The Asia Pacific Strategy for Emerging Diseases (APSED) was developed in 2005 then revised in 2010. The strategy established a framework to guide the efforts of Member States to strengthen capacity for emerging diseases and public health emergencies, thus protecting health security. APSED serves as a common regional framework for action and provides a step-wise approach for Member States to achieve core capacities required under International Health Regulations (IHR 2005).

A 2015 evaluation of APSED implementation concluded that much progress had been made over the past decade and APSED approach remained relevant. Given that the Region continues to face health security threats, the Asia Pacific Technical Advisory Group (TAG) on APSED recommended updating the strategy. Based on a series of country and regional consultations, the proposed draft Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III) incorporates lessons learnt from APSED implementation and past events, and reflect the changing national, regional and global context.

The Regional Committee for the Western Pacific is requested to consider for endorsement the draft Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III).
1. CURRENT SITUATION

The Asia Pacific region remains a hotspot for health security threats and is vulnerable to threats originating from within and outside the region. In the past decade, several public health events in the Asia Pacific region — including SARS, H5N1 and H7N9 — have tested the region's capacity to respond. The largest-ever Ebola virus disease outbreak and Middle Eastern Respiratory Syndrome (MERS) corona virus outbreak, both originating from outside the region, also required significant responses from Member States in the Asia Pacific region.

The Asia Pacific Strategy for Emerging Diseases (APSED) was developed in 2005 and revised in 2010, and both were endorsed by the Regional Committee for the Western Pacific. The strategy established a framework to guide Member States in strengthening health security. APSED aimed to build sustainable national and regional capacities, as well as partnerships to ensure health security through preparedness planning, prevention, early detection and rapid response to emerging diseases and other public health events. APSED served as a regional tool to comply with the International Health Regulations (IHR 2005), and provided a framework for action for Member States to develop IHR core capacity requirements, as well as to strengthen the regional surveillance, risk assessment and response system.

The 2015 evaluation of APSED concluded that much progress had been made. Specifically, capacity of Member States was improved for: surveillance and response; human resource development through Field Epidemiology Training Programmes; laboratory capacity for diagnosis of priority and unknown diseases; coordination between human and animal health sectors for zoonoses; communication between Member States and WHO through the IHR mechanism; and monitoring and evaluation. The evaluation of APSED also identified limited progress in several areas, including: risk assessment; infection prevention and control; risk communications; and establishment of functional emergency operation centres within ministries of health.

In July 2015, the APSED Technical Advisory Group recommended that an updated strategy be developed to succeed APSED 2010, incorporating experiences and lessons learnt over a decade of APSED implementation. An intensive bottom-up consultation process was conducted during 2015 and 2016 to make certain the revised strategy was relevant and positioned in the new context. The draft Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III) was reviewed and agreed at the APSED Technical Advisory Group Meeting, on 28–30 June 2016.

The threat from emerging diseases and other public health events is ever-present, and all Member States are vulnerable. As evidenced by recent public health events that caused international
concern — namely the Ebola virus disease, MERS, Zika virus and yellow fever outbreaks — public health events can impact the overall social and economic well-being of a country. In prioritizing limited resources for health, strengthening and maintaining core capacities for emerging diseases and public health emergencies, and sufficient financing are some of the essential components of a resilient health system for every Member State.

2. ISSUES

The need for a common framework for health security remains. There is a need for an updated strategy that reflects lessons learnt from the past decade, and new developments and initiatives within WHO, regionally and globally.

2.1 The Region continues to face health security threats

The Western Pacific Region is a hotspot for emerging diseases. The first novel emerging infectious disease outbreak of the century, SARS, occurred in the Region in 2003. Following this major public health event, the Region has continued to experience and learn from many disease outbreaks and public health emergencies. Every year in the Region, event-based regional surveillance detects and manages an average of 200 events. These events have included cholera, dengue and human infections with novel influenza subtypes, indicating that pandemic risk persists. Additionally, Zika virus, imported cases of MERS, and yellow fever continue to challenge health systems in an increasingly interconnected world. Recurring outbreaks and public health emergencies have highlighted the Region’s vulnerability to emerging disease threats, originating both in and outside of the Region. These threats demonstrate the continuing need for an updated Asia Pacific strategic framework to further strengthen preparedness and response to emerging infectious diseases and public health emergencies.

2.2 The need for collective action to further strengthen public health systems

In a world of constant change where risks to the Region are constantly evolving due to changes in hazard, exposure, and vulnerability, a common framework for action is vital to uphold the core components required for public health preparedness and response, and to provide a generic system to support Member States in achieving the IHR core capacities. The generic approach proposed by APSED III facilitates further strengthening of public health emergency preparedness and response capacities, which include surveillance, risk assessment, laboratory capacity, risk communication and emergency operations. These core components are required to respond to any hazard and, as such,
provide a foundation flexible enough to adapt to address unknown or unusual hazards. Strengthening core components is an effective approach that will result in a more efficient use of resources, the avoidance of unnecessary vertical programmes and more sustainable health systems.

2.3 National, regional and global contexts are rapidly changing

Many Member States in the Asia Pacific region are experiencing a rapidly changing context including social and economic development, and improved capacity in managing health security threats. Meanwhile, Member States will be affected by a number of recent regional and global initiatives, strategies and frameworks including the IHR Review Committee recommendations, universal health coverage, Sustainable Development Goals (SDGs), the Sendai Framework for Disaster Risk Reduction, and the Global Health Security Agenda. The changing country landscapes and new global initiatives require an updated regional strategic framework for actions that is relevant, focused and flexible for implementation by Member States. Based on intensive bottom-up consultations with Member States and partners, APSED III has been developed to further strengthen public health emergency preparedness and response capacity and capability by focusing on improving core public health systems and increasing regional connectivity. Recognizing that Member States are at different stages or levels of public health preparedness and that country contexts are continually changing, APSED III provides a flexible platform for Member States to implement recommended strategic actions and to strengthen linkages with the different initiatives.

3. ACTIONS PROPOSED

The Regional Committee for the Western Pacific is requested to consider for endorsement the draft Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III).
DRAFT

Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies

Advancing Implementation of the International Health Regulations beyond 2016

World Health Organization
Western Pacific Region
Annex
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**ABBREVIATIONS AND ACRONYMS**

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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AMR</td>
<td>antimicrobial resistance</td>
</tr>
<tr>
<td>APSED</td>
<td>Asia Pacific Strategy for Emerging Diseases</td>
</tr>
<tr>
<td>APSED III</td>
<td>Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies</td>
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<tr>
<td>CCS</td>
<td>country cooperation strategy</td>
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<tr>
<td>EBS</td>
<td>event-based surveillance</td>
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<tr>
<td>EID</td>
<td>emerging infectious diseases</td>
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<tr>
<td>EOC</td>
<td>emergency operations centre</td>
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<tr>
<td>FETP</td>
<td>Field Epidemiology Training Programme</td>
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<tr>
<td>GOARN</td>
<td>Global Outbreak Alert and Response Network</td>
</tr>
<tr>
<td>HCAI</td>
<td>Health-care associated infection</td>
</tr>
<tr>
<td>IBS</td>
<td>indicator-based surveillance</td>
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<tr>
<td>IHR</td>
<td>International Health Regulations</td>
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<tr>
<td>IHR NFP</td>
<td>National IHR Focal Point</td>
</tr>
<tr>
<td>IMS</td>
<td>incident management system</td>
</tr>
<tr>
<td>INFOSAN</td>
<td>International Food Safety Authorities Network</td>
</tr>
<tr>
<td>IPC</td>
<td>infection prevention and control</td>
</tr>
<tr>
<td>JEE</td>
<td>joint external evaluation</td>
</tr>
<tr>
<td>M&amp;E</td>
<td>monitoring and evaluation</td>
</tr>
<tr>
<td>MOU</td>
<td>memorandum of understanding</td>
</tr>
<tr>
<td>PHEIC</td>
<td>public health emergency of international concern</td>
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<tr>
<td>PHEP</td>
<td>public health emergency preparedness</td>
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<tr>
<td>POE</td>
<td>points of entry</td>
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<tr>
<td>PPE</td>
<td>personal protective equipment</td>
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<tr>
<td>RRT</td>
<td>rapid response team</td>
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<tr>
<td>SDG</td>
<td>Sustainable Development Goals</td>
</tr>
<tr>
<td>TAG</td>
<td>technical advisory group</td>
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<tr>
<td>UHC</td>
<td>universal health coverage</td>
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<td>WHO</td>
<td>World Health Organization</td>
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EXECUTIVE SUMMARY

In the Asia Pacific region, outbreaks and public health emergencies caused by emerging infectious diseases, the impacts of natural disasters, and unsafe food and water continually threaten health security. Globally and regionally there have been recent outbreaks of avian influenza, Ebola virus disease, Middle East respiratory syndrome (MERS), dengue, Zika virus and yellow fever, as well as disasters caused by natural hazards, including cyclones, floods, droughts, earthquakes, tsunamis and volcanoes. Additionally, animal and human populations live in ever-closer proximity in the Asia Pacific region, giving rise to novel infectious diseases, usually zoonotic, such as avian influenza viruses with pandemic potential through cross-species transmission. The presence of newer threats such as environmental, chemical and radiological emergencies as well as uncommon patterns of antimicrobial resistance (AMR) continue to add to our regional vulnerability.

Given the unpredictable nature of such events, and the recognition that the world is “shrinking” as travel times from one geographic region to another rapidly decrease, there is a need to further strengthen core capacities under the International Health Regulations (2005), or IHR (2005). IHR (2005) is the agreed legal framework among Member States for detecting, preparing for and responding to public health emergencies. Ebola reconfirmed the fundamental need to further strengthen the core capacities mandated under IHR (2005) to improve health security.

Member States have drawn valuable lessons from past events through reviewing experiences and developing plans, thereby strengthening their preparedness to respond to new and recurring health security threats in Asia Pacific region. Every emergency response provides an opportunity to learn through identifying areas requiring improvement, ultimately strengthening the collective readiness to respond. This continuous cycle of learning and system improvement enhances the preparation of Member States for unexpected events. Public health emergency preparedness (PHEP) is a crucial component of health systems that strengthens resilience to health security threats, and Member States are encouraged to invest in preparedness, especially in the time between emergencies. In an interdependent world, coordination, communication and information-sharing among countries and various sectors, stakeholders and initiatives, as well as with the community, are vital for improved preparedness.

For the past decade, the Asia Pacific Strategy for Emerging Diseases (APSED) has provided a common framework for action in the Asia Pacific region for the implementation and strengthening of the core capacities required under IHR (2005). Results from the evaluation of APSED implementation conducted in 2015 confirmed that Member States viewed APSED as an important and relevant strategy for implementing IHR (2005). As a result, the Technical Advisory Group (TAG) on the APSED (APSED TAG) meeting in 2015 recommended that WHO develop a new strategy for the Asia Pacific region. This new strategic framework, titled the Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III), reflects the all-hazards approach adopted by the Asia Pacific region and incorporates the lessons learnt from actual events. Extensive bottom-up consultations with Member States, technical experts and partners reconfirmed the relevance of APSED as the common framework for action for working towards IHR core capacities and building national capacity to prevent, detect, respond to and mitigate health security threats.
Annex

The direction and structure of APSED III builds on APSED (2010), and also reflects the findings and recommendations of the 10-year evaluation of APSED implementation. APSED III aims to further enhance the core public health systems and regional collaboration and connectedness, as a priority for effective management of PHEP and response through adoption of incident management systems for all-hazards.

The vision for APSED III is an Asia Pacific region able to prevent, detect and respond to public health emergencies through collective responsibility for public health security. The goal of this strategy is to strengthen PHEP and response capacity by improving core public health systems, increasing regional connectivity and coordination, and investing in ongoing performance improvement. The purpose of APSED III is to provide a strategic approach to guide collective efforts of all Member States, WHO and partners in implementing the obligations of IHR (2005) to attain core capacities and to further enhance gains made, and to ensure financial sustainability through actions that promote and protect the health of the people in the Asia Pacific region.

APSED III contributes to health system strengthening and universal health coverage by focusing on eight essential public health functional areas necessary for PHEP, risk mitigation and response operations. APSED III is not intended to be implemented in isolation, so flexibility has been built into the strategy to enable harmonization with other national and international frameworks and initiatives, including the Sendai Framework for Disaster Management, the United Nations Framework Convention on Climate Change, the Sustainable Development Goals (SDGs), universal health coverage (UHC) and the Global Health Security Agenda, and to address the importance of further enhancing collaboration on zoonoses using a One Health approach. Based on bottom-up consultations, the eight focus areas in APSED III that are implementable include:

1. Public Health Emergency Preparedness
2. Surveillance, Risk Assessment and Response
3. Laboratories
4. Zoonoses
5. Prevention through Health Care
6. Risk Communication
7. Regional Preparedness, Alert and Response

Each focus area has projected outcomes and strategic actions. APSED III focus areas remain relevant to all Member States as ongoing priorities for system improvement, especially for Member States that have most IHR (2005) core capacities in place. As before, Focus Areas 1 to 6 are primarily aimed at national and local capacity-building. Focus Area 7 addresses strengthening regional preparedness, surveillance, risk assessment and response systems that are coordinated by WHO on behalf of Member States. Finally, Focus Area 8 refers to the integrated national, regional, and global monitoring and evaluation systems, including annual progress reporting, simulation exercises, outbreak reviews and joint external evaluations that emphasize learning for continuous improvement.
Other components, including the legal basis and financing health security, are vital for PHEP and response. These components will be embedded in the health system.

APSED III retains and builds upon the guiding principles of previous APSED strategies, and places some additional emphasis in certain areas. APSED III:

• places countries, communities and people at the centre (country focused and people-centred);
• provides a generic platform to strengthen IHR (2005) core capacities and core systems required for managing public health emergencies (an all-hazards approach);
• adopts a step-by-step approach to develop or enhance PHEP (staged approach);
• reviews experiences and lessons from past events and revises plans (continuous learning for improvement);
• advocates the importance of connecting national surveillance, risk assessment and response systems to the regional and international levels (regional and global public goods);
• increases the emphasis on partnerships for collective preparedness and response, and provides a common platform for stakeholder engagement (partnerships for collective action);
• increases the importance of looking to the future, including predicting risks, and being proactive rather than reactive (forward looking); and
• Invest in preparedness (financial sustainability).

