenza-specific activities to be folded into broader roles and prioritized accordingly. Each department responsible for individual activities then reports on progress regularly. This echoes WHO’s approach to work with countries to synchronize plans and fold them into existing work, rather than duplicating efforts.

“The idea is not to make things more complicated. We want to simplify things.”
Dr Weigong Zhou, GIP, WHO

National priorities matter. Several speakers re-emphasized the need for country ownership of plans, which includes prioritization. Countries must be free to set their own national priorities and for these to be respected by donors and partners. This includes acknowledging that priorities often change over time, especially when there is an ongoing response. The resource mapping and costing tool developed by WHO includes a mechanism for prioritizing activities according to country-defined criteria.

“All too often donors come with their own ideas about where to put their money, without asking what the priorities are for the country.”
Dr Mohd Alex Vandi, Director Health Security and Emergencies, Sierra Leone

A robust communications strategy is critical. Speakers from Singapore and Thailand both underscored the need for strong risk communications as part of preparedness efforts. This includes making sure that during a pandemic you can issue timely, concise and clear messages to:
• The general public, on what sort of disruption to expect and what action to take;
• Public institutions, on how to plan for services; and
• Professionals, on how to manage patients.

REQUESTS TO WHO:
Advice on how to address nearby risks that may be present outside national borders but likely to impact in-country (especially relevant for diseases like Ebola).

“Risk communications and public relations are particularly important to prevent public panic during an outbreak.”
Dr Sopon Iamsirithaworn, Director, Bureau of General Communicable Diseases, Thailand

Further information
• A checklist for pandemic influenza risk and impact management
  www.who.int/influenza/preparedness/pandemic/influenza_risk_management_checklist_2018
• Essential steps for developing or updating a national pandemic influenza preparedness plan
  www.who.int/influenza/preparedness/pandemic/essential_steps_influenza
• Health security: country profiles
  https://extranet.who.int/sph/country
III. From the front line

About this session

In this session, representatives from different regions and countries presented their perspectives on linking pandemic influenza preparedness and national health security strengthening in practice. Presentations were followed by an open discussion in plenary.

Chair: Dr Rhonda Owen, Department of Health, Australia

Presenters: Dr Philip Gould, SEARO; Dr Masaya Kato, WPRO; Dr Belinda Herring, AFRO; Dr Issa Makumbi, Uganda; Dr Calin Alexandru, Romania; Dr Naila Siddique, Pakistan

Regional frameworks

Presenters in this session highlighted two key all-hazard regional frameworks—from Asia Pacific and Africa—with important links to pandemic influenza.

Asia Pacific (APSED III)

For the past decade, the Asia Pacific strategy for emerging diseases (APSED) has provided a common framework for action in the WHO’s South-East Asia (SEARO) and Western Pacific (WPRO) regions to prepare for and respond to emerging diseases and public health emergencies, including pandemic influenza, and to guide the development and implementation of national action plans.

Now in its third edition, APSED III focuses on improving core public health systems across eight focus areas:

- Laboratories;
- Monitoring and evaluation;
- Zoonoses;
- Prevention through healthcare;
- Risk communications; and
- Regional connectivity and coordination.

APSED III is built on five guiding principles (see Figure 7). Over the past decade, it has almost doubled the number of countries in the Western Pacific with rapid response teams, event-based surveillance systems, field epidemiology training programmes, incident management systems, and national action plans for antimicrobial resistance.

Across SEARO and WPRO, nine countries have a NAPHS (with several more in the pipeline); and four countries have a national pandemic influenza preparedness plan that has been updated in the past three years, with several more with development or updates in progress.

Africa (IDSR)

For twenty years, the 46 countries in WHO’s African region (AFRO) have used the Integrated Disease Surveillance and Response (IDSR) as a common framework for building core capacities, particularly in public health surveillance and response.

With a focus on nine categories of core capacities, IDSR is Africa’s vehicle for meeting IHR (2005) requirements. By specifying African public health priorities, it is also tailored to the regional context.
For example, it lists 40 priority diseases and conditions (including influenza) that are in line with IHR (2005) but are particularly known to afflict African communities. When a country adopts ISDR, they choose their own priorities from this list and include any other diseases of concern according to their own situation.

Across AFRO, more than three quarters of all countries have completed a JEE. More than half have also completed, or are currently developing, a NAPHS.

Key messages

Speakers and participants echoed some of the key messages of previous sessions, especially the need for a multisectoral approach and how building capacity in pandemic influenza preparedness also builds capacities for health security. The key messages of country presentations are included in Figure 8 below. Beyond that,

“The most important thing is to start discussions with multiple sectors and bring parties together; the exact approach to governance is up to individual countries.”
Dr Philip Gould, Programme Area Manager, SEARO

other key messages to emerge from this session are summarized.

**Different countries have different vulnerabilities.** Vulnerability to pandemic influenza can result from dense populations, poor hygiene and sanitation and weak surveillance systems as well as changing ecosystems, value chain connections with affected areas or unstable financing for preparedness. Some countries are more vulnerable than others. Some have multiple vulnerabilities. Efforts to improve pandemic influenza preparedness should account for these different vulnerabilities and be inclusive of all countries.

**Countries need a step-wise approach to capacity development.** To that end, prioritizing actions is important. In some cases, a step-wise approach means accepting that a country will not have all its capacities in place before the next pandemic hits, and therefore taking mitigating action.

In Uganda, for example, the country has developed a business continuity plan to ensure that even with limited capacities, essential services can continue to function in the face of a pandemic. In some cases, a step-wise approach comprises two tiers of capacity building that starts with preparedness planning but continues to include system readiness.

“The best approach is to avoid a pandemic in the first place. But if you can’t, you need a business plan to keep essential services running.”
Dr Issa Makumbi, Director, Public Health Emergency Operations Centre, Uganda

“Countries that are vulnerable are not necessarily those where the pandemic will start.”
Professor Mahmudur Rahman, Director, IEDCR, Bangladesh
There are many different ways of framing a multisectoral partnership. All participants agreed that multisectoral partnership is key to developing comprehensive and realistic preparedness plans. But they also agreed that there are many different ways of framing such a partnership because different governments have different structures. In some cases, a memorandum of understanding (MOU) across ministries has proved an effective instrument. But an MOU is legally binding and can take time to set up. Some participants argued that an inter-ministerial committee is a more effective alternative. The tripartite organizations (FAO, OIE and WHO) are currently developing guidance on this issue.

Environment ministry is a key stakeholder. In discussing who should participate in preparedness plans, several speakers highlighted the need to include the ministry of environment. This is particularly important in the context of the 2010 Nagoya Protocol and potential impacts on virus sharing. Many countries, including Pakistan, Thailand and Uganda, already involve the environment ministry and related departments such as wildlife, water and wild birds.

Funding is often the biggest obstacle to implementing a preparedness plan. Many activities are project-based and require regular funding from the government. Speakers and participants alike said that funding is a major challenge. In part that is because health security and pandemic preparedness are public goods and so are subject to market failures. In part it is because countries face many other competing priorities that are cheaper to tick off or are more visibly urgent. In part it is because preparedness is a complex topic that finance ministries do not understand well. Dr Makumbi from Uganda argued that it is a language problem: when we talk about health security, people think it is purely a health issue, rather than a national issue or an economic one.
If the plan addresses avian influenza, a compensation policy is essential. In Pakistan, the introduction of a compensation policy was critical in enabling a robust surveillance system. Before compensation, farmers in the country were avoiding giving samples and reporting illness, even hiding outbreaks. After a compensation policy was introduced (75% for losses), farmers came voluntarily. But while a compensation policy is essential, it is not the only component of an effective avian influenza preparedness plan. In Pakistan, compensation is just one component of a multi-pronged strategy that also includes:

- A dedicated task force;
- Laboratory capacity building activities;
- Awareness raising and training for improved biosecurity, controlled culling and disinfection;
- Strategic vaccination and surveillance;
- Legislation, specifically for establishing influenza-free farming zones and live bird markets, for declaring outbreaks, and for accessing farms for monitoring;
- Detailed standard operating protocols for dealing with any outbreaks;
- Provincial, national and international workshops on laboratory diagnostics, surveillance and outbreak response;
- Regional collaboration for transboundary surveillance; and
- Research into avian zoonotic pathogens at the human-animal interface.