APSED III takes a pragmatic, adaptive and forward-looking approach as a framework for ongoing collective action for health security. While APSED III focuses on essential public health functions, it provides even greater flexibility for implementation by Member States based on country context and national priorities.

The 2016 APSED TAG is committed to "leaving no one behind" as advocated in the SDGs, by ensuring national and regional health security through intensified collaborative efforts. Indicators will be developed consistent with the IHR (2005) monitoring framework, including the use of annual national and regional meetings to review, plan, and prioritize PHEP and response activities.
Annex
1. Introducing the strategy

1.1 Background

The Asia Pacific region comprises the 48 countries and areas of the World Health Organization (WHO) South-East Asia Region and Western Pacific Region. It is the world’s most populous region and one of the most diverse in terms of culture, socioeconomic development, climate and geography. The Asia Pacific region continues to face health security risks from emerging diseases and public health emergencies. Regional event-based surveillance (EBS) systems are present in both regions; emerging infectious diseases (EIDs) detected include human infections with novel influenza virus subtypes, Middle East respiratory syndrome (MERS), imported cases of yellow fever and Zika virus. The Asia Pacific region also frequently experiences outbreaks and public health emergencies in the aftermath of natural hazards, such as extreme weather events and earthquakes.

Not only will the risk of future events continue, but they are likely to become even more complex due to a changing social, environmental and economic landscape and forecasts of significant climate change that will potentially magnify the devastating health, political and economic impacts of these events. Effective management of emergency events is required to minimize their health, economic, social and political impact. Such events are also stressful, and the psychosocial dimensions of outbreaks and public health emergencies need to be addressed early in order to minimize individual and population-based anxiety that may pose a threat to public health and safety.

Health security threats, particularly outbreaks of emerging diseases, can rapidly expand to affect multiple countries, highlighting the need for collective preparedness and response, and a common strategic direction nationally, regionally and globally. Capacities and systems need to be strengthened in order to anticipate risks and act early in response to identified threats. This will increase the resilience and sustainability of health systems in line with, Universal Health Coverage: Moving Towards Better Health, Action framework for the Western Pacific and Regional Strategy for Universal Health Coverage (SEAR) and is a means of reaching the Sustainable Development Goals (SDGs), particularly those relating to universal health coverage (UHC).

To prevent, control and respond to continuous and inevitable health security threats, 194 countries agreed to implement the International Health Regulations (2005), or IHR (2005). IHR (2005) is the legal framework for the collective responsibility of Member States and WHO to protect global health security. For the past decade, the Asia Pacific Strategy for Emerging Diseases (APSED) has been the strategic framework to help guide Member States in the Asia Pacific region to implement and strengthen IHR core capacities.

APSED was developed in 2005 and focused on building the minimum components of the system, such as rapid response teams (RRTs), EBS systems and the Field Epidemiology Training Programme (FETP). APSED was revised in 2010, based on Member State evaluations and lessons learnt from the influenza A(H1N1) pandemic in 2009 and other public health events. APSED (2010) focused on meeting all IHR core capacity requirements and expanded minimum components from the original five to eight, adding: 1) public health emergency preparedness (PHEP); 2) regional preparedness, alert and response; and 3) monitoring and evaluation (M&E).
Annex

In 2015, an evaluation of the past decade of APSED implementation concluded that significant progress had been made. In particular, improvements were noted in the capacity of a number of Member States for surveillance, for human resource development through FETP, for laboratory capacity for diagnosis of priority and unknown diseases, and for communication between Member States and WHO through the IHR mechanism. However, the evaluation concluded all Member States in the Asia Pacific region remain vulnerable to emerging diseases and public health emergencies, and that challenges continued to exist in national and regional readiness to respond to large-scale and complex events in an effective and coordinated way. Multisectoral coordination remains challenging for Member States, however, the joint external evaluation (JEE) process for reviewing IHR implementation provides a means by which partners from different sectors collaborate and coordinate efforts to assess and provide recommendations on IHR implementation. The financial sustainability of core public health programmes also remains challenging.

Overall, both the 2015 evaluation of APSED and feedback from Member States confirmed that APSED was an important and relevant strategy for implementing IHR (2005), and that the strategic direction was still relevant.

1.2 Scope

APSED is a common bi-regional framework for implementing IHR (2005), and as such its scope is to strengthen and further improve public health security systems and functions required for PHEP and response.

The Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies (APSED III) maintains its generic approach to preparedness and response for all hazards. APSED III does not seek to re-write or duplicate other available strategies, but aims to provide a high-level framework that can give a common direction and approach to detailed hazard-specific strategies – for example how to prepare for biological and natural hazards, or food or water safety events. The updated name for the strategy – which added “and Public Health Emergencies” to the title used in the two previous versions – is intended to better reflect the all-hazards scope and purpose of the strategy.

APSED III strengthens core public health functions as well as many key health system functions such as the health workforce, service delivery, information and technology systems, and leadership and governance, to support a more resilient health system. In the wider landscape of development, there are a number of issues – such as the recognition of health security and the need for a clearer focus on equity, gender and human rights – that APSED responds to by contributing to ongoing and new initiatives including the SDGs, UHC and the Sendai Framework for Disaster Risk Reduction 2015–2030. APSED III also works in synergy with other initiatives including the Global Health Security Agenda (GHSA).
1.3 APSED guiding principles

APSED III retains and builds upon the principles and approach of previous APSED strategies, and places some additional emphasis in certain areas. APSED III:

- places countries, communities and people at the centre (country focused);
- provides a generic platform to strengthen IHR (2005) core capacities and core systems required for managing all public health emergencies (an all-hazards approach);
- adopts a step-by-step approach to develop or enhance PHEP (staged approach);
- reviews experiences and lessons from past events and revise plans (continuous learning for improvement);
- increases the importance of connecting national surveillance, risk assessment and response systems to the regional and international levels (regional and global public goods);
- increases the emphasis on partnerships for collective preparedness and response, and provide a common platform for stakeholder engagement (partnership for collective action);
- increases the importance of looking to the future, including predicting risks, being proactive rather than reactive (forward looking); and
- Invests in preparedness (financial sustainability).

1.4 Intended implementers

In response to our shared vulnerability and responsibility to ensure health security, the key implementers of APSED III are Member States, WHO and partners. Implementation should be overseen by departments responsible for the management of emerging diseases, PHEP and response, in coordination with the unit or office designated as the national IHR focal point (NFP), if they are different and national disaster management offices.

Other important implementers are agencies working on health systems strengthening; zoonotic and emerging diseases in the agriculture, livestock and wildlife sectors; food safety authorities; and environmental health and other departments concerned with the management of public health emergencies such as chemical or radiological events.

In addition, academia, the private sector, nongovernmental organizations, civil society and security and judicial authorities can play an important role in implementing APSED III, especially PHEP and response.

It is anticipated that national health authorities will raise awareness of APSED III and engage in its implementation with other sectors and agencies, including other United Nations agencies and intergovernmental organizations. Regional technical partners and development partners are strongly encouraged to use this framework to maximize the use of resources and support coordinated actions at the country and regional levels.
Annex

1.5 Use of the strategy

It is highly recommended that the strategy be used in the following ways:

- as a common framework to further enhance the gains made in building national and local capacities to manage EIDs and public health emergencies during the previous decade of APSED implementation to further improve health security and agree on priority activities;
- as a common approach to facilitate coordination of various initiatives and external support and maximize multisectoral collaboration at the national and regional levels;
- as a regional mechanism to collectively monitor progress, facilitate learning for continuous improvement, and improve regional preparedness and response; and
- as a strategic document for advocacy and to mobilize domestic and external financial and technical resources.

1.6 Time frame for implementation

APSED III envisions a safer and more secure Asia Pacific region when fully implemented. APSED III is designed to have a flexible implementation time frame of five to eight years to accommodate differences in national planning cycles and capacities across the Asia Pacific region and global changes in the IHR implementation agenda.

When fully implemented, the strategy will ensure that countries in the Asia Pacific region:

- are ready to respond to disease outbreaks and public health emergencies of national and international concern consistent with their IHR (2005) obligations;
- have assessed their preparedness and operational readiness through self-assessment methods and JEE; and
- have strong functional mechanisms and partnerships for collaboration.
2. **Vision, goal, objectives and purpose**

2.1 **Vision**
An Asia Pacific region able to prevent, detect and respond to public health emergencies through collective responsibility for health security.

2.2 **Goal**
To strengthen PHEP and response capacity by improving core public health systems, increasing regional connectivity and coordination, and investing in ongoing performance improvement.

2.3 **Objectives**
APSED III has been organized around six interlinked objectives that underpin the goal and purpose, and provide a framework for realizing the vision for the Asia Pacific region.

- Objective 1. Strengthen effective preparedness for emerging diseases and public health emergencies
- Objective 2. Reduce the risk of emerging diseases and public health emergencies
- Objective 3. Strengthen early detection and assessment of outbreaks and public health emergencies
- Objective 4. Strengthen rapid and appropriate response and recovery to emerging diseases and public health emergencies
- Objective 5. Build strategic partnerships and sustainable financing for public health preparedness and response
- Objective 6. Strengthen prevention through health care

2.4 **Purpose**
APSED III provides a strategic framework for action and allows Member States flexibility in its implementation. It takes into account the needs and priorities of Member States; lessons learnt; the changing economic, environmental, demographic and social landscape; and the development and implementation of initiatives and frameworks that APSED III contributes to, such as the SDGs, UHC and the *Global Health Security Agenda*. The overriding purpose of APSED III is to provide a strategic approach to guide the collective efforts of Member States, WHO and partners in implementing the obligations of IHR (2005) and to further enhance gains made and ensure financial sustainability through actions that promote continuous learning and protect the health of the people in the Asia Pacific region.
Annex

Fig. 1. APSED III vision, goal, objectives and focus areas
3. Focus areas

APSED (2010) consisted of eight focus areas, and in APSED III the categories have been revised and updated (Fig. 1). Based on intensive bottom-up consultations with Member States and intended to ensure that APSED III can be implemented, the new strategy continues to develop and strengthen the APSED (2010) focus areas to provide a flexible platform for capacity-building and development.

Two notable changes are a re-ordering of focus areas and a new focus area that highlights preparedness and prevention in health care settings. PHEP has been moved up as the foundation for all the other focus areas. PHEP focuses on response planning and the elements covered in other focus areas needed to provide “system readiness” for implementing response plans.

While some progress has been made in Infection Prevention and Control (IPC) since APSED (2005), investments in minimizing infection transmission risk during health care and combatting antimicrobial resistance (AMR) are still needed. As a result, IPC, clinical management, AMR and hospital preparedness have been brought together into a wider focus area, titled Prevention through Health Care. This focus area places greater emphasis on linkages between public health and clinical services as part of a strong overall health system for preventing, detecting and responding to emerging diseases, especially so that individual cases and “small” events can be managed well to prevent disease spread.

The eight focus areas in APSED III are:

1. Public Health Emergency Preparedness
2. Surveillance, Risk Assessment and Response
3. Laboratories
4. Zoonoses
5. Prevention through Health Care
6. Risk Communication
7. Regional Preparedness, Alert and Response

A schematic overview of APSED III (Fig. 2) illustrates the constituent focus areas – with Public Health Emergency Preparedness at the centre – and their interrelationship and connection to regional and global preparedness, alert and response. Focus Areas 1 to 6 primarily target national and local capacity-building. Focus Area 7 addresses strengthened regional preparedness, surveillance, risk assessments and response systems, coordinated by WHO on behalf of Member States. Focus Area 8 targets national- and regional-level systems for collective learning for continuous improvement, and contributes to global monitoring and evaluation as it incorporates the four components of the IHR monitoring and evaluation framework, including joint external evaluations.
3.1 Public Health Emergency Preparedness (Focus Area 1)

3.1.1 Introduction

Public health emergency preparedness sits at the core of APSED (Fig. 2), and is a key aspect of sustainability and resilience as outlined in, *Universal Health Coverage: Moving Towards Better Health Action framework for the Western Pacific* and *Regional Strategy for Universal Health Coverage (SEAR)*. While much of this focus area concentrates on the development of emergency plans, it also highlights the importance of system readiness, that is, having in place the key functions, people, resources, tools and facilities across the health system (and in other sectors) to operationalize those plans effectively and efficiently. The health sector will need to work together with other sector actors (for example, agriculture/wildlife, education, environment, foreign affairs, security, trade and industry, and civil society) to plan for and respond to public health emergencies, and to ensure effective plans and adequate resources are in place. Experience has shown that putting all the right components in place before an event provides the foundation for delivering prompt and effective management of an emergency event. Furthermore, having incident management system (IMS)
capacity with trained personnel who can be rapidly activated for an effective response can prevent a small emergency from becoming a big one. The two concepts mentioned above – planning and readiness – were introduced in APSED (2010) as a “two-tier approach”, which is shown in Fig. 3.

**Fig. 3. Framework for public health emergency planning and preparedness**

Emergency planning (the top tier in Fig. 3) is described later in this focus area, and has been split into two parts: 1) the response plan itself; and 2) the ongoing planning and coordination process.

System readiness is about ensuring that all structures and resources in the health sector and other sectors are available including multisectoral coordination mechanisms that facilitate a whole-of-society approach and allow response plans to be implemented immediately and effectively – in other words “enabling factors”.

The national PHEP systems, structures and resources that need to be in place and further strengthened, include:

- System elements that have a particular emphasis on health security and emergencies include national IHR focal points (NFPs), points of entry (POE), hospital preparedness (including surge capacity), and emergency response structures.

- System elements that have important functions for emergencies but also have a role as “routine” health sector and cross-sector functions. These are covered in subsequent focus areas.
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- System elements that play a key role in the wider health sector and addressing long-term health needs of the population, including national health policies, governance and funding, coverage and access to health-care services, and the wider health regulatory environment. While most of these elements are beyond the scope of this document, they should be considered alongside APSED as part of a comprehensive health systems strengthening approach. Further guidance on some of these elements is referred to in Section 5.