REQUESTS TO WHO:
Advice on the best mechanism to use for multisectoral collaboration (MOU, joint SOP or other); and also who to involve.

Further information

- APSED III
  http://iris.wpro.who.int/handle/10665.1/13654

Renewed commitment from Finland

At a reception hosted by the Finnish government, the Consul General of Finland in Hong Kong SAR, Ms Johanna Karanko, addressed meeting participants. Applauding the renewed commitment to strengthening health security, Ms Karanko paid tribute to the nearly 100 countries that have completed their JEE and country progress in mapping national action plans. But, she said, while country efforts are key, they must be supported by strong regional and global partnerships. These must be based on a whole of society approach that engages not only governments but also academics, private sector and civil society. Ms Karanko reaffirmed Finland’s commitment to continue supporting national and global efforts to strengthen health security, for example by working with individual countries like Tanzania to improve One Health preparedness and by remaining a key member of the Global Health Security Agenda steering group and the JEE Alliance.
IV. New tools in practice

About this session

This session hosted a demonstration of two new tools developed by WHO SPH to support countries in updating and costing pandemic influenza preparedness plans, followed by a plenary discussion to clarify outstanding queries about the tools and receive feedback on their usefulness.

Chair: Mr Ludy Suryantoro, WHO

Presenters: Dr Eleca Dunham, WHO; Mr Glenn Lolong, WHO

This session focused on walking through the two new tools to highlight key features and answer questions about functionality.

PCPI

The PCPI tool is explicitly linked to the preparedness checklist described in Section II and is designed to support the planning process for pandemic influenza preparedness.

It works by organizing the checklist items into IHR capacity levels, based on the results of a country’s JEE. The capacity levels range from 1 (no capacity) to 5 (sustainable capacity).

Within each capacity level, recommendations are articulated based on WHO influenza guidance. During the planning process these recommendations can be used to help develop activities for year one, year two etc.

As a counterpart to the preparedness checklist, the PCPI tool is intended to:

- Provide a set of technical and planning recommendations for capacity building;
- Promote multisectoral coordination;
- Offer a framework for tracking progress and improving JEE scores; and
- Highlight opportunities for collaboration and partnership.

One way of using the tool is to do a crosswalk between the JEE and pandemic influenza preparedness plan. This involves taking the identified gaps and priority recommendations from the JEE and considering how the pandemic influenza preparedness plan can be used to close those gaps and move to a higher capacity level. In this way, developing activities for the influenza plan allows you to build capacities not only for influenza preparedness but also for broader health security.

The tool includes lists of resources to help users access more guidance and information.

“Our goal is to assist you as best we can on technical planning aspects of your flu plan.”

Dr Eleca Dunham, WHO SPH

Resource mapping

While the PCPI supports planning processes, the resource mapping tool has been designed specifically to support implementation once a pandemic influenza preparedness plan has been prepared.

Adapted from the SPH resource mapping and impact analysis on health security investment (REMAP), the resource mapping tool lists all of the activities in a country’s preparedness plan and identifies, for each
activity, type of need (training, workshop etc), estimated cost, implementation status and percentage of achievement.

Activities from more than one plan can be included in the list, which makes it easy to identify areas of overlap across plans.

The tool includes several features to help countries manage the list of activities, which can get long and unwieldy once different plans are combined. For example, a prioritization mechanism allows countries to define their own criteria for prioritizing activities, and provides analyses that quantify prioritized activities, estimates their cost and details their spread across prevention, detection and response capacities.

The resource mapping tool has been tested in Sierra Leone and Tanzania, where it is proving a useful platform for coordination across ministries.

**Key messages from discussion**

**Countries own and define both tools.** It is important to emphasize that countries own and define both tools, including deciding what criteria to use in prioritizing, which department should manage it and whether the data should be publicly available.

**WHO welcomes feedback on the PCPI and resource mapping tools.** The organization is committed to supporting any country that wants to use either tool.

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**PCPI**

- Bridges the pandemic influenza checklist and JEE framework.
- Acts as a library of actions for capacity building for influenza preparedness.
- Identifies areas of collaboration and partnership opportunities.
- Can be used to track progress in capacity levels.
- Includes lists of resources.

**Supports planning**

---

**Resource mapping**

- Tailored to fit individual country contexts and IHR reporting mechanisms.
- Uses flexible criteria to prioritize activities.
- Includes a costing tool to support budgeting processes.
- Tracks progress in implementation.
- Maps who is doing what and where.
- Can be used as a platform for coordination.

**Supports implementation**

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*Figure 9. Key features of the new PCPI and resource mapping tools under development by WHO*
V. The role of simulations

A practical guide

In 2018, WHO published a new practical guide on the role of simulation exercises in validating pandemic influenza preparedness plans.

Aimed at countries, the guide sets out how to select, plan, conduct and evaluate simulation exercises specific to pandemic influenza; and how to use the outcomes of these exercises to review and improve pandemic influenza preparedness plans.

It is based on, and complements, the 2017 WHO Simulation Exercise Manual, turning the concepts and principles outlined in the manual into a set of practical actions for countries to follow across seven stages of the exercise (see Figure 10).

The guide covers two broad categories of simulation exercises:

- **Discussion-based** exercises designed to help participants develop, refine or simply familiarize themselves with plans, policies and procedures.
- **Operations-based** exercises, such as drills, tests or full-scale field exercises, which check whether plans, policies, procedures and systems work and can be used to clarify roles and responsibilities and identify resource gaps.

The guide also has several tools that countries can use directly, including sample exercise plans, checklists, evaluation forms and a sample scenario. WHO is also developing a package of plug-in-and-play scenarios that should be available soon.

Figure 10. Seven stages of simulations, as described in the WHO practical guide
Simulations in practice

Presenters shared their experience of using simulations to test preparedness plans.

A decade of tests in WPRO

All four components of the IHR MEF, including simulations, are firmly embedded in APSED III and the region has carried out in-country and cross-country simulation exercises for more than a decade. Two of the most significant regular simulation exercises are the Crystal communication exercise and the PanStop initial response exercise.

Crystal

Crystal is a functional exercise designed to test IHR (2005) public health event communications among national focal points and WHO contact points.

Run every year since 2008 (except 2009, during the H1N1 outbreak), the exercise usually lasts around five hours, and is always followed by an evaluation known as a ‘hot wash’.

During the simulation, national focal points must assess a public health event using IHR (2005) decision-making tools, notify WHO and senior management, and liaise with their national counterpart departments (including surveillance and response, points of entry, public health services, hospitals etc.), as appropriate.

Crystal tests the focal points’ ability to communicate both with WHO and with colleagues across multiple sectors.

More than 100 people, across more than 30 countries, have participated in a Crystal simulation. Their feedback over the years suggests it is a realistic simulation and valuable learning and training opportunity.

PanStop

PanStop is designed to assess a country’s initial response to emerging influenza with pandemic potential and to practice decision making to launch rapid containment operations.

Started in 2007, PanStop has been run in a different country each year since, most recently in Fiji (2017) and Mongolia (2018).

Each exercise is tailored to fit country needs. In Mongolia it focused on three elements of early response: multisectoral coordination, risk communications and logistics to deploy antivirals.

The exercise includes an evaluation, from which emerges specific recommendations for strengthening preparedness. These might be, for example, to clarify roles and responsibilities, strengthen the multisectoral coordination mechanism or review the role of national focal points.

Field testing in Indonesia

In September 2017, Indonesia carried out a full-scale simulation exercise to check its ability to cope with an emerging avian influenza event; and to test the robustness of its national pandemic preparedness plan and four supporting provincial plans.

The exercise was built on a hypothetical scenario where a new strain of avian influenza was transmitted from wild birds to domestic poultry, then to humans before finally evolving into human-to-human transmission.

The exercise followed the WHO Simulation Exercise Manual, adapted to Indonesia’s own context and was carried out in three phases (see Fig 11):

- Pre-exercise planning
- Conducting the exercise itself
- Post-exercise reporting and handover
Overall, the simulation validated contingency plans across six different areas, testing Indonesia’s capacities in: animal health detection and response, command and coordination, resource mobilization including access to emergency funds, medical response, surveillance (including at live bird markets), pharmaceutical interventions, and non-pharmaceutical interventions including risk communications.

The simulation exercise was a massive initiative, involving more than 800 participants from across 100 different institutions. It covered multiple sites, from villages and local health centres to live bird markets and sea and air ports. Dozens of government ministries were involved; so too were several nongovernment organizations such as Indonesian Red Cross and WHO Indonesia.

Figure 11. Phases and key activities in Indonesia’s full-scale simulation
Key messages

The same themes of multisectoral collaboration and a mutual capacity-building benefits emerged from this session. During a discussion among country representatives, the representative from Jordan, for example, said the training provided through simulations in his country is useful for tackling any communicable disease, not just influenza. Other key messages to emerge from this session are summarized below.

Simulations serve a varied purpose.

Simulation exercises are a core part of IHR MEF; they also form part of the essential steps in planning described in Section II above. They work to strengthen preparedness in many ways, including by:

- Testing a plan’s functional capacities;
- Assigning roles and responsibilities;
- Building trust among stakeholders;
- Establishing lines of communication;
- Educating and advocating for preparedness;
- Contributing to health system strengthening;
- Informing continuous improvement.

“We use simulations as an education tool… When you have new people coming in you need to educate them in the complexities of pandemic response.”

Dr. Lawrence Kerr, US Department of Health and Human Services

To meet exercise objectives, it is important to have the right exercise. There are lots of different exercises to choose from, both discussion-based and operations-based. Which one is most appropriate depends on which part of the preparedness cycle is being tested and the specific exercise objectives. But having the right exercise isn’t just about choosing what type of exercise to do. As highlighted by more than one speaker, it is also about ensuring:

- The right participation (i.e. getting all potentially affected stakeholders involved),
- The right context (i.e. adapting scenarios to fit country circumstances), and
- The right oversight (i.e. keeping those controlling the exercise independent from those doing the exercise)

In many cases, simulations work best when they are designed to test specific things: you cannot test everything at once so you may need to find ways to replicate simulations at different levels.

“Sometimes, the people with expertise to come up with scenarios are also the people that have to respond… so it’s not always clear who should control the exercise and who should play it.”

Dr Zheng Jie Marc Ho, Singapore

“Debriefings are critical to learn from the exercise.”

Dr Siswanto, Director General of the National Institute of Health Research and Development, Indonesia

A good evaluation ensures the simulation exercise is a valuable learning experience. Speakers and participants agreed that evaluation is a core component of any simulation exercise and one that should be included from the very start of the exercise planning process. You can’t learn from the exercise if you don’t evaluate it or reflect on how it went. During planning, clear objectives for the exercise should be articulated. These can then be used to guide the post-exercise evaluation. Through evaluations, countries can identify issues for continuous learning, and use their findings to develop an action plan with key stakeholders that will improve the preparedness plan. Dr Zhou suggested that such a plan should set out specific improvement actions, progress indicators,
roles and responsibilities and completion dates for each action.

In most cases, After Action Reviews are preferable to simulations. No matter how many times you practice and refine your plan through simulation, when a real outbreak comes, it may not match your plan. This means that whenever a country faces a real event, it is important to do an After Action Review that can evaluate the response and identify areas for improvement. In some countries, a high frequency of outbreaks means that simulations are rarely necessarily. In conflict-affected areas for example, where simulations cannot easily be run, After Action Reviews are particularly important as a source of learning to inform future responses. In other countries, where outbreaks are few and far between, simulations have a greater role in testing and validating preparedness plans.

Together, After Action Reviews and simulations form part of a virtuous cycle of learning that builds the capacities to implement pandemic influenza preparedness plans; and can help build capacities for other public health emergencies too.

“Having constant threats helps you learn from experience: you only need to run simulations if you are not practicing regularly.”

Dr Amanda McClelland, Senior Vice President, Resolve to Save Lives

Simulations often emphasize the need for strong risk communications. Reflecting on their own experiences in running simulations, participants highlighted the need for strong communications during a response. There is a need for good communication among those managing the response. Several participants spoke about the role of simulations in forging relationships among key stakeholders so that lines of communication are up and running before a pandemic hits. There is also a need for strong communications with the public, with a message that is both accessible and acceptable to local communities and households. That means risk communications need to be context-specific and culturally-appropriate, articulated in a language that local communities can understand. Dr Kerr suggested that finding communicators that people trust and that are honest and transparent is a task that should top the list of critical items in any preparedness plan.

**REQUESTS MADE TO WHO:**
Advice on how to prepare, respond and simulate during times of political instability and conflict (rather than just during peace time).
Support to run a regional simulation exercise in Europe, to ensure activities are realistic and effective.

Further information

- A practical guide for developing and conducting simulation exercises to test and validate pandemic influenza preparedness plans. [www.who.int/influenza/preparedness/pandemic/simex_influenza_preparedness_plans](http://www.who.int/influenza/preparedness/pandemic/simex_influenza_preparedness_plans)
- Article on 2017 Indonesia SimEx (in Indonesian) [https://polkam.go.id/waspada-pandemi-influenza-kemenkes-simulasi-siaga/](https://polkam.go.id/waspada-pandemi-influenza-kemenkes-simulasi-siaga/)
Part VI. Vaccines in focus

About this session

This session comprised five presentations and a panel discussion. Speakers from WHO and partners shared their experiences in expanding local vaccine production and harnessing seasonal influenza programmes to support pandemic preparedness. In this session, participants also considered specific tools for harnessing seasonal influenza programmes for pandemic preparedness and deployment of pandemic vaccines.

Chair: Dr Ann Moen, WHO

Presenters: Dr Joe Bresee, USCDC and PIVI; Dr Rick Bright, BARDA; Dr Wenqing Zhang, WHO; Mr Chris Chadwick, WHO; Mr Ioana Ghiga, WHO

Panel facilitator: Dr Malembe Ebama, PIVI

Panel discussants: Dr Sopon Iamsirithaworn, Thailand; Dr Burmaa Alexander, Mongolia; Dr Phillip Muthoka, Kenya; Dr Alexander Ochem, AVMI

International initiatives

This session focused largely on influenza preparedness per se, rather than in the context of health security, although all speakers acknowledged the links between the two.

Speakers described six international initiatives to boost countries’ access to seasonal and pandemic influenza vaccines. Each initiative varies in scope and approach but all recognize that vaccines are a primary intervention for preventing illness and death during outbreaks of seasonal and pandemic influenza.

Partnership for Influenza Vaccine Introduction (PIVI)

PIVI is a public-private initiative through which The Task Force for Global Health works with CDC, national health ministries, corporate partners and others to:

• Create sustainable, routine, seasonal influenza vaccination in LMICs;
• Build the immunization infrastructure, capacity and vaccine delivery systems required for future influenza pandemics and other infectious disease epidemics.

The initiative works like a mini-GAVI. Countries ready to introduce a seasonal vaccination programme as a tool for pandemic preparedness are provided with financing and vaccines to set up the programme.

In practice, PIVI operates as a partnership of three groups of people:

• Country partners lead national efforts by developing influenza vaccine policy and implementing vaccination programmes;
• Contributing partners provide vaccines, shipping, supplies and finance;
• Technical collaborators support evaluation and provide technical advice and support for, for example, programme planning and evaluation, pandemic planning and target group prioritization.