In the area of PHEP, a number of challenges remain despite significant progress made since APSED (2005) implementation. Challenges identified from the APSED (2010) evaluation and consultation with Member States include:

- There is a need for strengthening public health emergency management capacity, including ability to manage people, resources, time and information.

- There is either a national EID or pandemic influenza plan in most Member States, but most do not have an all-hazards response plan to guide all parts of the health sector or explicitly set out how health will work with other sectors and link with the disaster management system.

- Most Member States had established national coordination mechanisms by 2015, especially between animal and human health sectors to address zoonotic diseases. However these mechanisms are often only active during a response rather than working in an ongoing fashion, and their functionality needs improvement.

- There have been significant improvements in public health event communication and verification by the IHR mechanism; however, the functions of IHR NFPs, including having generic 24/7 communication systems, need to be further improved.

In the Asia Pacific region, there is evidence that health "central command and control centres" exist and uses IMS and emergency operations centres (EOCs) to address public health emergencies and coordinate risk assessment and management of epidemic-prone diseases. In those cases, positive changes in coordination, communication and information-sharing have been reported. However, EOC functionality and familiarity with IMS, as well as training and exercises, require further attention, and a consideration of how these structures connect at national, regional and global levels.

The expected outcome and actions listed below reflect the fundamental components of PHEP that all Member States need to have in place regardless of their level of capability. Once in place, capability should be strengthened further by shifting focus to regular testing and improving functionality.

### 3.1.2 Expected outcome

National plans, structures and resources are in place, and function well, for managing outbreaks and public health emergencies.

The key elements for this focus area are:

- Improved management of emergency events through the use of IMS principles.

- An all-hazards national operational response plan for public health emergencies is developed, tested, revised and maintained.
A public health emergency planning and coordination process is in place, with appropriate authority, and building on existing mechanisms set up under APSED.

Public health emergency response systems, including EOCs, are prepared and tested and management capacity is strengthened.

The IHR NFP system is further strengthened and 24/7 communications capability is ensured.

POE have public health emergency contingency plans that are part of the national public health emergency response plan and that are regularly tested, and use border measures that are appropriate and effective.

3.1.3 Strategic actions

Improved management of emergency events through the use of IMS principles

- Establish and/or maintain public health emergency response protocols based on IMS principles, including clear roles, lines of communication and reporting, common terminology, and scalability and flexibility so that size and functions can adapt to changing needs.

- Ensure response structures have sufficient and appropriate physical resources. This includes equipment to set up physical or virtual EOC, information and communications tools preferably with the ability to work with existing systems, for example surveillance, and other essential response equipment.

- Ensure that multisectoral coordination, communication and information-sharing mechanisms are functional at national and subnational levels and can relocate and mobilize resources as required.

- Develop training programmes and exercises for management of emergency events, including incident management, EOC operations and response logistics.

- Engage in multi-stakeholder training and simulation exercises to ensure functionality of emergency management systems. Where appropriate, these activities should include other non-health ministries and departments, United Nations agencies, security authorities, public and private sector organizations and civil society.

Develop and test a national all-hazards response plan for public health emergencies

- Develop and maintain an all-hazards national operational response plan for public health emergencies (see Fig 3), including deliberate release events. When and where practicable, these plans should include national resource and risk mapping, be adapted to match country risks and consider the management of new and multiple concurrent threats.

- Supplement all-hazards plans with hazard-specific plans when needed or operating procedures, which, at a minimum, include health-care facility plans and business continuity plans.
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- Test and revise emergency response plans to improve multisectoral coordination, communication and information-sharing. Plans should include sending, receiving or distributing staff, supplies and equipment.
- Support plans with legislation when required, including any special measures needed for emergency response or recommended under IHR (2005).
- Ensure sustainable financing and emergency contingency funding necessary to procure and maintain national stockpiles, for example personal protective equipment (PPE), antivirals, vaccines, and other emergency supplies and equipment.

**Ensure there is an ongoing and coordinated process for planning, management and response**

- Establish and/or maintain a systematic coordination mechanism for emergency preparedness and response with relevant stakeholders, including other non-health ministries and departments, United Nations agencies, security authorities, public and private sector organizations and civil society.
- Ensure there is authority and clarity of sector and agency roles and responsibilities, through legislation, memorandums of understanding (MOUs), interagency agreements, and operating procedures to mandate and guide preparedness and response for all hazards, and deliberate release events.
- Establish and/or maintain a public health function for IHR/APSED leadership and coordination. Where appropriate, this function could utilize the IHR NFP.
- Ensure PHEP planning processes align with or are part of other national work plans and the overall APSED M&E process (refer to the monitoring and evaluation focus area).

**Prepare and test public health emergency response systems**

- Strengthen public health emergency management capacities (human resource, financial and information management, logistics, and resource mobilization). Establish and/or strengthen health EOCs that can coordinate preparedness and response across the health sector, and with other sectors not only for major events but also for responses to smaller or medium-sized events.
- Ensure response structures can rapidly access expert technical advice and logistical expertise, have mechanisms for rapid deployment of surge personnel and supplies, have staff trained in emergency response including the use of IMS and EOCs, and can ensure the safety and security of response staff including psychosocial support if needed.
Strengthen IHR national focal points

- Ensure there are policies and/or legislation in place to facilitate IHR NFP core and expanded functions and to strengthen core capacities.

- Ensure IHR NFPs have a 24/7 system for communicating with WHO and other Member States, and are linked with the health system, border agencies and emergency contact points for International Food Safety Authorities Network (INFOSAN) and other hazard programmes, for example environmental health, chemical and radiation safety.

- Strengthen the IHR NFP role in information sharing through the use of the secure IHR Event Information Site and facilitate intercountry communications.

- Ensure participation of the IHR NFP in an annual regional exercise, for example IHR Exercise Crystal, to test standard operating procedures, roles and responsibilities, communications, and coordination links with national stakeholders and WHO.

Strengthen points of entry

- Continue to strengthen routine public health functions at POE at all times.

- Build IHR core capacity at designated POE, especially through POE contingency planning in the context of the overall national public health emergency response structure, and including access to appropriate medical services and referral health-care facilities.

- Establish and/or review interagency procedures and practices to mitigate the international spread of diseases at POE and other borders.

- Ensure public health emergency contingency plans at POE are regularly tested, and use border measures that employ a risk-based approach and that are in line with the principles and articles of IHR (2005).

- Strengthen regional and international partnership and collaboration on managing public health emergencies at POE.

3.2 Surveillance, Risk Assessment and Response (Focus Area 2)

3.2.1 Introduction

Surveillance, risk assessment and response are fundamental to minimize the health and social consequences of public health emergencies.

Risk assessment can be defined as the ongoing systematic process of organizing multiple sources of information within a risk management framework to determine a level of risk to guide decision-making. Risk assessment is crucial to ensure a proportionate response to a public health risk and to prioritize and mobilize resources. A risk assessment has two facets: (1) identification and characterization of threats; and (2) analysis and evaluation of vulnerabilities associated with susceptibility, exposure to those threats and coping capacities. Risk assessment, when combined with
other information such as event impact assessments, availability of response measures implemented and the effectiveness of those measures, provides intelligence to guide further response decisions and may also inform changes in information requirements as an input to further risk assessments. Risk assessments, while an essential link between event detection and response, are not performed systematically in all Member States and remain a priority area for improvement.

APSED (2010) prioritized the improvement of timely EBS systems, risk assessments, the effectiveness of RRTs and other aspects of outbreak investigation, including training national field epidemiologists. In the Asia Pacific region, Member States have made substantial progress in developing indicator-based surveillance (IBS), including syndromic surveillance, and have established EBS systems, along with developing skilled personnel through the Field Epidemiology Training Programme (FETP) and modified field epidemiology training (FET).

Lessons learnt from previous public health emergencies have emphasized the importance of health-care workers in detecting unusual clusters of disease. These lessons have highlighted the potential benefits that an EBS system for health-care workers could offer to the rapid and timely detection of emerging diseases and public health emergencies, such as human exposure to chemical and radiation hazards. The incorporation of the health-care worker in the surveillance system needs to be a priority for early detection of public health threats.

Moving forward, there is a need to combine surveillance data with other types of health information, as well as data from other sectors beyond health, in order to carry out a timely risk assessment to guide decision-making in consideration of the social determinants of health, and response. No single surveillance system or information source is suitable for all purposes, as each one varies in terms of objectives, timeliness, sensitivity, representativeness and completeness. Consistent information about a possible public health event from multiple sources increases the analyst's confidence that the signal is credible and requires further investigation. Other sources and types of information are needed to assess exposure and contextual vulnerabilities as part of the risk assessment and for decision-makers to formulate the objectives, nature, scale, timing and types of response needed. Risk monitoring and regular review of the effectiveness of response feedback into the risk assessment so that corrective actions can be taken in a timely fashion, if needed. Risk communication is an integral part of this process, contributing and generating information throughout the cycle.
Fig. 4 illustrates the cyclical nature of “information for action”, incorporating the use of multiple sources of information to generate risk assessments and inform decision-making for responses.

Fig. 4. Cycle of surveillance, risk assessment and response

In order to adapt to various public health emergency and response needs at different times during the course of the emergency, various information sources and surveillance methods may be needed over time.

Fig. 5 provides a schematic of how the relative importance of different information sources may change throughout the course of an acute public health event. The addition of new sources of information and/or scaling up of some activities to enhance surveillance can change the mix of sources used to inform decision-making during the course of an event. In Fig. 5, an alert signal is detected through existing (routine) surveillance activities. Once an event is detected, other sources of information may be needed to confirm and characterize the event. The exact mix of surveillance sources and methods used will depend on the type and complexity of the event, for example, when the aetiology is known compared to events of underdetermined cause. The information sources that are important in the post-event phase may be different from those that were used in the previous phases.
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Fig. 5. The relative importance of different information sources used for risk assessments during different phases of an event*

* The figure is intended to provide an example of information sources used during different phases of an event. The combination of information sources used by Member States should be adapted based on existing systems and feasibility to inform the next phase of the response.

3.2.2 Expected outcome

Member States are able to conduct systematic and ongoing risk assessments using multiple sources of information for timely, informed decision-making to guide preparedness and response.

The key elements of this focus area are:

- Surveillance is appropriate to Member States’ needs and is flexible, rapidly adapting to changing information and contextual needs before, during and after events.
- The surveillance and risk assessment function uses multiple sources of information from within the health sector and other sectors.
• Risk assessments lead to timely and informed decision-making to guide preparedness and response.

• An adaptable, skilled workforce, incorporating FETP/FET trainees and alumni and other technical expertise, carry out surveillance, risk assessment and response.

3.2.3 Strategic actions

Ensure the surveillance function is flexible, adaptable and appropriate to Member States’ needs

• Review existing surveillance systems and identify the sources of data, for example, data from outbreak investigations, community reporting systems, IBS (including syndromic surveillance), EBS, and the private health sector, which may be used at different phases of a public health emergency.

• Consider streamlining existing surveillance systems; for example, the national notifiable diseases list, to ensure the systems are an appropriate and efficient use of resources by prioritizing the diseases that require public health action.

• Facilitate involvement of affected communities, health-care workers and laboratories in EBS (refer to the Laboratories and the Prevention through Health Care focus areas).

• Ensure clinical and laboratory staff are alerted to cross-border public health threats, and that protocols including case definitions and laboratory testing algorithms, are rapidly developed and shared for timely case detection, reporting and investigation.

• Develop and implement systems to ensure that data can be safely stored, accessed, analysed and used to produce timely surveillance and/or epidemiological reports that are shared with key stakeholders on a regular basis e.g. monthly/ quarterly/annually).

Use multiple sources of information for risk assessment

• Identify different sources of health information that contribute to risk assessment; for example, data from IBS, EBS, risk perception assessments, vaccine coverage, laboratory data, community-based reporting and media monitoring.

• Establish reporting and communication channels between public and private health-care facilities and public health systems to facilitate rapid reporting of events by health-care workers to surveillance departments as part of EBS.

• Incorporate data produced by other disciplines and sectors, for example animal health data, socioeconomic data, gender, food safety data, access to health services, meteorological data and international connectivity data.

• Initiate a multisectoral policy dialogue to strengthen coordination, communication and information-sharing with other stakeholders.
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- Establish effective, real-time surveillance systems that have the capacity to analyse and link data using interoperable, interconnected electronic reporting systems.
- Ensure the information obtained in field investigations, including by RRTs, is used for risk assessments.

**Strengthen risk assessment function to inform timely decision-making**

- Review and agree on operational arrangements for the risk assessment function within a national centre/unit, and establish a process for systematic risk assessments.
- Conduct systematic risk assessments on an ongoing basis at all levels of the health system, involving multiple stakeholders to contribute, where appropriate, using the facilities and resources of an EOC or coordination centre.
- Produce and communicate timely risk assessment products to stakeholders, including affected communities.
- Conduct risk assessments that are forward-looking to anticipate future threats and contribute to better preparedness.
- Continuously review the risk assessment function through participation in activities such as “after-action reviews” and simulation exercises, as part of the monitoring and evaluation process (refer to the Monitoring and Evaluation focus area), and use these activities as a learning and training opportunity.

**Develop a skilled workforce for surveillance, risk assessment and response**

- Train public health workers in risk assessment, including at the local level to guide preliminary control measures.
- Improve the financial sustainability of FETP/FET.
- Create opportunities to involve FETP/FET trainees and alumni as human resources for risk assessment and response operations.
- Maintain capacity for multidisciplinary RRTs at the national level, and strengthen capacity at the subnational level, including documenting response to outbreak investigations. Members of an RRT may include experts in the following fields: logistics, human/animal epidemiology, clinical management, food safety, infection prevention and control, laboratory, and veterinary/wildlife, and security authorities.
- Create or strengthen systems to support field operations, including response logistics, information management, administration and finance, needed to rapidly mobilize response staff and maintain the supply chain of equipment and supplies.
- Promote operational and applied research to improve the evidence base for decision-making.
3.3 Laboratories (Focus Area 3)

3.3.1 Introduction

Laboratories play a key role in achieving health security, through contributions to disease surveillance and outbreak response, patient management, research and development, and informing policy. It is also a requirement under IHR (2005) for Member States to have laboratory diagnostic capacity for priority diseases and to implement biosafety and biosecurity practices. Most of this work takes place in public health laboratories, however, clinical diagnostic laboratories and laboratories that test for non-infectious hazards such as chemicals, toxins and radiological agents also have a role in public health.