Since 2012, PIVI has worked with 20 countries. Today it has active programmes in 14 countries across the world. Through PIVI, these countries are building seasonal influenza vaccination programmes and developing the capacities and expertise they need—in regulation, vaccine policy,
distribution, communications and monitoring—to respond to a pandemic quickly and effectively when it comes.

**Biomedical Advanced Research & Development Authority (BARDA)**

BARDA is part of the US Department of Health and Human Services and specializes in developing public-private partnerships to develop and make available medical countermeasures for a range of threats, including pandemic influenza.

BARDA was a major partner and contributor to the Global Action Plan for Influenza Vaccines (GAP) throughout its entire lifetime (2006–2016). To help deliver the GAP, BARDA established an international influenza programme aimed at:
- Creating sustainable capacity to develop and produce influenza vaccines for self-reliance and pandemic response;
- Expanding the geographical spread of vaccine production to boost access; and
- Fostering international investment and partnerships.

The programme, which has been running for more than a decade, works with manufacturers in 14 low- and middle-income countries (LMICs). It comprises a range of activities from building new manufacturing facilities to training personnel in advanced vaccine manufacturing. It includes product development initiatives as well as an adjuvant technology transfer programme and technical assistance to operate and regulate facilities and to conduct clinical trials.

The initiative has been more successful than thought possible. The global capacity for pandemic vaccine production was less than a 1.5 billion doses when GAP started in 2006; this capacity was limited to high-income countries (HICs). The original goal was for the 14 supported manufacturers to be able to produce an additional 500 million doses. Today those countries have the potential capacity to produce nearly 1.1 billion doses of pandemic vaccine.

The programme has also expanded the geographical reach of vaccine production, enabling manufacturers supported by GAP and BARDA to start producing vaccines, with 12 approved seasonal and pandemic vaccines across 7 countries, including three with WHO pre-qualification.

**WHO sustainability tool**

In parallel to BARDA’s international influenza programme, and also to help meet GAP objectives, WHO has led a range of activities to support countries in increasing and sustaining their influenza vaccine production capacity.

Among those is the development of a ‘sustainability’ tool to help countries ensure their new vaccine production capacity can endure over the long term.

The tool, which was developed through broad consultation with countries and experts in order to understand the environment around local vaccine
production, identifies all the different elements that governments and manufacturers need to consider in establishing an enabling environment for local production of influenza vaccines. These are divided across six broad areas (see Figure 12).

The tool enables governments and manufacturers to work together to identify and overcome potential obstacles and to make recommendations for achieving sustainable local production. Governments and manufacturers should be aligned and work in parallel to achieve sustainable procurement policies and sustainable business plans, respectively.

While the tool was originally developed to support vaccine-producing countries, it can be easily adapted for non-producing countries. In these cases, the ‘Product development and manufacturing’ section is simply replaced with a section on ‘National procurement management’.

Pandemic Influenza Preparedness (PIP) Deployment
The PIP Framework was established in 2011 to improve global pandemic influenza preparedness and response. It does this by promoting timely sharing and access to influenza viruses with human pandemic potential (through the WHO-coordinated network of public health laboratories, GISRS).

The framework includes two benefit-sharing mechanisms to support capacity-building work and boost access to pandemic vaccines in LMICs. PIP activities span six areas of work, including planning for deployment of different pandemic supplies (vaccines, antivirals and diagnostics).

The deployment area of work aims to deliver:
- A common, and regularly tested, approach for managing global deployment;
- Up-to-date national deployment planning processes;
- Robust national policies for sustainable vaccine procurement and production.

Specific PIP Deployment activities include providing training and technical assistance for countries establishing deployment plans, procedures and policies — as well as developing resources specifically to support countries to develop a national deployment and vaccination plan (NDVP).

PIP Deployment also offers a package of simulations (table top, gaming, face-to-face or online) aimed at all stakeholders involved in deployment to help them develop and update their NDVP.

Africa Vaccine Manufacturers Initiative (AVMI)
African countries are home to around 17% of the global population but their vaccine manufacturing accounts for less than 1% of global vaccine output.

AVMI is a multi-stakeholder initiative established in 2010 to boost local production of vaccines (for routine and emergency situations) and enable self-reliance in Africa.

AVMI takes a four-pronged approach to achieving its mission: high-level advocacy, partnership-building, fundraising, and capacity-building.

AVMI provides a continental platform for interested parties—including policymakers, funders, scientists, manufacturers and other supply chain actors—to come together and
drive action in vaccine development and production in Africa.

Supporting the ‘switch’
When do you start producing pandemic vaccines? Especially if there are seasonal epidemics circulating at the same time that also need vaccines? Deciding when to make the ‘switch’ from seasonal to pandemic vaccine production is not as easy as simply tying it to the declaration of a pandemic.

The process is extremely complicated, involving many different stakeholders and many different steps, all of which are interconnected so that a delay in one triggers delays in all the others. It also involves a broad range of technical, philosophical and structural decision making to determine, for example, who is at greatest risk, where and when can the vaccine be produced, and what and where is the demand?

WHO is trying to clarify the complexities and support countries in planning for ‘the switch’ through a range of activities, including:
- Three working groups to tackle different aspects of operationalizing the switch;
- Development of biocontainment recommendations to cope with the early stages of the switch when demand is sure to outstrip supply;
- Building capacity for pandemic vaccines through seasonal influenza vaccine programmes;
- Guiding countries’ pandemic influenza preparedness plans.

Key messages
Vaccines are a key defence in tackling seasonal and pandemic influenza. Vaccines are a primary intervention for influenza. They prevent death and disease in both seasonal outbreaks and pandemics.

“The bottom line of preparedness is the availability of the correct vaccines.”
Dr Alexander Ochem, Technical Officer, AVMI

Local production is critical to reducing vulnerability. Countries have varying access to vaccines during seasonal outbreaks or pandemics. Dr Ochem told participants that in Africa, it can take more than a year for non-producing countries to access a new vaccine. Being able to produce vaccines in-country makes a country self-reliant and means it can more easily access vaccines when it needs them. To support local production, governments need to create an enabling environment for manufacturers (see ‘WHO sustainability tool’ above).

“To build local vaccine production capacity you have to have strong and consistent local government support, and close communication and collaboration with your partners.”
Dr Rick Bright, Director, BARDA

To access WHO-secured vaccines, countries must have a deployment plan in place. For non-producing countries, accessing vaccines during a pandemic relies on global channels, including requesting WHO-secured vaccines. But WHO will only release these vaccines to countries that are ready to use them, and have an up-to-date NDVP.

“Developing a deployment plan is a prerequisite to accessing WHO-secured vaccines.”
Dr Ioana Ghiga, WHO PIP Deployment
Having a seasonal influenza vaccination programme builds the capacities countries need for pandemic response. During the 2009 pandemic, the lack of existing public sector influenza vaccine programmes proved a real barrier to rapid deployment of pandemic vaccines. It took months for some countries to receive the vaccine because they first needed to draw up legal agreements for liability and then develop vaccine policies, regulatory pathways and distribution systems to get the vaccines where they needed to go.

“A robust seasonal influenza vaccination programme is a critical component of a nation’s ability to respond to a pandemic quickly and effectively.”

Dr Joseph Bresee, USCDC and PIVI

“In Africa, we have a very difficult task pushing the influenza agenda because it is not considered a big deal given all our other problems.”

Dr Phillip Muthoka, Deputy Director of Medical Services, Ministry of Health of Kenya

Having a seasonal vaccination programme ensures that all these elements are already in place when a pandemic hits. In this way, building a seasonal influenza vaccination programme helps improve a country’s pandemic preparedness. In 2009, Mongolia was one of the first countries to receive vaccines from WHO, in large part because it had an existing vaccination programme it could use to deploy them.

“We had an existing vaccine programme so we could respond quickly in 2009... We managed to vaccinate 25% of our population”

Dr Burmaa Alexander, Mongolia

Seasonal vaccination programmes can start with just one target group. It can take a long time to get broad coverage through a
seasonal influenza vaccination programme. But countries can begin by targeting a single risk group. In 2012, WHO’s Strategic Advisory Group of Experts (SAGE) on Immunization issued a recommendation that, based on evidence, pregnant women are the most important target group for seasonal influenza vaccination. It further recommended considering four more target groups including, in no particular order, healthcare workers, young children, the elderly, and people with underlying conditions (such as chronic heart or lung disease, metabolic or renal disease or various types of immunodeficiencies). The decision of which groups to target is made by the country, based on local circumstances such as burden of disease, vaccine availability, cost-effectiveness and competing priorities.

Countries and manufacturers both face obstacles in establishing a seasonal influenza vaccination programme. Establishing a seasonal influenza vaccination programme takes time, money and effort. It is an especially daunting task in resource-constrained settings of LMICs. From these countries' perspective, some of the main challenges include a lack of political will and understanding, high cost compared with other priorities, limited availability of vaccines, limited regulatory experience or expertise and lack of operational plans and policies for managing the programme. There are also challenges from a manufacturer’s perspective, including small market size compared with HICs, uncertain future markets, and high approval costs.

“Almost all national vaccination programmes recommend vaccination for specific target groups rather than for all people, as a cost-effective strategy.”

Dr Ann Moen, Chief of Influenza Preparedness and Response Unit, WHO

Strong surveillance systems generate data and evidence for policymaker support.

Several participants highlighted the challenge of getting high level buy-in for a seasonal influenza vaccination programme. Policymakers need to be convinced of both the need and value, based on robust evidence. Some speakers emphasized the need for a strong surveillance system to deliver the data that can persuade policymakers to act. But others warned that an incomplete surveillance system can be misleading, for example, leading a country to focus on one target group simply because that is where the eye of surveillance is, rather than because that is the highest-risk group.

Rotating workshop: tools to boost access to vaccines

During a rotating workshop, meeting participants were invited to engage with two specific tools aimed at improving access to vaccines:

- Sustainable local production/procurement checklist;
- NDVP checklist

Additionally, participants engaged with experts to identify the advocacy and communication needs for countries to prioritize influenza vaccination.

Participants discussed the core elements of each tool in turn and considered potential next steps for increasing national influenza vaccine preparedness.

Three key messages emerged from their deliberations:

1. High-level political attention is required to establish influenza as a national priority.
2. WHO, PIVI, and other stakeholders must continue to play their critical roles in supporting the development of evidence-based influenza vaccination policies and programmes.
3. Countries not only need to develop deployment and vaccination plans but must also exercise them to identify areas where more concentrated preparedness actions may be needed.

Further information

- AVMI [www.avmi-africa.org](http://www.avmi-africa.org)
- PIVI [https://pivipartners.org](https://pivipartners.org)
- GAP [www.who.int/influenza_vaccines_plan](http://www.who.int/influenza_vaccines_plan)
- Sustainable production and procurement of local vaccines [https://www.who.int/influenza_vaccines_plan/objectives/Sustainability_production_flu_vaccines/en/](https://www.who.int/influenza_vaccines_plan/objectives/Sustainability_production_flu_vaccines/en/)
- PIP Framework [www.who.int/influenza/pip](http://www.who.int/influenza/pip)
- Pandemic Influenza Vaccines: National Deployment and Vaccination Plans (Open WHO course) [https://openwho.org/courses/ndvp-en](https://openwho.org/courses/ndvp-en)
Part VII. Looking ahead

About this session

Using a World Café format, participants discussed next steps in updating pandemic influenza plans and specifically in synergizing pandemic influenza preparedness and health security strengthening. A summary of their discussion was presented in plenary.

Moderator: Dr Weigong Zhou, WHO

Tool development

Participants were asked to assess the availability and usefulness of WHO tools available in synergizing pandemic influenza preparedness and health security planning.

In general, they found the tools to be useful in their current form. But they also had several suggestions for their improvement and future development, as follows:

- **Make tools simple to use.** Sometimes they are too technical.
- **Use similar language across tools.** There is a need to harmonize language and terms across tools and to ensure they are easy to read and easy to understand.
- **Engage country technical experts in tool development.** This will help ensure that tools can account for different regional and country contexts and systems, and could make the difference in determining whether or not the tools will work.

  “If health systems are not ready to implement the tools, then the tools won’t work.”
  
  
  Dr Zheng Jie Marc Ho, Singapore

- **Share the tools widely.** This includes two types of dissemination. First, it is useful to share the tools under development with stakeholders well in advance of any consultation to allow for experimentation and use to inform genuinely useful input and feedback. Second, there is value in sharing published tools outside of stakeholder consultations to increase engagement with them across key user groups. This may include, for example, establishing an online community of practice, or mailing list of interested users. It may also include giving national focal points a greater role in disseminating the tools around the world.

  - **Adopt a train-the-trainer approach.** Although the tools may seem easy to use, there may still be different levels of ability in using them. A train-the-trainer approach that enables further training, adapted to different capabilities, could allow the tool to reach a greater number of users. This approach would involve training future trainers in the WHO tools, such as resource mapping and PCPI, who would then train others both within their own countries and outside, including countries not present at the Hong Kong consultation.

  - **Promote knowledge sharing across countries and regions.** Specifically, sharing of experiences in using the tools to identify which approaches work best and how to reap the most benefits.

In addition to the suggestions above, which apply to all tools developed to synergize pandemic influenza preparedness and health security planning, participants also provided specific feedback on the new tools developed by WHO:

- **PCPI tool:** This was seen as particularly useful in enabling countries to check that their plans have covered all the bases,
and in supporting countries in developing or updating their plans. There were some concerns raised about the complexity of the tool and suggestions that it should be simplified for ease of use.

- **Resource mapping tool**: This was found to be conceptually useful, particularly in how it pools all resource information into a single platform and allows donors to visualize where all the resources are. Participants asked for more time to test the tool and expressed some concerns about its robustness and technical complexity.

## Next steps

Through the World Café session, participants identified specific actions that countries and WHO and partners should take to synergize pandemic influenza preparedness and health security planning.

### Country actions

Participants made 11 high- and low-level recommendations for countries. Low-level recommendations comprise immediate actions that participants at the Hong Kong SAR meeting can take to help synergize the two areas of work (pandemic influenza preparedness and health security planning). High-level recommendations apply over a longer time frame and require the engagement of multiple stakeholders, beyond the Hong Kong SAR meeting.

## Challenges to synergy

As part of the World Café session, participants reflected on their own experiences to identify some of the likely obstacles in trying to synergize pandemic influenza preparedness and health security planning. They pointed to six common challenges:

**Prioritization**

Prioritizing activities to turn JEE recommendations into action.

**Finance**

Accessing finance for national priorities: domestic sources face stiff competition and external sources are not always willing to follow country needs.

**WHO tools and guidance**

Some say the sheer volume of these makes it difficult to manage; others say it is an opportunity for continuous improvement. In some cases, the challenge is not finding the right tool, but applying or adapting it to the country context.

**Advocacy**

Communicating the importance of pandemic influenza preparedness and health security planning to policymakers and stakeholders.

**Political buy-in**

Getting political buy-in and support especially if influenza is not a designated priority.

**Coordination**

Managing multisectoral coordination in practice, especially if there is no clear focal point or if it is not clear who all the stakeholders are that need to be engaged.
High-level recommendations to countries:

- **Promote day-to-day collaboration.** Find ways for influenza and health security groups to work together on a regular basis through their daily roles and activities.
- **Where possible, make influenza a priority disease.** If that is not possible, as you develop an all-hazards plan, include disease-specific points of contact that can be leveraged to work on vertical aspects.
- **Harness training opportunities.** Look for opportunities to build capacities through training; add influenza topics into health security training packages and vice versa.
- **Assign accountability.** Specifically charge a group of people to bring the two areas of work together—for example, the national IHR focal point, a One Health committee, a coordinating body or equivalent.
- **Establish strong and defined roles and responsibilities for people working in both areas.** This will ensure they have the capability to understand what their parameters of work are and will also give them the capability to reach across boundaries to work with others.
- **Learn from others.** Look for other countries’ After Action Reviews and try to use lessons learnt from those to review and refine your own plans.
- **Make use of available tools.** In particular, consider using WHO’s resource mapping tool as a mechanism for bringing people together and working in coordination.
- **Embed disease-specific elements in all-hazards plans.** As you build an all-hazards health security plan, include specific call-outs that reference priority diseases (as identified through risk assessments) so that, as you move health security forward you also progress the capacities and capabilities needed for individual diseases (which will often include influenza).