Much progress has been made in the last 10 years under APSED (2005) and APSED (2010) with respect to strengthening public health laboratory systems. Most Member States now have national work plans for laboratory strengthening. The capacity of Member States to perform laboratory diagnosis for priority diseases and identify unknown pathogens has also improved. Moving forward, laboratory systems need to maintain fundamental functions and have the flexibility to adapt as new threats such as novel pathogens, uncommon or new patterns of AMR and environmental, chemical and radiological threats emerge. Functionality of public health laboratory system needs to be ensured through assessments and exercises. Laboratory data need to be routinely shared for surveillance and risk assessment. In turn, feedback on the use and value of these data needs to be provided to laboratories. Finally, new diagnostic technologies and tools provide opportunities for improving laboratory detection and characterization of EIDs and other public health threats.

3.3.2 Expected outcome

Public health laboratory system will be able to rapidly, accurately and safely identify infectious and non-infectious hazards in order to contribute to health security.

The key elements of this focus area are:

- Laboratories have the capacity to diagnose and report priority diseases in both laboratory and field settings (i.e. location of outbreak), as well as perform antimicrobial susceptibility testing.
- Data from laboratories are used routinely in surveillance and risk assessment.
- New diagnostic technologies are reviewed for their applicability in the local context.
- Ongoing internal and external assessments and exercises assess functionality, identify gaps and inform corrective actions.
- Laboratories are connected nationally, internationally and across sectors in a referral network.
3.3.3 Strategic actions

Ensure fundamental laboratory functions

- Strengthen and maintain the fundamental laboratory functions: specimen collection and transport; laboratory quality-management systems; biosafety and biosecurity programmes; functional networks; and data management for timely reporting of laboratory findings. These fundamentals will provide a foundation for laboratory detection and reporting of antimicrobial resistance.
- Ensure a trained and skilled laboratory workforce.
- Ensure sustainable financing of public health laboratory functions and support to field operations.
- Laboratory biosafety and biosecurity systems are in place to ensure that laboratory procedures are carried out in safe and secure environments.

Link public health laboratories with surveillance and risk assessment

- Support linkages of laboratories to surveillance and risk assessment functions, both for EBS and IBS. This includes data sharing related to vaccine-preventable diseases, AMR, zoonotic pathogens and unusual events (refer to the Surveillance, Risk Assessment and Response focus area).

Review new diagnostic technologies

- Establish a process for periodic review and evaluation of new diagnostic and pathogen characterization technologies for use in both laboratory and field settings, taking into consideration the country context.

Assess functionality of public health laboratory system

- Focus on functionality by testing the laboratory system, including internal and external quality assessment to maintain diagnostic accuracy and simulation exercises to test surge capacity during public health emergencies (refer to the Monitoring and Evaluation focus area).
- Work towards accreditation of public health laboratories.

Enhance public health laboratory connections and coordination

- Improve coordination and laboratory networking nationally and internationally among sectors such as animal health, environmental health, and food and water safety laboratories with a public health role such as those that test for chemical and radiological agents. This includes improving linkages with hospital and private clinical diagnostic laboratories and laboratories for chemistry, toxicology and radiological agents.
- Maintain arrangements with WHO collaborating centres and other international reference laboratories for testing and reference functions.
3.4 Zoonoses (Focus Area 4)

3.4.1 Introduction

Zoonoses (or zoonotic diseases) are diseases or infections that are naturally transmissible from animals to humans. Zoonoses are highly prevalent in the Asia Pacific region due to the complex social, cultural and economic interactions between human and animal populations and the environment. Consequently, zoonoses can significantly impact health, social and economic facets of everyday life. As a result, reducing the risk of zoonotic outbreaks should be prioritized by health systems at all levels.

The emergence of AMR among livestock is a serious global health threat impacting the ability to treat common infections in both animals and humans. There is a strong association between AMR and modern livestock rearing, with the overuse and misuse of antimicrobials in livestock considered to be important factors in the development of resistance in some pathogens that infect humans, or in the emergence of new AMR organisms.

Tackling the threat posed by zoonoses and AMR in livestock is complex and requires a multisectoral and multi-stakeholder approach involving effective communication, collaboration and coordination mechanisms among the human, livestock, wildlife and environment sectors, as well as affected communities and civil society organizations. Linking these actors is essential to improve risk reduction strategies that mitigate the emergence and spread of zoonotic diseases and AMR. In this regard, the Food and Agriculture Organization of the United Nations (FAO) and World Organization for Animal Health (OIE) are working in collaboration with WHO and partners to address health risks at the human–animal interface through the concept of One Health.

Under APSED, progress has been made with regard to tackling zoonoses, and most Member States now have coordination mechanisms in place, and improvements have occurred in the areas of outbreak detection and response, laboratory confirmation, and communication. Nevertheless, the unpredictable nature of zoonoses continues to present a significant threat as new microbial organisms emerge and re-emerge. Furthermore, Ebola virus disease and other outbreaks have demonstrated that cultural practices and community behaviour are critical elements when dealing with zoonoses. Responding to these ongoing challenges requires strengthening of the core components of public health systems: surveillance, risk assessment and response; laboratory capacity; PHEP; and risk communication. Additionally, there is a need to invest in policy development, preparedness planning, improved information sharing and communication with the public and continued emphasis of the importance of establishing and developing multisectoral and multi-stakeholder collaboration and coordination mechanisms, particularly with animal health and environmental health sectors.

3.4.2 Expected outcome

Member States adopt a multisectoral, multi-stakeholder approach to manage zoonotic diseases, mainly through:

- sharing of surveillance information with all relevant stakeholders
- coordinated response
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- risk reduction
- guidelines, policy documents and research.

3.4.3 Strategic actions

Sharing of surveillance information

- Encourage sharing of multisectoral and multi-stakeholder surveillance data and other information to provide early warning of emergent zoonoses for coordinated response (refer to the Surveillance, Risk Assessment and Response focus area).

- Improve risk assessment capacity through development of standardized procedures for joint regular evaluation of zoonotic events and response structured around EOCs and an incident management system.

Coordinated response

- Establish and/or maintain a systematic coordination, communication and information-sharing mechanism for emergency preparedness and response across sectors using the One Health approach, and ensure there is written authority and clarity of agency roles and responsibilities, through policies, legislation, interagency agreements or other means to mandate and guide preparedness and response (refer to Public Health Emergency Preparedness focus area).

- Invest in public health and animal health workforce development to maintain, share and improve knowledge and skills, and promote close collaboration at all levels.

- Evaluate the effectiveness of multisectoral coordination, communication and information-sharing at the animal–human–environment interface through joint training and simulation exercises at local, national and multinational levels to identify gaps and improve preparedness and response coordination (refer to the Monitoring and Evaluation focus area).

- Ensure multisectoral information exchange and joint participation in RRTs to investigate zoonotic disease outbreaks and public health events of concern. Where possible FETP/FET trainees and alumni should be included in such teams (refer to the Surveillance, Risk Assessment and Response focus area).

Risk reduction

- Develop national guidance for antimicrobial stewardship in human and animal health sectors to reduce AMR emergence and propagation.

- Establish long-term and sustainable risk-reduction strategies and procedures across sectors, including a focus on laboratory biosafety and biosecurity, food safety, AMR and risk communication.
• Maintain and improve coordinated communication channels across agencies and develop key messages for individual and community-level behavioural change in the prevention and control of zoonotic diseases, including people at occupational risk of zoonoses and the public.

• Evaluate the impact of health communication campaigns on the prevention and control of zoonotic diseases to improve future campaigns.

Guidelines, policy documents and research

• Conduct applied and operational research among human, animal and environment sectors and academic institutions, including the publication of joint risk assessments, after-action reviews and simulation exercises, and share findings in a timely manner.

• Engage in social and behavioural research on risk factors for zoonotic diseases, including gender and equity issues.

• Ensure development of evidence-based policies and guidelines for the control of zoonotic diseases and prevention of AMR.

3.5 Prevention through Health Care (Focus Area 5)

3.5.1 Introduction

A well-functioning health system is a prerequisite for preventing and responding to outbreaks and public health emergencies. The 2015 evaluation of APSED revealed a number of discrete areas of systemic vulnerability: inadequately trained health-care workers; fragile hospital surveillance and response systems; weak IPC systems; and health-care information systems and coordination mechanisms that require strengthening.

The results of the evaluation, coupled with lessons learnt from the amplification and spread of Ebola Virus Disease and MERS, indicated that the public health system alone could not effect change and that there was a need to adapt the approach and to invest efforts in strengthening critical health-care systems. This includes the components that prevent, detect and respond to emerging diseases, in order to reduce the possibility of future outbreaks and tackle the growing threat of AMR as a result of ensuring safe, quality care.

Establishing effective IPC practices in health-care settings is essential to reduce the risk of transmission of emerging diseases to health-care workers, patients, their families and the community. Systematic establishment of good IPC practices is a challenge, and there is room for significant improvement in many hospitals and other health-care facilities in the Asia Pacific region.

Good IPC practices are especially important in health-care settings both before and during outbreaks of diseases such as severe acute respiratory syndrome (SARS), Ebola Virus Disease and MERS, which may result in health facilities becoming epicentres for the spread of infection. In addition, infections in staff can critically affect delivery of health-care services and provision of surge capacity when it is most needed. There is a need to embed a culture of good IPC practice within health-care settings.
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Delivery of high-quality clinical care is critical to minimize morbidity and mortality. Although raising overall standards of clinical practice is beyond the scope of APSED, delivery of high-quality clinical case management for emerging diseases can be strengthened in some key areas.

It is critical that clinicians in all countries, including critical care specialists, are supported to rapidly identify and treat infectious disease cases in order to apply appropriate therapeutic and IPC measures. In addition, a vital need exists to ensure regional mechanisms are in place to facilitate sharing of information between clinicians on the features of emerging diseases, as well as diagnostic techniques and modalities of treatment. In some settings, clinicians may also need skills to diagnose exposures to toxic chemicals and radiation to manage these cases safely and effectively.

Health-care workers also play an important role in recognizing changes in known infectious diseases and in the initial detection of new EIDs; both situations require prompt reporting to public health authorities. Therefore, it is also important to establish strong links between health care and public health systems to facilitate rapid reporting of events by clinicians to public health authorities and to ensure that these authorities disseminate information about public health threats to the curative health-care system.

The overuse and misuse of antibiotics in households, communities, primary care and hospitals are major factors in generating antimicrobial-resistant organisms. Additionally, the use of antibiotics in the veterinary, animal husbandry, food and animal production and agriculture sectors has also been identified as a possible source of antibiotic-resistant bacteria that may affect human populations. Poor infection control creates opportunities for AMR transmission among patients and clinical staff. Prevention of health-care acquired infections should be promoted and monitored through hospital infection control committees responsible for antibiotic stewardship and monitoring the occurrence of infections associated with health care. Disease clusters and the emergence of antimicrobial-resistant organisms in health facilities should also be systematically investigated.

Building on experience and work carried out over the past 10 years, and with a view to further develop prevention approaches in the Asia Pacific region, this focus area emphasizes actions that will strengthen the effectiveness and safety of health-care systems during routine practice and improve their operations and resilience during public health emergencies. They include planning for surge capacity needs, prioritization of treatment, supply of consumables, and strengthening of clinical management and IPC. This focus area draws on a whole-of-government approach to address the complex issues related to prevention in health care. Individual facility plans should also be coordinated with the preparedness and response plans of other health-care facilities in the same area in order to use resources in the most efficient way during a large-scale public health event.
3.5.2 Expected outcome

Health-care settings are able to provide critical services for prevention, treatment, containment and response in order to reduce the risk and mitigate the impact of outbreaks and public health emergencies.

Key elements of this focus area are that health-care facilities have:

- Relevant infrastructure and evidence-based policies and operational procedures in place to underpin effective IPC practice to reduce the risk of transmission of emerging diseases within the health care setting.
- The ability to rapidly identify, report and manage EIDs in a way that minimizes mortality and morbidity among patients, visitors, health-care workers and the community.
- The appropriate infrastructure, policies and procedures to reduce the morbidity and mortality associated with antimicrobial resistance.
- Comprehensive health facility plans for preparing and responding to outbreaks and public health emergencies.

3.5.3 Strategic actions

Infection prevention and control

- Establish and/or strengthen organizational structure of national IPC/health-care associated infection (HCAI) programmes to ensure that IPC is an integral part of health-care system, and seen as a routine activity by health-care workers.
- Develop and implement evidence-based IPC policies in all health-care settings.
- Strengthen routine IPC practices in all health-care settings as part of health system strengthening prior to outbreaks and public health emergencies through clinical audits, critical incident reporting, and the training and development of dedicated IPC staff.
- Establish mechanisms to ensure the timely supply and availability of PPE, vaccines, drugs and other materials to ensure the safety and well-being of health-care workers, patients and visitors and the broader community at all levels of the health-care system.
- Develop and enhance mechanism for mobilizing IPC experts, as members of RRTs, for public health emergency response nationally or internationally.
- Conduct rapid investigations of disease clusters, HCAI and AMR in health-care facilities.
- Develop and strengthen surveillance and reporting on HCAI.

Clinical management

- Establish strong links between POE, public and private health-care facilities and public health systems to facilitate rapid reporting of events by health-care workers to surveillance departments as part of EBS.
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- Ensure that public health authorities are able to disseminate important information regarding outbreaks and public health emergencies in a timely manner to clinicians and other individuals within the health-care system.

- Ensure mechanisms are in place to facilitate communication and sharing of information among clinicians on the features of emerging diseases and public health hazards, appropriate IPC measures, and diagnostic techniques and modalities of treatment.

- Develop and enhance mechanisms to rapidly mobilize clinical experts to support response to outbreaks and public health emergencies nationally and internationally.

- Strengthen routine clinical management practices for priority infectious diseases in all health-care settings as part of health system strengthening prior to outbreaks and public health emergencies through training.

- Coordinate with health systems to ensure that there are sufficient and appropriately trained and certified doctors, nurses and other health-care workers.

**Antimicrobial resistance**

- Develop and implement AMR national action plans in line with regional action plans and coordinated with health systems.