Low-level recommendations to countries:

- **Review JEE assessments and IHR (2005) annual reports** to identify a) any specific influenza elements that can be added to follow-up actions and b) any overlapping areas of weakness that may be tackled together.
- **Identify alignment opportunities.** Collect all influenza and health security plans and look for overlaps and areas for potential alignment.
- **Share meeting report.** Disseminate the findings of the Hong Kong SAR meeting widely among influenza and health security networks so it is not only meeting participants that feel the urgency of linking these two areas of work.

**WHO and partners**

Participants were asked to consider how WHO and partners can most effectively help synergize pandemic influenza preparedness and health security planning. They made seven main recommendations, which are summarized in Table 2 overleaf.

In addition to these recommendations, individual participants and countries made specific requests to WHO. Individual requests are included in the Sections above, as and where appropriate. Country requests are summarized in the **Closing remarks** below.

Many requests echo the recommendations put to WHO and partners by the broader meeting participants. In addition, four countries—Ethiopia, Indonesia, Kenya and Uganda—specifically asked WHO for support to review and refine their preparedness plans using and testing the PCPI and resource mapping tools.
Next steps for vaccines

With a focus on promoting the development of seasonal influenza vaccine programmes to support pandemic preparedness, participants identified four action points for countries:

1. **Map influenza champions** within countries to ensure all stakeholders are engaged. In many countries, the ‘influenza leadership’ is decentralized, with individual experts and leaders spread across different sectors and settings—in national immunization programmes, in laboratories, or in academic institutes and society.

2. **Work with regional and global economists** through partners such as the World Bank to calculate economic risks and benefits of developing a seasonal influenza vaccine programme. Use this to build an investment case that can be disseminated in global forums such as the World Health Assembly and used nationally to convince ministries of finance.

3. **Leverage regional sources of data** to help gather the evidence needed to support an immunization programme.

4. **Engage the private sector**: There are a growing number of vaccine-producing facilities, many of which offer incentives because they want to sell their vaccines.
Recommendation to WHO and partners

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<th>Respect country priorities</th>
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<td>Be transparent in saying where you can offer support, and be more flexible to country needs, responding to country-defined plans and priorities as much as possible. Consider including influenza in JEE reporting and scoring processes, so that countries can prioritize influenza preparedness as a key activity for developing IHR (2005) core capacities.</td>
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<th>Improve coordination among yourselves</th>
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<td>Communicate better with one another; link your generic activities with influenza; and take a One Health approach to projects and activities. You may also consider supporting access to influenza vaccines through, for example, pooled procurement.</td>
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<th>3</th>
<th>Elevate the issue of pandemic influenza preparedness</th>
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<td>This includes undertaking three major sets of activities:</td>
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<td>a. Working across partners to develop and publish a statement on the importance of pandemic influenza preparedness and use it to raise the issue in global policy forums such as the G7 and G20;</td>
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<td>b. Developing advocacy tools that countries can use to advocate for pandemic influenza preparedness among decision makers at all levels of national government;</td>
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<td>c. Ensuring that WHO country offices prioritize influenza in their work with countries</td>
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<th>4</th>
<th>Facilitate multisectoral collaboration and engagement</th>
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<td>This includes helping to identify focal points in other ministries, leveraging a One Health approach through the tripartite organizations, and enhancing support for engaging with ministries of finance in particular (for example by building a case for investment). It may also include building on new relationships, such as those being forged between global military and civilian health sectors, to cascade that collaboration down to regional and national levels.</td>
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<th>5</th>
<th>Promote knowledge exchange</th>
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<td></td>
<td>Support forums that enable peer-to-peer sharing of best practices within and across regions. Synthesize lessons learnt from After Action Reviews or regional frameworks (such as APSED III) and disseminate them to key stakeholders.</td>
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<tr>
<th>6</th>
<th>Keep providing support to review and refine plans using new and existing tools</th>
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<tr>
<td></td>
<td>This includes technical assistance and direct support to develop or update pandemic influenza preparedness plans using the WHO PCPI and resource mapping tools.</td>
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<th>7</th>
<th>Support long-term planning</th>
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<td></td>
<td>Develop a sustainable tool or mechanism for partners to come together to support better long-term planning and sustainable financing.</td>
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</table>

*Table 1. Participants’ recommendations to WHO and partners*
Closing remarks

About this session

In this final session of the meeting, participants returned to plenary where WHO representatives summarized key messages from the meeting, several countries made closing statements and the Director of Health for Hong Kong SAR, Dr Constance Chan Hon-yee, offered her closing remarks.

Moderator: Mr Ludy Suryantoro, WHO.

Country commitments

Before the meeting closed, Member States were invited to contribute final thoughts. Eight countries made closing statements. All thanked Dr Chan and WHO for hosting the consultation.

All also acknowledged the need for strategic partnership in preparedness and highlighted the value of the meeting and the broader effort to bring pandemic influenza and health security together.

Each country making a statement also made specific requests of WHO, partners and the global community as follows:

Indonesia asked WHO and partners to:
- Provide countries with technical assistance to enable them to implement the PCPI and resource mapping tools, both of which the country representative said are clearly useful for synergizing planning and improving communication across sectors in government
- Distribute the conclusions of the meeting, and finalize them in a way that countries can use
- Working with partners, raise the political commitment to this area of work in a systematic, holistic and concerted way so it is not only a ministry of health issue but a national one

Uganda asked WHO and partners to:
- Support Uganda to update its pandemic influenza preparedness plan, using and testing the PCPI and resource mapping tools
- Support Uganda to develop an immunization programme, which is a prerequisite for getting pandemic influenza vaccine through WHO
- Develop train-the-trainer programmes for the new tools so they can be of maximum benefit and practical use in countries
- Give WHO focal points in country offices a special assignment to look at influenza
- Work with the World Bank and others to develop an investment case, supported by surveillance data, at global, regional and national levels, to help countries gather evidence to secure policy change

Kenya asked WHO and partners to:
- Work with the global community to identify how to make influenza a ‘sexy disease’ in African and tropical countries.
- Ensure WHO regional and country offices prioritize influenza surveillance, vaccination and pandemic preparedness in their plans, including making this a deliverable in their reporting to HQ
- Work with the global community to prioritize influenza in tropical countries and see if they can get UN bodies to
create a global fund for influenza and pandemic preparedness
  • Support Kenya to update its pandemic influenza preparedness plan using and testing the PCPI and resource mapping tool

**Ethiopia** asked WHO and partners to:
  • Provide Ethiopia with technical support to implement its pandemic influenza preparedness plan and NAPHS, using the WHO resource mapping tool

**Serbia** asked WHO and partners to:
  • Organize simulation exercises at a regional level
  • Organize bridging workshops designed to bring together health security plans and pandemic influenza preparedness plans, with joint participation of stakeholders and operational personnel

**Latvia** made no specific request but noted the value of all the different WHO tools available, particularly PCPI and resource mapping tools. “Taking into account we’re going to revise our emergency preparedness and pandemic plans next year, this meeting marks a great start for this work.”

**Armenia** asked WHO and partners to:
  • Think about how to develop WHO-certified public health rapid response teams

**Finland** noted rapid progress made by WHO and countries in strengthening preparedness capacities, and especially in countries putting JEEs into practice in a tangible way. Finland described its next step in supporting countries: The Alliance for Health Security Cooperation (AHSC) (previously the JEE Alliance), in collaboration with WHO, has been developing a concept for financing capacity building through regional marketplaces to facilitate matchmaking between countries and stakeholders.