- Establish AMR surveillance in public health-care facilities and, where possible, in the private sector.

- Improve access to, and use of, AMR surveillance data, including alerts on the identification of newly emerging resistance patterns among humans and animals.

- Strengthen laboratory capacity to conduct antimicrobial sensitivity testing and timely reporting of priority AMR pathogens as part of EBS (refer to the Laboratories focus area).

- Establish infrastructure, policies and procedures, as part of health systems strengthening, to support compliance with national AMR guidance and best practices in antimicrobial stewardship.

- Develop and improve, as part of health systems strengthening, professional training and the education of the public and private health sector, as well as community engagement materials, to increase understanding of the adverse impacts and ways of preventing AMR.

- Support regional and international efforts to reduce the impact of AMR on individuals and communities by maintaining and strengthening the focus on tuberculosis, malaria and other AMR organisms.
Preparedness of health facilities

- Develop national guidance and training materials on health-care facility safety, and preparedness and response planning, including referral pathways, isolation facilities, access to stockpiles and business continuity plans.

- Ensure health-care worker safety through vaccination, access to post-exposure prophylaxis where appropriate, training in and monitoring of implementation of IPC and biosafety procedures, access to an adequate and appropriate supply of PPE, and health-care facility engineering to prevent and contain public health emergencies within the health-care setting, including those due to chemical or radiological hazards.

- Ensure facilities have appropriate emergency preparedness plans in place, utilizing business continuity planning and safe hospitals guidance to reduce the vulnerability of health facilities and mitigate the social, political and economic costs arising from the interruption or total loss of essential health services.

- Strengthen national coordination and management of health-care delivery during outbreaks and public health emergencies to address surge capacity requirements and ensure safe, efficient and accessible health services.

- Implement continuous quality improvement in all health-care facilities as part of national health systems strengthening.

- Test, evaluate and revise health-care facility PHEP and response plans, at all levels on a regular basis.

- Ensure that as part of health systems strengthening that all health facilities have in place infrastructure, policies and procedures for safe water supply, sanitation and clinical waste management.

3.6 Risk Communication (Focus Area 6)

3.6.1 Introduction

Risk communication covers a broad range of communication capacities necessary to enable individuals and communities to make informed decisions, undertake positive behaviour change and maintain trust in health authorities.

APSED focuses on enhancing capacities on three interlinked functional areas: 1) health emergency communication; 2) operational communication; and 3) behavior-change communication (see Glossary). Risk communication and reciprocal community engagement are critical in managing public health emergencies, especially in the early stages when decisive action needs to be taken to save lives and mitigate risks in the midst of uncertainty. Risk communication activities are also used to address the psychosocial dimensions of outbreaks and public health emergencies to counter threats to public safety that may arise as a result of fear, misconception and stigmatization. Vulnerable populations, such as people living in poverty, older people, youth, women, and people living with disabilities or
mental health needs, may benefit from tailored communications as outbreaks and public health emergencies can have a greater impact on their well-being than the general population.

Risk communication is one of the core capacity requirements mandated under IHR (2005). Since APSED (2005), Member States have established mechanisms and trained key personnel for risk communication. The plans, guidelines and procedures developed for risk communication have been put into practice during the response to human infection with avian influenza A(H7N9), dengue, MERS, Zika and natural hazards such as floods, cyclones and typhoons. Member States have also consistently developed, and released on a timely basis, information and communication materials tailored to the needs of the local population. However, challenges remain in coordinating risk communication messages and activities with other sectors.

The 2015 APSED evaluation demonstrated that the capacity for risk communication across Member States is variable. Challenges remain in establishing risk communication as a core function of risk assessment and risk management processes. There is also a need for greater emphasis on providing evidence of the effectiveness of communication activities, both for the development of public information and for monitoring its impact. Increased access to new information and communications media, such as social media and networks, poses new challenges for risk communication in terms of skills and resources. Conversely, social media can be a useful tool for health risk communication and to monitor risk perception and the effectiveness of risk communication.

The availability of trained personnel for risk communication within the Asia Pacific region also needs to be further enhanced.

3.6.2 Expected outcome

A risk communication system is established with the capacity to manage the process of risk communication for all phases of public health emergencies.

The key elements for this focus area are:

- Make risk communication a core element of prevention, public health preparedness, response and recovery from public health emergencies.
- Strengthen operational links between risk communication, surveillance and risk assessment across all sectors and incorporate risk communication in all phases of the risk management cycle.
- Establish a mechanism to engage with all groups within communities and integrate risk perception assessment into risk assessment procedures.
- The use of new information and communication media, including social media and networks where access is widely available, is an integral component of capacity enhancement for risk communication.
- There is a system that routinely evaluates the effectiveness of risk communication and community engagement approaches as soon as possible following the intervention.
3.6.3 Strategic actions

**Make risk communication a core element of prevention, preparedness, response and recovery**

- Embed the risk communication function in preparedness plans and response systems.
- Conduct stakeholder analyses for targeted risk communication, identify opinion leaders and the most appropriate communication media for public communications.
- Maintain and strengthen the basic elements of the risk communication system such as developing risk communication plans, procedures and templates for key messages, identifying spokespersons, appointing an officer and/or team to manage activities including media communication training for spokespersons, reaching agreement on the standard operating procedures and providing resources for risk communication.
- Ensure synchronization of key risk communication messages across response sectors.
- Develop and maintain a registry of risk communication officers through the implementation of a regional risk communication training programme (refer to the Regional Preparedness, Alert and Response focus area).
- Develop and implement strategies to protect infected and affected individuals and communities, as well as health-care workers, from stigmatization following exposure or potential exposure to public health hazards.

**Strengthen operational links between risk communication, surveillance and risk assessment**

- An operational arrangement is in place to coordinate risk communication with surveillance and risk assessment (refer to the Surveillance, Risk Assessment and Response focus area).

**Establish a mechanism to engage with communities and integrate risk perception assessment into risk assessment and risk management procedures**

- Establish a culture of routine reciprocal engagement with the public, partners, civil society, security authorities, media and others to build trust in advance of health emergency communications.
- Develop or adapt guidance for community engagement and the assessment of risk perception to inform risk assessment and guide interventions.
- Implement a system that routinely (and near real-time, where possible) assesses the effectiveness of risk communication and community engagement approaches, incorporating considerations for gender, equity and access (refer to the Monitoring and Evaluation focus area) to help inform risk assessment and guide interventions.
Enhance use of new media, including social media and social networks, for risk communication

- Develop guidance for use of new media in risk communication.
- Implement interactive risk communication approaches including the use of social media, social networks and community engagement approaches that reach all members of the population including the most vulnerable.

Formalize a mechanism that routinely assesses the effectiveness of risk communication

- Assess the effectiveness of risk communication and community engagement.
- Facilitate a mechanism to share lessons and experience in risk communication as part of after-action reviews (refer to the Monitoring and Evaluation focus area).
- Conduct simulation exercises to test national arrangements and systems for risk communication.

3.7 Regional Preparedness, Alert and Response (Focus Area 7)

3.7.1 Introduction

In an interconnected world, EIDs and public health emergencies can rapidly move beyond national borders highlighting the importance of regional preparedness, alert and response. WHO is mandated under IHR (2005) to strengthen the global and regional systems and capacities in detecting, assessing and responding to all acute public health events and emergencies, especially with regards to the potential for international disease spread.

The focus of regional preparedness, alert and response within APSED (2010) was on strengthening existing systems for surveillance, risk assessment, information sharing, preparedness and response at the regional level. WHO supports Member States to prepare for and respond to public health emergencies by sharing risk and operational communications and facilitating access to suitably trained and experienced personnel for rapid deployment.

At the regional level, with the collective efforts by Member States, regional EBS and IBS have been developed and implemented to detect public health emergencies and gather the information for risk assessment.

Regional preparedness and response provides or facilitates support to Member States at any time during emerging disease outbreaks or public health emergencies. A regional rapid response mechanism is a resource to enhance regional emergency response capacity and strengthen its ability to respond to health security threats regionally and internationally. This may involve working with partners for event management and coordinated action, mobilization of emergency medical teams and response logistics, such as accessing stockpiles and mobilizing resources.

WHO country offices, as the first point of contact with many Member States, can draw on regional and global rapid response mechanisms such as the Global Outbreak Alert and Response Network (GOARN). In recognition of the greater capacity in alert and response within the Asia Pacific region,
GOARN is reviewing its membership and areas of technical expertise in order to accommodate the evolving public health security environment and changing needs of Member States.

Additionally there are forums within the Asia Pacific region with health streams that contribute to regional health security, including the Association of Southeast Asian Nations, South Asian Association for Regional Cooperation, Asia Pacific Economic Cooperation, East Asia Summit, Pacific Islands Forum and others. WHO supports Member States in mobilizing resources from these forums to implement health security initiatives.

A skilled workforce is critical to ensuring that WHO continues to play a leadership role in the provision of high-quality operational support and technical advice. One technical area requiring further investment is that of risk assessment. There is need to develop tools to guide and embed a systematic approach to risk assessments at the national level. WHO leadership in this area is important for the development of new guidance, tools and training in risk assessment.

Regional preparedness, alert and response in APSED III will contribute to global preparedness, alert and response and align with the new WHO Health Emergencies Programme that was established in 2016.

### 3.7.2 Expected outcome

The Regional system serves as an operational hub to effectively manage and mitigate the risks and impacts associated with disease outbreaks and public health emergencies.

The key elements of this focus area are:

- A regional risk assessment system that can use multiple sources of information for decision-making for response.
- A regional operational hub for preparedness planning and coordinated response to public health events and emergencies.
- A regional rapid response mechanism that can be used to deploy experts and teams at short notice.
- An information sharing platform that utilizes innovative technology to enhance knowledge development, exchange and transfer.
- A regional learning hub to develop a skilled workforce through on-the-job training and learning by doing.

### 3.7.3 Strategic actions

**Regional risk assessment system**

- Develop and disseminate generic SOPs and protocols for risk assessment.
- Use multiple information sources at the regional level, including EBS, IBS and non-health sector information sources, to conduct and share rapid risk assessments for timely decision-making and action for all hazards.
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- Conduct regional surveillance, risk assessment and response as part of the global system for public health events.

**Regional operational hub for coordinated planning and response**

- Use the regional EOC to facilitate collective preparedness planning and simulation exercises.
- Coordinate logistics preparedness planning including stockpile of drugs, vaccines, PPE and other response equipment and supplies.
- Support application of IMS principles for coordinated response and establish links between the regional EOCs and the WHO headquarters EOC, Member State EOCs and other EOCs.
- Promote the use of joint missions between WHO and Member States during responses to outbreaks and public health emergencies to support development of national capacity and capabilities.
- Support national governments to collaborate actively with each other, including providing surge capacity in public health emergencies and technical cooperation with resource-poor countries.

**Regional rapid response mechanism**

- Maintain Country and Regional Office surge capacity in line with WHO's roles and responsibilities in outbreaks and public health emergencies.
- Develop and maintain a register of experts, including FETP fellows and alumni, available for rapid regional and global deployment in response to disease outbreaks and public health emergencies.
- Establish a regional rapid response mechanism to support the deployment of experts and teams at short notice regionally and globally to assist rapid investigation and response to public health threats.
- Engage, maintain and expand existing technical and operational networks, for example GOARN, clinical and laboratory networks, emergency medical teams, nongovernmental organizations and WHO collaborating centers, and establish functional partnerships or networks when required to strengthen preparedness and rapid response efforts.
- Evaluate achievements of rapid response mechanisms for public health emergency management.

**Information sharing utilizing innovative technology**

- Improve access to evidence-based guidelines, surveillance data, results of risk assessments, M&E reports and other information products for Member States through an approach that utilizes available and innovative technology.
- Contribute to the public health evidence-base through applied and operational research that can play a critical role in influencing policy and practice at all levels.
• Promote sharing of information on surveillance of, and response to, public health emergencies in the Asia Pacific region through timely publication, for example on the regional websites, or in the WHO Western Pacific Surveillance and Response Journal or the WHO South-East Asia Journal of Public Health.

Regional Office as a learning hub to develop a skilled workforce

• Further strengthen workforce development through opportunities for FETP/FET trainees/alumni and others, for example through placement within the WHO country and regional offices or through deployment for public health emergencies (refer to the Surveillance, Risk Assessment and Response focus area).

• Develop training programmes and exercises for public health emergency management, including incident management, risk assessment, response logistics, risk communication and partner coordination.

3.8 Monitoring and Evaluation (Focus Area 8)

3.8.1 Introduction

M&E is a management tool that assesses what has taken place to facilitate continuous learning and improve future work. Robust, integrated M&E systems support the overall objectives of APSED and the achievement of specific improvements. This applies not only to the public health system but also to the overall health system. In the context of APSED, M&E functions as an ongoing process of planning and review that helps to coordinate key stakeholders, promote transparent reflection on progress, and enhance ongoing priority setting, which is important in an environment of scarce resources. Under previous versions of APSED, M&E was aligned with IHR Core Capacity Monitoring Framework and incorporated the IHR Monitoring Questionnaire.

In the past decade, many Member States have made solid progress in the adoption of national planning, monitoring and evaluation systems. Assessments of real-world functionality, including outbreak reviews and WHO-led simulation exercises such as the Western Pacific Region’s “IHR Exercise Crystal” have been useful. National and regional planning and review processes including annual TAG meetings have provided a simple and practical mechanism for collective process monitoring and learning for continuous improvement.

Moving forward, M&E will place greater emphasis on measuring how well national public health capacities are functioning while taking into consideration relevant aspects of gender, equity and human rights. The guiding principles and mechanisms of M&E developed for APSED (2010) have contributed to the development of a global post-2016 IHR Monitoring and Evaluation Framework comprising four components: annual reporting; after-action review; simulation exercises; and JEE (Fig. 6). Under APSED III annual reporting entails self-reporting by Member States to the World Health Assembly, regional reporting through APSED progress reports, and annual APSED TAG meetings to provide feedback on progress to Member States and partners. After-action reviews include programmatic outbreak reviews to measure the functionality of Member State capacities and may also include review of regional responses to outbreaks and public health emergencies. In the absence of
outbreaks or public health emergencies for review, Member States and WHO conduct exercises to test response processes under simulated conditions, thereby identifying areas for improvement. Evaluations of IHR capacities will be jointly conducted by teams of internal and external experts to promote transparency and accountability. The JEE tool has been developed by WHO and partners who will support Member States in its implementation. The JEE process provides a mechanism to overcome the challenges associated with multisectoral coordination.

The APSED III monitoring and evaluation framework builds on the IHR monitoring framework and recognizes existing national and regional indicators. APSED III M&E is targeted at national and Asia Pacific regional systems for collective learning for continuous improvement. Member States should continue to lead M&E and engage sectors beyond health in planning, implementation and monitoring.

Fig. 6. Components of the monitoring and evaluation cycle as a model for learning for continuous improvement

3.8.2 Expected outcome

M&E systems are incorporated in national work plans to measure health system functionality, promote system improvement and ensure mutual accountability for health security.
The key elements for this focus area are:

- Integrated national and regional planning and review processes are strengthened and lead to learning for continuous system improvements at all levels.
- M&E processes measure whether systems are working, not just whether capacities are in place.
- Partnership is promoted through M&E processes that include stakeholders from multiple sectors.
- Transparency and accountability in reporting on Member State capacities is fostered through annual reporting, after-action reviews, exercises and JEE.

### 3.8.3 Strategic actions

**Apply M&E systematically at all stages of the planning and implementation cycle**

- Establish and/or maintain a national focal point to ensure all IHR, APSED and M&E activities are aligned and followed up (refer to the PHEP focus area).
- Develop multi-year work plans that take into consideration recommendations from JEE reports and include funding for M&E activities that are in line with APSED III.
- Establish or strengthen an annual review and planning process that incorporates findings from after-action reviews, simulation exercises and joint external evaluations.
- Ensure that the APSED III M&E framework builds on the IHR monitoring framework and recognizes existing national and regional indicators.

**Measure system functionality**

- Use both quantitative and qualitative M&E methods that measure system functionality, including joint evaluation exercises, after-action reviews and exercises.
- Incorporate the lessons learnt from M&E processes for corrective actions and provide feedback to stakeholders.

**Promote partnership through M&E processes**

- Engage implementing partners and stakeholders from sectors beyond human health in national planning and review processes, and ensure that M&E addresses relevant aspects of gender, equity and human rights.
- Maintain and enhance the M&E function of the TAG meeting to become a more robust annual monitoring mechanism.

**Improve transparency and accountability in reporting**

- Complement annual self-assessment and reporting with after-action reviews, exercises and a JEE by national and international independent experts.
- Contribute to peer-review processes in other Member States.
- Share results of exercises, outbreak reviews, assessments and evaluations with stakeholders.
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4. APSED in the Pacific

4.1 Introduction

The Pacific includes 21 countries and areas\(^1\) spread across a vast expanse of ocean with an extremely diverse population in terms of ethnicity, culture, economy and health. Pacific island countries and areas face a very high degree of disaster risk from extreme weather, coastal erosion and inundation, floods, droughts, volcanoes, earthquakes and tsunamis, some of which are predicted to increase in the future as a result of climate change. Recurring cyclones and flooding events raise the risk of climate-sensitive and water-related diseases, including vector-borne diseases and foodborne and waterborne diseases such as typhoid fever and leptospirosis. Vulnerability to the health impacts of the El Niño climate cycle (drought and rainfall extremes in different parts of the Pacific at the same time) also contributes to increasing complexity of achieving health security and building resilient health systems in the Pacific.

Healthy Islands, an ideal envisioned in 1995 at the first meeting of the Ministers of Health for the Pacific Island Countries on Yanuca Island, Fiji, is the unifying theme for health security and health promotion in the Pacific, with IHR (2005) core capacity implementation the key driver in achieving health security goals. Pacific Member States have made good progress in emergency preparedness, surveillance, national RRTs, laboratory capacity, risk communication and information sharing with other Pacific island countries and areas along with regional partners such as the Pacific Community (SPC), but many challenges remain. Small population size, geographic isolation, and limited human and financial resources make achieving and sustaining some of the IHR core capacities without support from technical and development partners extremely challenging for some Pacific nations.

The Pacific island countries and areas face unique health system challenges such as logistic issues, disparities in service delivery and poor infrastructure, among others. High staff turnover and out-migration of skilled staff contribute to a sustained shortage of human resources with expertise in emerging diseases and public health emergencies. There is an ongoing need to identify innovative solutions to retain and maintain in-country expertise once health staff members have been trained in critical emergency preparedness and response functions.

The Pacific IHR Meeting is convened biennially and serves as a forum to monitor progress in IHR implementation and provide technical advice on priority actions in the future. At the 2014, Pacific IHR Meeting, participants from 20 of the 21 Pacific island countries and areas reaffirmed the need to enhance national and regional health security preparedness based on IHR/APSED implementation. As a key outcome of the meeting, Pacific island countries and development partners agreed to work collaboratively to strengthen the Pacific Syndromic Surveillance System, including enhancement of the EBS component of the system and to continue to develop, test and refine national PHEP and response plans.

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\(^1\)American Samoa, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, the Marshall Islands, the Federated States of Micronesia, Nauru, New Caledonia, Niue, the Commonwealth of the Northern Mariana Islands, Palau, the Pitcairn Islands, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, and Wallis and Futuna.
4.2 Expected outcome
All Pacific island countries and areas will have in place the core public health capacities and capabilities necessary to detect, assess and respond to their common epidemic-prone diseases, and arrangements with regional response partners for early technical assistance and surge capacity in the event of a cross-border threat or disaster.

4.3 Pacific priorities
Pacific island countries and areas are at increased risk of cross-border disease threats with significant impacts. In addition, there are major risks to health and human security in the region due to natural hazards and the effects of climate change.

Thus, suggested priorities for the Pacific within the APSED III focus areas include:

- Continue human resource development across all core public health functions and fill critical gaps in Pacific regional resources in risk assessment, data management including geographical information systems, medical entomology, response logistics and supply chain management, risk communication, and M&E.
- Link vulnerability assessments to PHEP and response planning and hospital contingency planning.
- Enhance links between public health professionals, clinical staff and laboratories, recognizing the importance of clinicians in EBS.
- Further strengthen coordination, communication and information-sharing mechanisms among public health services, clinical services, laboratories, risk communication and other sectors, including disaster risk management offices, vector control, food safety, animal health, environmental health, education, tourism, and air and sea port authorities.
- Ensure multisectoral coordination, communication and information-sharing mechanisms are in place before an emergency and test through joint exercises.
- Explore innovative information and communication technologies and diagnostic tools to support disease surveillance, field operations and laboratory diagnosis, including online, mobile and desktop equipment and applications to establish and manage surveillance and response in hard-to-reach areas, as well as field-usable test kits for the diagnosis of pathogens endemic to the Pacific. Remote-control drone technology has also proved useful for mapping areas affected by disasters and, identifying resources needed to respond to the needs of such affected areas.
- Continue to build IHR core capacities at POE and in the areas of food and chemical safety, AMR and IPC. All Pacific island countries and areas should determine their local radiation hazards, for example, from medical imaging.
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4.4 Pacific approach

Pacific regional priorities for IHR (2005) implementation and sustainability are guided by the biennial meeting of the Pacific IHR NFPs. Pacific Member State consultations have recommended that APSED III be adopted as the road map to meet and continue to enhance IHR core capacities.

Implementing APSED in the Pacific must account for the fact that in many Pacific island countries and areas, the same workforce is responsible for preparedness, prevention, response and recovery planning and for the management of outbreaks and the health consequences of disasters. Notably the Pacific Public Health Surveillance Network is the regional structure for the partnerships needed to implement APSED III in the Pacific region.

Specific approaches for the Pacific include:

Aligning APSED III focus areas with national health security priorities

- Prioritize highly vulnerable, low-resource Pacific Island countries with a focus on enhancing the core public health functions for early warning, incident management and risk communication.
- Continue the stepwise approach to the implementation of APSED III focus areas in the Pacific based on local context and national health security priorities.

Addressing human resource development as a priority

- Build human resource capacity through distance learning, for example through the Pacific Open Learning Health Net, in-service training and exercises, post-graduate training including FET/FETP, and long-term on-site coaching and mentoring to consolidate new learning.
- Develop and maintain in-country expertise in the critical emergency preparedness and response functions of risk assessment, incident management, risk communication and response logistics.

Exploring Pacific regional approaches to share resources

- Ensure partner coordination within the Pacific to ensure that scarce technical and material resources are available to all Pacific island countries and areas and improve efficiencies from joint planning and budget setting between development partners and countries. In addition to WHO, key implementation partners in the Pacific includes SPC, the United States Centers for Disease Control and Prevention, and the Pacific Island Health Officers’ Association.
- Explore opportunities to further strengthen Pacific regional networks and collective learning through joint simulation exercises, thematic planning processes to address common threats, for example arboviral diseases, and access to economies of scale through collective purchasing of health security equipment and supplies.
**Ensure testing of systems consider the context**

- Conduct after-action reviews or simulation exercises that test the readiness of the national surveillance and response system as a whole to respond to outbreaks and other acute public health events.
- Conduct specific exercises to test logistics in the Pacific context.

**Enhance Pacific island regional coordination and support**

- Further enhance public health emergency coordination and support in the Pacific through improved:
  - multisectoral and multilateral coordination, including a common understanding of IMS, and strengthening of the common response functions such as information management, supply chain management and response logistics, resource mobilization and administration;
  - technical assistance, including arrangements with international laboratories, specimen referral logistics and support for diagnostic capacity where appropriate; and
  - donor coordination to ensure rapid resource mobilization.

**APSED III monitoring and evaluation linked to existing monitoring frameworks**

- Align APSED III M&E framework with IHR (2005), national and Pacific regional indicators for Healthy Islands, and the SDGs.

**5. Connecting with other strategies and initiatives**

APSED III has been developed with a focus on the fundamental components for emerging diseases and public health emergencies, which are covered in the eight focus areas. As described in Focus Area 1, there are a number of other strategies and initiatives that provide a broader context for APSED and health security and contribute to overall “system readiness”.

This section provides a brief description of the wider context around APSED along with some examples and links to documents that relate to these. This wider context includes more hazard-specific guidance, including those categories shown in Fig. 7 in the first (inner) blue circle. Sitting alongside the overall APSED framework, they help provide an all-hazards approach that is consistent with IHR (2005).

There are also wider goals to which APSED contributes such as UHC and the SDGs. With regard to UHC and the SDGs, the role of APSED is to assist with health system strengthening and to help progress social and economic development respectively.
5.1 Specific hazards

APSED III provides an overarching generic framework for PHEP and health security that can be applied to all hazards. There are specific manuals, frameworks and initiatives that address many of these hazards in more detail.

5.1.1 Biological hazards

Antimicrobial resistance

All APSED III focus areas strengthen the fundamental components that can be applied to all hazards including AMR. Focus Area 2 (Surveillance, Risk Assessment and Response) supports building capacity for surveillance, including AMR. Focus Area 3 (Laboratories) aims to build a generic foundation for laboratories that can be further developed for detection of AMR and related data sharing. Focus Area 5 (Prevention through Health Care) addresses elements of health-care services, including IPC programmes and antimicrobial stewardship that address the spread and generation of

* This includes geological and hydro-meteorological hazards
AMR. APSED III contributes to the goals and objectives of the Global Action Plan on Antimicrobial Resistance and regional frameworks such as Regional Strategy on Prevention and Containment of Antimicrobial Resistance 2010–2015 in the South-East Asia Region and Action Agenda for Antimicrobial Resistance in the Western Pacific Region.

**Bioterrorism**

Bioterrorism is the intentional release of infectious or non-infectious agents that cause harm. Bioterrorism events are a continuing and unpredictable threat to global health security. Any bioterrorism event would require the health sector to work closely with law enforcement and security authorities. This collaboration and coordination is addressed in APSED III, Focus Area 1: Public Health Emergency Preparedness, which supports the establishment or maintenance of a cross-sector, cross-agency platform for coordinating PHEP and response.

**Food and water safety**

While threats to food and water safety may be caused by various hazards including chemical, biological and radiological hazards, APSED III contributes to the Western Pacific Regional Food Safety Strategy 2011–2015 and the Regional Food Safety Strategy in the South-East Asia Region by increasing the capacity of Member States to detect, assess, report and manage foodborne diseases and food safety emergencies, in coordination with the food safety sector. IHR NFPs collaborate with their International Food Safety Authorities Network (INFOSAN) emergency contact points on food safety events that fall under IHR (2005).

**The Global Health Security Agenda (GHSA)**

GHSA was launched in February 2014 as an effort to accelerate implementation of IHR (2005). It is a broad, multilateral initiative that emphasizes the importance of effective prevention, detection and response to mainly infectious disease outbreaks and the need for collaboration among different sectors, including health, security, agriculture and the environment. However, several of the IHR core components are not covered or only partially covered by GHSA, including POE and risk communication, food safety, and chemical and radiological hazards.

APSED III serves as a regional framework for meeting IHR core capacity requirements. It adopts a generic system strengthening approach towards managing all hazards. The APSED III focus areas and the GHSA action packages are largely consistent. National plans of action that are developed in line with APSED III serve as country-level frameworks for priority actions to coordinate various initiatives and projects.

**Pandemic Influenza Preparedness Framework**

The Pandemic Influenza Preparedness Framework (PIP), which took effect in May 2011, brings together Member States, industry, other stakeholders and WHO to implement a global approach to pandemic influenza preparedness and response. The objective of PIP framework is to improve pandemic influenza preparedness and response and to strengthen protection against pandemic influenza by improving and strengthening WHO Global Influenza Surveillance and Response System, with the key goals of:
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- improving and strengthening the sharing of influenza viruses with human pandemic potential; and
- increasing the access of developing countries to vaccines and other pandemic-related supplies.

APSED III contributes to achieving the goals of the PIP framework through all of its focus areas, in particular public health preparedness, surveillance, risk assessment and response, laboratories strengthening and laboratory networks, and monitoring and evaluation.