This concept will be put into action in Cabo Verde in March 2019, as part of the Second Africa Health Forum – Achieving Universal Health Coverage and Health Security in Africa: The Africa we want to see.

“This consultation has been critical; some work remains to be done to further sharpen the key tools and guidance introduced here.”

*Dr Constance Chan Hon-yee, Director of Health, Hong Kong SAR*
Conclusion

Dr Chan closed the meeting by reflecting on some of the key messages that she and her team took away from the discussion.

While looking forward to further refinement and development of WHO tools and guidance, she lauded the PCPI and resource mapping tools as useful enablers for countries to prioritize human and financial resources for the neediest areas and institutions; and to improve readiness to handle human global health threats as and when they arise.

Dr Chan underscored the importance of using simulations to test preparedness plans and response capacities, but warned that in the real world, pandemics rarely play out according to plan and that unexpected things happen all the time. “We should never be complacent,” she said. “Diseases have no boundaries and global health threats come and go in no time.”

Above all else, Dr Chan called on countries and regions to continue working together to build their capacities to prevent, detect and respond to pandemic influenza and further develop their preparedness plans.

“It is very important that we work together as a team; and it is through these kinds of international meetings that we build the networks from which friendships can grow to enable us to do that.”

Dr Constance Chan Hon-yee, Director of Health, Hong Kong SAR

In December 2017, more than 80 people from 33 countries attended the Stakeholder Consultation on National Health Security and Pandemic Influenza Preparedness Planning in Accra, Ghana. The meeting brought two Strategic Partnership Networks—the global health security network and the international influenza network—together for the very first time to find the critical synergies between national health security planning and influenza pandemic preparedness that can strengthen countries’ ability to cope with health threats with pandemic potential.

By the end of the Ghana meeting, having acknowledged the need for their networks to work more closely together, meeting participants agreed on five guiding principles to support stronger collaboration and coordination among themselves:

1. **Coordination is critical.** Influenza pandemics are inevitable; and in today’s increasingly interconnected world, coordinating our collective preparedness and response to them is vital. Just as global health security depends on all nations playing their part, so pandemic influenza preparedness depends on the contributions of all relevant stakeholders. Coordinating an effective, comprehensive approach to health emergency preparedness at local, national, regional, and global levels requires effective collaboration between health security and influenza networks.

2. **Collaboration beats competition.** Within governments, and across the spectrum of health security, competition for resources can lead to a duplication of efforts and an overlap of roles among stakeholders; it can also act as a disincentive to cooperate. Collaboration not only ensures a more effective future response, it also allows for a more efficient use of resources.

3. **Whole-of-government models work best.** The best model available for developing national health emergency and influenza preparedness is the harmonized national health security plan, which incorporates an influenza pandemic preparedness plan, built using a whole-of-government coordination structure.

4. **Joint preparedness exercises keep collaborations strong.** Strong collaborations are a function of more than memoranda of understanding. They require regular refinement and renewal through joint simulation exercises that build and maintain institutional capacity to mount an effective joint response.

5. **Strategic partnerships serve countries well.** Strategic partnerships between national health security and influenza networks, forged with a strong One Health approach, are critical in furthering countries’ efforts to respond to influenza and enhance health security preparedness.

Participants also made ten recommendations to countries and partners, outlining what they think must happen next to strengthen national preparedness for both pandemic influenza and health security more broadly (see Table below)
<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>GHANA MEETING RECOMMENDATIONS</th>
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<tbody>
<tr>
<td>1</td>
<td>Develop a national strategic framework for multisectoral collaboration</td>
</tr>
<tr>
<td></td>
<td>Base it on the common goal of better alignment of plans (which is also in line with the IHR (2005) principles)</td>
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<tr>
<td>2</td>
<td>Take a holistic approach in developing your national health emergency preparedness</td>
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<tr>
<td></td>
<td>This means including all relevant strategic and operational partners in key activities; and building capacity with a One Health approach, and addressing any gaps identified from national plan testing, JEE, OIE-PVS evaluations and After Action Reviews.</td>
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<tr>
<td>3</td>
<td>Take immediate action to ensure up-to-date plans.</td>
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<td></td>
<td>This includes developing (or reviewing and refining) national influenza pandemic preparedness plans (or the relevant component in a broader preparedness plan) to reflect relevant global guidance.</td>
</tr>
<tr>
<td>4</td>
<td>Develop a long-term plan to test, review and periodically update your preparedness plans</td>
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<tr>
<td></td>
<td>This includes actions to ensure that NIPPPs reflect the latest experience and expertise.</td>
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<tr>
<td>5</td>
<td>Think about how to enable optimal collaboration before, during, and after public health emergencies</td>
</tr>
<tr>
<td></td>
<td>This includes potentially reviewing, harmonizing, updating and testing existing plans, procedures and tools for health security and pandemic influenza preparedness.</td>
</tr>
<tr>
<td>6</td>
<td>Use global coordination and monitoring mechanisms to boost availability of vaccines</td>
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<tr>
<td></td>
<td>This includes bringing diverse stakeholders (including vaccine manufacturers) together to plan for and respond to public health threats.</td>
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<tr>
<th>WHO AND PARTNERS</th>
<th>GHANA MEETING RECOMMENDATIONS</th>
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<tr>
<td>7</td>
<td>Support countries to build a national framework for multisectoral collaboration and partnership.</td>
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<tr>
<td></td>
<td>Make sure that it includes influenza pandemic preparedness.</td>
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<tr>
<td>8</td>
<td>Develop strategies for transforming plans into actual capacities and actions</td>
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<td>This includes supporting countries to implement them.</td>
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<tr>
<td>9</td>
<td>Continue to support countries to test and update their plans.</td>
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<td></td>
<td>Support is needed for both influenza and health security (NIPPPs and NAPHS).</td>
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<tr>
<td>10</td>
<td>Invest in public health research capacities within the regions</td>
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<tr>
<td></td>
<td>Find new solutions and innovations that can enhance countries’ preparedness for preventing, detecting and responding to a new strain of influenza.</td>
</tr>
</tbody>
</table>

Table 2. Participants at the Ghana meeting made ten recommendations to countries and partners.
Annex 2. List of participants

<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>Cambodia</th>
<th>China</th>
<th>Democratic Republic of the Congo</th>
</tr>
</thead>
</table>
| **Armenia** | Dr Teng Srey  
*Deputy Director*  
Department of Communicable Disease Control  
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*Deputy Director*  
Division of Surveillance and Early-Warning  
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*Responsable du LNR Grippe*  
Departement de Virologie  
Institut National de Recherche Biomédicale |
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National Center of Diseases Control and Prevention  
Ministry of Health of the Republic of Armenia | Dr Zhenhong Li  
*Program Officer*  
Division of Infectious Diseases Prevention and Control  
National Health Commission | |
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Ministry of Health | | |
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| Bangladesh | Dr Mahmudur Rahman  
Institute of Epidemiology  
Disease Control and Research (IEDCR) | | |
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| Burkina Faso | Dr Pedwinde Hamadou Seogo  
*Epidemiologist*  
Direction de la protection de la santé de la population | Dr Zéniba Tarnagda  
*Director Laboratoire national de reference de grippe*  
National Influenza Centre | Dr Alfred Douba  
*Assistant Professor*  
Universite Felix Houphouet Boigny |
| Burundi | | | |
| Burundi | Mr Oscar Hajayandi  
Lab Representative  
Institut National de la Santé Publique | | |
| | Dr Diomede Ndayisenga  
*Director of Health Projects and Programs*  
Focal point of Pandemic influenza  
Ministry of Public Health and Fight Against HIV/AIDS | | |
| **Cote D’Ivoire** | | | |
| Cote D’Ivoire | | | |
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Dr Musse Tadesse  
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Public Health Emergency Management Center