Vaccine-preventable diseases

APSED III is aligned with the *Regional Framework for Implementation of the Global Vaccine Action Plan in the Western Pacific*, and it will contribute to achieving regional and global goal of control and elimination of vaccine-preventable diseases by increasing the preparedness and capacity of Member States to detect, assess, report and manage outbreaks associated with vaccine-preventable diseases, such as circulating vaccine-derived poliovirus, measles and diphtheria.

APSED III will strengthen Member State and regional capacity for coordination of surveillance, laboratory capacity for diagnosis, public health workforce capacity to respond and investigate outbreaks, and risk communication. APSED also supports coordination of outbreak response through the use of an EOC that can provide logistics support particularly in relation to deployment of staff and items from stockpiles such as vaccines, logistic materials and medical supplies.

Arboviral diseases

APSED III is aligned with the strategic objectives of the draft *Regional Action Plan for Dengue Prevention and Control 2016 and Beyond*. It will contribute to increasing the preparedness and capacity of Member States to detect, assess, report and manage outbreaks associated with dengue, and other arboviruses such as Chikungunya virus, Japanese encephalitis virus, Ross river virus, Yellow fever virus and Zika virus. APSED III will strengthen the capacity of Member States and regional capacity for surveillance and multisource information for evidence-based decision-making, laboratory capacity for diagnosis and risk communication. APSED III also supports coordination of outbreak response through the use of an EOC that can provide logistics support, particularly in relation to rapid response to outbreaks, deployment of staff and items from stockpiles.

5.1.2 Chemical, radionuclear and environmental hazards

All APSED III focus areas strengthen the fundamental components that can be applied to public health preparedness for and response to environmental, chemical and radiological events. In particular, Focus Area 1 (Public Health Emergency Preparedness) supports the establishment or maintenance of a broad cross-sector, cross-agency platform for coordinating preparedness and response across a wide range of public health issues. Likewise, Focus Area 2 (Surveillance, Risk Assessment and Response) supports flexible and generic surveillance and risk assessment systems. Focus Area 3 (Laboratories) supports establishing links to laboratories with testing capability for non-EID hazards.
APSED III also contributes to the draft *Western Pacific Regional Framework for Action on Health and Environment on a Changing Planet* that calls for, among other issues, stronger leadership by the health sector to advocate adaptive measures, policies and action to protect health and well-being from environmental threats and emergencies.

### 5.1.3 Natural Hazards

Globally, the *Sendai Framework for Disaster Risk Reduction* provides a mechanism for country-led multisectoral response to health crisis, including public health emergencies, and specifically calls for enhancing the resilience of national health systems as well as full implementation of IHR (2005). While the scope of the Sendai Framework is comprehensive, APSED III goals and strategic actions are consistent with the guiding principles and actions of the Sendai Framework, including use of EOCs to better respond to public health emergencies and disasters by improving effectiveness of coordination and strengthening surveillance to provide near real-time health information to inform risk assessment and response, as well as multisectoral coordination.

At the regional level, APSED III aligns with the *Western Pacific Regional Framework for Action for Disaster Risk Management for Health*, specifically in regards to the development and revision of relevant national PHEP and response plans, multisectoral risk assessments and risk communication. The generic system developed through APSED, including an EOC in the ministry of health, risk communication and post-disaster surveillance, will be used for disaster risk management including disaster response. When disease outbreaks escalate towards large-scale public health emergencies, the disaster management system can be utilized to facilitate coordinated response.

### 5.2 APSED embedded within the broader context of health systems

APSED III works towards a resilient health system through a focus on public health preparedness, emphasizing the importance of other health system fundamentals including primary health care and enhancing linkages of the resilient health system components, such as the linkage between public health and clinical management.

#### 5.2.1 Universal health coverage

Effective responses to global health threats require strong health systems. The WHO Western Pacific Region framework, *Universal Health Coverage: Moving Towards Better Health*, outlines 15 action domains across five health system attributes: quality, efficiency, equity, accountability, and sustainability and resilience. While public health preparedness is one action domain within the sustainability and resilience attribute, the health systems components that facilitate emergency response, including a skilled workforce, disease surveillance and other health information systems, adequate infrastructure for clinical care, and laboratory diagnostics, may be found across all the APSED III focus areas. APSED III is therefore embedded within and contributes to the broader umbrella of health system strengthening.
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5.2.2 WHO Health Emergencies Programme

In May 2016, at the Sixty-ninth World Health Assembly in Geneva, WHO Member States established the new WHO Health Emergencies Programme. The programme reaffirmed the importance of Member States’ preparedness for emergency response, and also assigned operational roles to WHO for outbreaks and humanitarian emergencies to complement its traditional technical and normative roles.

APSED III translates the 2016 global direction into priority actions at the country and regional levels, and all APSED III focus areas strengthen the fundamental public health components that will help countries prepare for, prevent, respond to and recover from outbreaks and public health emergencies.

5.2.3 Global Strategic Plan for IHR implementation

The report of the Review Committee on the Role of the International Health Regulations in the Ebola Outbreak and Response was presented to the World Health Assembly in May 2016. The review committee made a number of recommendations including the recommendation that WHO should “lead the development of a Global Strategic Plan to improve public health preparedness, in conjunction with States Parties and other key stakeholders, to ensure implementation of IHR, especially the establishment and monitoring of core capacities”. In the absence of a global strategy, Member States and the APSED TAG recommended that APSED should continue to serve as an important framework for action at the regional level. It is anticipated that APSED’s generic system strengthening approach will align with and complement a future global plan.

5.3 Links to broader initiatives and frameworks

5.3.1 Sustainable Development Goals

In 2015 the United Nations General Assembly adopted a set of goals to end poverty, protect the planet and ensure prosperity for all through the Sustainable Development Goals (SDGs). The social and economic factors that the SDGs strive to improve are key factors in preventing public health risks and enabling a resilient response and recovery. While all goals will contribute to improving health, SDG 3 specifically addresses health: “Ensure healthy lives and promote well-being for all at all ages.” and SDG 3, Target D, aims to “strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks”. In this context APSED III efforts will align with SDG and build more resilient, efficient, equitable, accountable and quality-focused health systems by promoting the fundamental components necessary for public health emergencies that will, in turn, enable effective preparedness, reduced risks, early detection of events, appropriate and rapid response, and regional collaboration and coordination. While SDG 3, Target D, is particularly relevant to APSED III, APSED III also contributes to many other SDG goals directly and indirectly. For example, strengthening AMR capabilities contributes not only to SDG 3, but also to SDGs 2 and 12. In parallel to the SDGs, APSED III recognizes the intercontinental nature of health, which calls for a whole-of-systems, whole-of-government and whole-of-society approach. Without a resilient health system, any public health emergency could interrupt routine health system functioning and directly affect the majority of the SDGs, including those related to social and economic development.
5.3.2 **One Health**

The One Health concept recognizes that the health of humans is connected to the health of animals and the environment, and is considered to be an important framework for addressing issues threatening health, including AMR. The One Health approach is primarily preventive and emphasizes the need for effective collaborative efforts across the human health, veterinary medicine and environment sectors to control emerging diseases of animal origin, contribute towards pandemic preparedness, and reduce the risk of zoonotic potential including foodborne diseases at its source. Since 2010, APSED has been promoting a coordination and collaboration approach on the prevention and control of zoonotic diseases at the human–animal interface. Zoonosis coordination and collaboration remains vital at national, regional and international levels. Prevention, detection and response are the key themes of One Health, and APSED provides a generic platform that supports strengthening core fundamental public health components that are able to adapt to evolving threats and provides a mechanism for coordination of Member States, FAO, OIE, WHO and partners to address zoonotic disease threats at their source.

5.3.3 **Climate Change**

It is recognized that individuals and communities are experiencing significant impacts of climate change, which include changing weather patterns, shifting patterns of infection, rising sea levels and more extreme weather events. Climate change also affects the social and environmental determinants of health – clean air, safe drinking water, sufficient food and secure shelter. The United Nations Framework Convention on Climate Change (the Paris Agreement) is acknowledged to be the primary international, intergovernmental forum for negotiating the global response to climate change. SDG 13 addresses climate change and its impacts, and one target within the goal calls for strengthening resilience and adaptive capacity to climate-related hazards and natural disasters in all countries. All APSED III focus areas strengthen the fundamental components that can be applied to public health preparedness for and response to climate-related hazards and natural disasters, and can measure the health effects from climate change, in particular those due to arboviral diseases, as the vectors are highly sensitive to climate change. APSED III also contributes to the draft *Western Pacific Regional Framework for Action on Health and Environment on a Changing Planet* to strengthen governance and coordination with a wide range of sectors and agencies to achieve priority SDG targets and indicators, including SDG 13 on climate change.

5.4 **Socioeconomic determinants**

5.4.1 **Gender, equity and human rights**

Gender, equity and human rights are key issues in sustainable development. Sex refers to the biological factors differentiating males and females, and gender refers to the socially constructed norms, roles and relations, or men and women. With regards to public health emergencies, sex and gender inequities can affect exposure and vulnerability to pathogens or hazards, access to resources such as health care, monitoring of health risks and outcomes, and risk communication. Other inequities include those created by social marginalization and geography, isolating communities and
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individuals from being effectively engaged in the health system, and affecting social and economic determinants of health. There are also important human rights considerations, based on the normative guidance such as the Siracusa Principles, that need to be balanced with public health actions that can at times infringe those rights, such as restrictions of movement for the benefit of the population.

Member States are encouraged to consider factors relating to gender, equity and human rights in APSED planning, implementation and M&E. Mainstreaming gender in the EID programmes continues to be a common practice under APSED III.

6. Implementing the strategy

APSED is a well-established bi-regional strategy that has served the Asia Pacific region for over a decade, it supports the implementation of IHR core capacities, and has resulted in several notable achievements, a number of which have already been highlighted in this document. APSED evaluation has shown that Member States value APSED as it provides a generic system-strengthening approach and a flexible platform wherein countries are able to easily link to other frameworks and initiatives. A coordinated multisectoral effort at national and regional levels is required to implement APSED III in order to strengthen capacity for emerging diseases and public health emergencies. The skills and capacities of Member States should be utilized, where possible, to advance IHR core capacity implementation across the Asia Pacific region.

APSED III goals, objectives and focus areas are in line with the new WHO Health Emergencies Programme. The strategic actions of APSED III are consistent with and contribute to achievement of WHO Health Emergencies Programme results framework. The flexibility of APSED III will ensure its continued validity in light of potential changes in the health security landscape, such as the development of a global strategic plan for implementation of IHR.

As a result, APSED III will retain the same approach for implementation, which includes working in partnership, being flexible in implementation, learning from real-world events, linking to other initiatives and focusing on the fundamentals required for public health security.

This section proposes national- and regional-level mechanisms for successful APSED III implementation.

6.1 National-level mechanisms

There need to be effective mechanisms for national-level management and coordination for APSED planning, implementation and M&E. APSED actions may be implemented within a specific APSED or IHR plan, incorporated into existing emerging diseases and public health emergency plans, or within broader national health plans.
Member States may consider the use of the following, or similar, mechanisms for effective APSED planning and implementation:

- Establish and/or maintain a lead health function to ensure all IHR, APSED and M&E activities are followed up and aligned. Where possible, this role should utilize and build upon Member States’ existing structures such as IHR NFP function, and be led by national public health officials.
- Establish a standing committee with primary responsibility for strategy implementation. Representation should include IHR NFPs, senior health executives and their counterparts from other sectors (animal health and food safety), disaster management executives and civil society.

Ultimately, the approach for APSED III implementation should be tailored to the context of each Member State.

### 6.2 Regional-level mechanisms

The following mechanisms at the regional level will be used for APSED III implementation (see Fig. 8).

#### 6.2.1 Executive functions

Executive functions refer to the WHO Regional Committee for South-East Asia and the WHO Regional Committee for the Western Pacific, which are the regional governing bodies. These, or other high-level meetings of senior decision-makers from national health authorities in Member States, will be used, when appropriate, to ensure political commitment. For example, this may be through the adoption of resolutions or to support activity implementation through progress reports. Following the APSED TAG meeting in June 2016, endorsement for APSED III will be sought from the regional committees in 2016.
Fig. 8. Model for regional coordination and management for APSED III

6.2.2 Technical Advisory Group

The APSED TAG established and utilized for APSED (2005) and APSED (2010) will continue to serve as a bi-regional mechanism to provide technical guidance for the annual and overall implementation of APSED III. The TAG mechanism contributes to the M&E processes for APSED through reviewing progress and making recommendations for implementation.

Time-limited working groups may be established to bring together expertise to work on specific issues as need arises. The APSED TAG meeting, with attendance from TAG members and representatives from Member States and partners, is anticipated to occur annually, alternating between bi-regional meetings and separate meetings for the South-East Asia Region and the Western Pacific Region.
6.2.3 Partners Forum

There are numerous partner organizations that have worked collectively with Member States and WHO to strengthen preparedness and response capacity for emerging diseases and public health emergencies in the past decade. APSED III provides a common regional framework for health security in the Asia Pacific region through strengthening preparedness and response to emerging diseases and public health emergencies, as required by IHR (2005), and offers a mechanism for partner coordination and collaboration. Continued technical and financial support from partners is essential to the success of APSED III. The annual APSED TAG meetings have had a Partners Forum for enhancing harmonized partner coordination and collaboration. It is proposed that these partner forums will continue to facilitate aligning and harmonizing partner support with APSED, thus contributing to efficient use of resources.

6.2.4 WHO role

Through its regional and country offices, WHO will work with Member States and partners via the following major mechanisms:

- direct technical support such as work plans and guidance documents for Member States to implement APSED III and strengthen their core capacities;
- providing global and regional public goods on behalf of Member States, such as surveillance, risk assessment and response;
- convening role to bring Member States together with regional and international partners to forge partnerships and collective efforts; and
- support national governments to collaborate actively with each other, including providing surge capacity in public health emergencies and technical cooperation with resource-limited countries.

WHO will continuously monitor its support to Member States for APSED implementation and regularly seek feedback from Member States to improve the quality of support.

The Country Cooperation Strategy (CCS) guides the work of WHO in a given Member State. The CCS harmonizes WHO support with the country’s National Health Plan as well as with other United Nations agencies and development partners. APSED III can be used as a reference document to inform the development or revision of a CCS in the area of PHEP and response.