Mr Desalegn Belay Takele  
Associate Researcher  
*Ethiopian Public Health Institute*

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*Médecin Lieutenant Colonel*  
Medicine interne et infectiologie  
Hopital d’Instruction des Amreens

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*Specialist at Communicable Diseases Department*  
LEPL National Center for Disease Control and Public Health

Ms Ana Kasradze  
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LEPL National Center for Disease Control and Public Health

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*Surgeon Commander*  
OIC Public Health

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Dr Constance Chan  
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Centre for Health Protection Department of Health

Dr Albert Au  
*Principle Medical Officer*  
Surveillance Centre for Health Protection Department of Health

Dr Raymond Ho  
*Chief Port Health Officer*  
Centre for Health Protection Department of Health

Dr Joanna Leung  
*Senior Medical Officer*  
Surveillance Section Centre for Health Protection Department of Health

Dr Allen Chan  
*Senior Port Health Officer*  
Centre for Health Protection Department of Health

Dr King Lun Fung  
*Port Health Officer*  
Centre for Health Protection Department of Health

Ms Swan Auyeung  
*Chief Inspector of Police*  
Emergency Response and Information Branch Department of Health
<table>
<thead>
<tr>
<th>Country</th>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Indonesia</td>
<td>Dr Karnely Herlena</td>
<td>Head of Section Influenza Program</td>
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<td></td>
<td></td>
<td>Directorate of Prevention and Communicable Diseases Control</td>
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<td></td>
<td>Ministry of Health</td>
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<td></td>
<td>Dr Pretty Multihartina Djoko Sasono</td>
<td>Director Center for Analysis of Health Determinant</td>
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<td>Ministry of Health</td>
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<td></td>
<td>Dr Mukti Eka Rahadian</td>
<td>Deputy director for Strategic Enviromental Analysis</td>
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<td></td>
<td>Dr Siswanto</td>
<td>Director General for the national Institute of Health Research and Development</td>
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<td>Ministry of Health</td>
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<td></td>
<td>Dr Iwan Trihapsoro, SpKK, SpKP</td>
<td>Colonel Doctor</td>
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<td>Pusat Kesehatan Tni</td>
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<td>Indonesian Armed Force</td>
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<td>Surgeon General Office</td>
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<td></td>
<td>Dr Lyndah Makayotto</td>
<td>Medical Epidemiologist</td>
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<td></td>
<td>Disease Surveillance and Response Unit</td>
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<td>Ministry of Health</td>
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<tr>
<td>Lao Republic People’s Democratic Republic</td>
<td>Dr Vilavanh Xayaseng</td>
<td>Deputy Director of Surveillance and Response Division</td>
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<td>Department of Communicable Disease Control</td>
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<td>Ministry of Health</td>
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<tr>
<td>Latvia</td>
<td>Ms Jana Feldmanane</td>
<td>Head of the Division of Environmental Health</td>
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<td>Health of the Public Health Department of the Ministry of Health</td>
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<td></td>
<td>Ms Indra Liniña</td>
<td>Deputy Head of Department of Disaster Medicine Preparedness Planning and Coordination</td>
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<td>State Emergency Medical Service</td>
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<td>Ministry of Health</td>
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<tr>
<td>Lesotho</td>
<td>Mr Khotso Mahomo</td>
<td>International Health Regulations Manager</td>
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<td>Ministry of Health</td>
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<tr>
<td></td>
<td>Mrs Ntsoaki Mokete</td>
<td>Integrated Disease surveillance and response National Focal Person</td>
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<td>Ministry of Health</td>
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<tr>
<td>Liberia</td>
<td>Hon. Henry A. Blake Jr.</td>
<td>Deputy Director General for Administration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>National Public Health Institute of Liberia</td>
</tr>
</tbody>
</table>
Malawi
Dr Evelyn Chitsa Banda
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Animal Sciences Institute
NARC

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*Medical Specialist*
National Emerging and Re-emerging Infectious Disease Program Manager

Romania
Dr. Călin Alexandru
*Director General*
Department for Emergency Situations
Ministry of Internal Affairs
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<tr>
<td>Serbia</td>
<td>Dr Dragana Dimitrijevic</td>
<td>Epidemiologist</td>
<td>IPH Serbia ‘Milan Jovnovic Batut’, Ministry of Health</td>
</tr>
<tr>
<td></td>
<td>Mrs Herlena Karnely</td>
<td></td>
<td>Head of Sub Division Upper Respiratory Tract Infection, Ministry of Health</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>Mrs Musu Mariama Abu</td>
<td>Laboratory Scientist</td>
<td>Central Public Health Reference Laboratory</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Dr Mohamed Alex Vandi</td>
<td>Director Health Security and Emergencies</td>
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<tr>
<td></td>
<td>Dr Samitha Ginige</td>
<td>Consultant Epidemiologist</td>
<td>Epidemiology Unit, Ministry Of Health</td>
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<td></td>
<td>Dr R.P. Palitha Karunapema</td>
<td>Director Quarantine Unit</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>Tanzania</td>
<td>Dr Daudi Mussa Kadigi</td>
<td>Research Fellow</td>
<td>DMLS, BSc Health Lab, MSc Epidemiology &amp; Lab Management, Military College of Medical Sciences</td>
</tr>
<tr>
<td></td>
<td>Dr Peter Babigumira Ahabwe</td>
<td>Project Pharmacist</td>
<td>Global Health Security Project, Infectious Diseases Institute, College of Health Sciences, Makerere University</td>
</tr>
<tr>
<td>Thailand</td>
<td>Mr Chalerm suk Yugala</td>
<td>Lieutenant General</td>
<td>Royal Thai Army, Chemical Department Advisory</td>
</tr>
<tr>
<td></td>
<td>Dr Sopon Iamsirithaworn</td>
<td>Director</td>
<td>Bureau of General Communicable Diseases, Department of Disease Control, Ministry of Health</td>
</tr>
<tr>
<td>Vietnam</td>
<td>Dr Vu Ngoc Long</td>
<td>General Department of Preventive Medicine</td>
<td></td>
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<tr>
<td></td>
<td>Dr Anupong Sujariyakul</td>
<td>Medical officer</td>
<td>Office of the Senior Expert Committee, Department of Disease Control, Ministry of Health</td>
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<td></td>
<td>Dr Issa Makumbi</td>
<td>Director PHEOC</td>
<td>Ministry of Health</td>
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<tr>
<td>Tunisia</td>
<td>Professor Riadh Allani</td>
<td>Public Health Epidemiologist</td>
<td>Faculty of Medicine of Tunis</td>
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<td></td>
<td>Prof. Anis Klouz</td>
<td>Director of Medical Research</td>
<td>Ministry of Health</td>
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<tr>
<td>Uganda</td>
<td>Dr Julius Lutwama</td>
<td>Senior Principal Research Officer Head</td>
<td>Department of Arbovirology and Emerging Viral Infections, Uganda Virus Research Institute (UVRI), National Influenza Center</td>
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<td>Dr Issa Makumbi</td>
<td>Director PHEOC</td>
<td>Ministry of Health</td>
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</tbody>
</table>
### Zambia

Mr Paul Simusika  
*Virologist*  
NIC

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Dr Isaac Phiri  
*Deputy Director*  
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Crick Worldwide Influenza Centre  
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### World Organization for Animal Health (OIE)

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*Regional Veterinary Officer*  

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Adjunct Assistant Professor  
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Dr John Tan  
*Professor*  
Hong Kong Polytechnic University

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Office of Health Protection  
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Dr Alex Stephens  
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Department of Foreign Affairs and Trade  
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China CDC

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Strategic Planning and Capacity  
Public Health Emergency Center  
CDC

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*Health Counsellor*  
Permanent Representation of Finland to the European Union

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Dr Jennifer E. Seedorff
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Dr Lingyun Yao
_Health Specialist_
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Dr James Green Leaf
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Dr Joseph Bresee (through Video Call)
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Global Health Security Agenda Team
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NON_STATE ACTOR

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