The effectiveness of WHO’s work depends on effective management systems at all levels of the Organization, and the clear differentiation of roles and responsibilities between the different levels – headquarters, regional offices and country offices. This helps to ensure coordination, joint working and the avoidance of inconsistencies and duplication. Six core functions are set out in WHO’s Twelfth General Programme of Work:

- providing leadership on matters critical to health and engaging in partnerships where joint action is needed;
- shaping the research agenda and stimulating the generation, translation and dissemination of valuable knowledge;
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- setting norms and standards, and promoting and monitoring their implementation;
- articulating ethical and evidence-based policy options;
- providing technical support, catalysing change and building sustainable institutional capacity;
- monitoring the health situation and assessing health trends.

A brief description of how these core functions are translated into roles at the three levels of the organization, headquarters, regional offices and country offices follows.

The role of WHO Headquarters (HQ) is to lead in shaping the global health agenda and to convene global intergovernmental meetings and working groups and key stakeholders (including Member States) for global health initiatives, strategies and plans. WHO HQ also promotes best practices in the provision of technical collaboration in support of regional and country technical cooperation. In addition, WHO HQ also backstops regional offices by providing specialized technical assistance and mobilizing surge capacity in crises and emergencies.

The Regional Office is a hub for information, technical expertise, strategic collaboration and coordination of WHO country offices. Their roles and functions include: supporting APSED implementation to build core capacities; taking the lead in developing work plans and budgets at the regional level; adapting, supporting and monitoring the implementation of norms, standards and guidelines at the country level; monitoring programme delivery; and coordinating and supporting the voluntary independent assessment of country core capacities. The Regional Office also provides day-to-day country office support to monitor and assess health data, conduct risk assessments and support emergency operations, including ensuring timely activation for events graded using WHO’s internal process for determining the organizational and external resources required for an event, including the provision of surge capacity. In addition, the Regional Office also builds, develops and operates partnerships as a means of supporting country offices in their efforts to raise much-needed resources, and generates and disseminates knowledge on best practices.

Country offices maintain overall responsibility for WHO’s presence and activities in a region. Their roles and functions include: supporting countries to adapt and implement guidelines, tools and methodologies; providing policy advice; taking the lead in developing work plans and budgets at the country level that incorporate APSED implementation to build core capacities, support training and emergency simulation; and supporting Member States in risk and crisis communication. The country offices also provide country-level operations and logistics support for all events and, in health-cluster countries provide coordination of the local health cluster. Country offices detect, report and verify new events, conduct risk assessments for new and ongoing events, liaise with regional focal points, provide day-to-day management of graded emergencies under IMS, and repurpose resources as necessary. They also coordinate with the IHR NFP to review, analyse and ensure adequate annual reporting on the implementation of the regulations, and support the voluntary independent assessment of country core capacities.
6.3 Financing and sustainability

Ensuring regional PHEP and response requires sustainable financial investment from both national governments and from national and international partners. Implementation of APSED III represents a joint commitment and collective effort to ensure that all Member States are safer and more secure in the face of emerging diseases and public health emergencies. Effective implementation of the strategy to achieve this common goal requires sustainable financial and technical support.

Member States and partners will be required to establish and support a strategic approach for mobilizing adequate and sustainable financial resources to implement the strategy at the country, regional and global levels. State Parties to IHR (2005) have specific responsibilities to collaborate through provision or facilitation of technical cooperation and logistical support, and to the extent possible, in mobilization of financial resources to provide support to resources-limited countries in building, strengthening and maintaining the capacities required under IHR (2005). High- and upper-middle-income countries are strongly encouraged to provide financial and technical support to resource-limited countries.

There are a number of initiatives related to health security that provide opportunities to implement APSED III. These include initiatives funded under the Global Health Security Agenda or by the Asian Development Bank and The World Bank.

Recommended mechanisms and options for Member States, various stakeholders and potential partners include:

- Strengthening preparedness-driven resource mobilization by creating an annual budget, using national action plans to mobilize long-term resource commitments from countries and partners, refocusing from a response-driven to a generic preparedness-driven resource mobilization approach, and establishing emergency contingency funds at the national level to ensure that adequate funds are available immediately for responding to emergency situations.

- Strengthening financial mechanisms through bolstering existing national financial mechanisms and seeking alternative financial mechanisms, for example expanding financial mechanisms to include partnerships with the private sector.

- Working with WHO and partners to utilize the funding opportunities from various health security initiatives.

- Strengthening advocacy through formulating and disseminating a set of information and advocacy packages that are closely linked to APSED success stories.
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<table>
<thead>
<tr>
<th>Term</th>
<th>Definition and description</th>
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<tbody>
<tr>
<td>AAAQ</td>
<td>Refers to the acronym for the four interrelated and essential elements of the right to health: Availability, Accessibility, Acceptability and Quality as outlined by Committee on Economic, Social and Cultural Rights (CESCR General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12)) Adapted from WHO. (2015). Health and human rights.</td>
</tr>
<tr>
<td>Accountability</td>
<td>Accountability is a human rights principle that needs to be considered when applying a human rights-based approach to health. Under international human rights law, duty-bearers are obligated to respect, protect and fulfil human rights, including the right to health and other health-related rights. Accountability compels a State to explain what it is doing and why and how it is moving, as expeditiously and effectively as possible, towards the realization of the right to health for all. Mechanisms of accountability are crucial for ensuring that the State obligations arising from the right to health are respected and that redress options exist to investigate and address alleged violations. The right to health can be realized and monitored through various accountability mechanisms, but as a minimum, all such mechanisms must be accessible, transparent and effective Health and human rights, 2015 and Innov8: Leaving no-one behind. (In preparation, Geneva, World Health Organization).</td>
</tr>
<tr>
<td>Asia Pacific region</td>
<td>The Asia Pacific region includes the 48 countries and areas of two regions of the World Health Organization – the South-East Asia Region and the Western Pacific Region. (APSED, 2010).</td>
</tr>
<tr>
<td>Behaviour-change communications</td>
<td>Delivery of health programmes through health promotion – i.e. encouraging the active prevention of disease and outbreaks through positive behaviour change. It involves social mobilization. (APSED, 2010)</td>
</tr>
<tr>
<td>Climate change</td>
<td>A change of climate attributed directly or indirectly to human activity that alters the composition of the global atmosphere, in addition to natural climate variability observed over comparable time periods. (Adopted by the United Nations Framework Convention on Climate Change, 1992)</td>
</tr>
<tr>
<td>Emergency operations centre</td>
<td>An emergency operations centre (EOC) is the facility and function for preparedness planning, strategic policy and coordinated response (logistics and operations) to public health emergencies, including support to field-based responders and response agencies. (WHO Framework for a Public Health Emergency Operations Centre, 2015)</td>
</tr>
<tr>
<td>Equity</td>
<td>Equity is the absence of avoidable, unfair or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or by other social stratifiers. “Health equity” implies that ideally everyone should have a fair opportunity to attain their full health potential. (Equity)</td>
</tr>
<tr>
<td>Emerging diseases</td>
<td>Infections that newly appear in a population, or have existed but are rapidly increasing in incidence or geographic range, including new diseases as well as re-emerging and resurging known diseases, and known epidemic-prone diseases. The term &quot;emerging diseases&quot; is used interchangeably with emerging infectious diseases (EIDs). (APSED, 2010)</td>
</tr>
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| Event-based surveillance (EBS) | The organized and rapid capture of information about events that are a potential risk to public health. This information can be rumours and other ad-hoc reports transmitted through formal channels (i.e. established routine reporting systems) and informal channels (i.e. media, health workers and nongovernmental organizations reports). (*A Guide to Establishing Event-Based Surveillance, WHO 2008*) |
| Field Epidemiology Training Programme | A practical training programme to build capacity for field epidemiology covering data analysis, surveillance system evaluation, outbreak investigation and operational research. (*Adapted from APSED, 2010*) |
| Gender | Refers to the socially constructed characteristics of both women and men – such as norms, roles and relationships of and between groups of women and men. Gender varies from society to society and can be changed. While most people are born either male or female, they are taught appropriate norms and behaviours – including how they should interact with others of the same or opposite sex within households, communities and work places. When individuals or groups do not “fit” established gender norms they often face stigma, discriminatory practices or social exclusion – all of which adversely affect health. (*Gender mainstreaming for health managers: a practical approach, 2011*) |
| Hazard | A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. (*UNISDR Terminology, 2009*) |
| Health-care worker | WHO defines health-care workers as "all people engaged in the promotion, protection or improvement of the health of the population". (*World Health Report, 2006*) |
| Health emergency communications | Quick and accurate dissemination of information during a public health event or crisis. (*APSED, 2010*) |
| Human rights | Legal entitlements of individuals and groups that protect fundamental freedoms and human dignity. Human rights are universal, inalienable and interdependent and interrelated. They are enshrined in international, regional and national law. The right to the highest attainable standard of health was first enshrined in the WHO constitution. (*Health and human rights, 2015*) |
| Indicator-based surveillance (IBS) | The systematic collection and analysis of timely and reliable data on priority diseases, syndromes and conditions from formal sources. (*APSED, 2010*) |
| Incident management system (IMS) | An emergency management structure and set of protocols that provides an approach to guiding government agencies, the private sector, nongovernmental organizations and other actors to work in a coordinated manner, primarily to respond to and mitigate the effects of all types of emergencies. The incident management system (IMS) may also be utilized to support other aspects of emergency management, including preparedness and recovery. (*Framework for a Public Health Emergency Operations Centre, WHO 2015*) |
| Modified FETP | A shorter course compared to the conventional two-year FETP course. It adapts to country situations and needs, while maintaining the basic concepts of training through on-the-job mentorship and training. (*Third Workshop on Field Epidemiology Training Programmes: Opportunities to Strengthen International Collaboration, Workshop Report*) |
### Monitoring and evaluation

Monitoring refers to the process of regular supervision of the implementation of activities, seeking to ensure that input deliveries, work schedules, targeted outputs and other required actions are proceeding as planned. Evaluation refers to a process that attempts to determine as systematically and objectively as possible the relevance, effectiveness and impact of activities in light of their objectives. *(APSED, 2010)*

### National IHR Focal Point (NFP)

The national centre, designated by each State Party, which shall be accessible at all times for communication with WHO IHR Contact Points under IHR (2005). *(IHR, 2005)*

### Non-discrimination

Non-discrimination is a human rights principle that needs to be considered when applying a human rights-based approach to health. Non-discrimination in health is absence of any negative judgment about a person or group made on the basis of ethnicity, sex, language, religion, national or social origin, property, birth, physical or mental disability, health status (including HIV/AIDS), sexual orientation, civil, political, social or other status or opinion which limits their access to health care or the underlying social determinants of health. Discrimination can mean poorly targeted health programmes or restricted access to services. Discrimination means that those with equal need are not treated equally. Overcoming discrimination demands objective, reasonable criteria intended to rectify inequities in health. *(Health and human rights, 2015)*

### One Health

Coordinated global activities to address health risks at the animal–human–ecosystems interfaces to attain optimal health for people, domestic animals, wildlife, plants and our environment. *(Tripartite partnership of FAO, WHO, and OIE highlights the importance for strengthened work at the human–animal–ecosystem interface, 2013)*

### Operation communications

Timely exchange of information among public health authorities and with decision-makers to ensure a smooth chain of command and coordination. *(APSED, 2010).*

### Participation

All persons and groups are entitled to active, free and meaningful participation in, contribution to, and enjoyment of civil, economic, social, cultural and political development in which human rights and fundamental freedoms can be realized (UNDG, 2002). Human rights law recognizes the participation of the population in all health-related decision-making at the community, national and international levels (CESCR, 2000). Participation is one of the human rights principles that needs to be considered when applying a human rights-based approach to health. Adequate and sustainable financial and technical support, including investment in empowerment of rights-holders, is essential to enable meaningful participation. *(UN Committee on Economic, Social and Cultural Rights, 2000 and UN Statement of Common Understanding on Human Rights-Based Approaches to Development Cooperation and Programming, 2002)*

### Preparedness

Capability of the public health and health care systems, communities, and individuals, to prevent, protect against, quickly respond to, and recover from health emergencies, particularly those whose scale, timing, or unpredictability threatens to overwhelm routine capabilities. Preparedness involves a coordinated and continuous process of planning and implementation that relies on measuring performance and taking corrective action. *(Nelson et al., 2007)*
### Public health security
The proactive and reactive activities required to minimize vulnerability to acute public health events that endanger the collective health of national populations. Regional public health security widens this definition to include acute public health events that endanger the collective health of populations living across the Asia Pacific region. Lack of regional health security may have an impact on economic or political stability, trade, tourism, access to goods and services in the Asia Pacific region. *(APSED, 2010)*

### Point of entry
A passage for international entry or exit of travellers, baggage, cargo, containers, conveyance, goods and postal parcels, as well as agencies and areas providing services to them on entry or exit. It includes international airports, ports and ground crossings. *(IHR, 2005)*

### Public health risk
Public health risk is defined as a likelihood of an event that may affect adversely the health of human populations, with an emphasis on an event that may spread internationally or may present a serious and direct danger. *(IHR, 2005)*

### Public health emergency
An occurrence or imminent threat of significant illness or health condition, caused by acute exposure to hazards, including biological, chemical, radiological, natural and technological hazards. For the purpose of this document, a public health emergency mainly refers to an emergency caused by emerging diseases and/or other acute public health events that are managed by national public health authorities. If not managed quickly, it may go beyond national borders and cause a public health emergency of international concern, such as an influenza pandemic. *(APSED, 2010)*

### Rapid response team
A multidisciplinary team that can be mobilized on short notice for routine and rapid investigation of and response to public health events at any level, nationally or internationally. *(Adapted from APSED, 2010)*

### Risk
The likelihood of the occurrence and the likely magnitude of the consequences of an adverse event during a specified period. *(Rapid Risk Assessment of Acute Public Health Events, 2012)*

### Risk assessment
An ongoing systematic process of organizing multiple sources of information within a risk management framework to determine a level of risk to guide decision-making. A risk assessment has two facets: (1) identification and characterization of threats; and (2) analysis and evaluation of risks associated with exposure to those threats including vulnerabilities and coping capacities. *(Adapted from APSED, 2010)*

### Risk communication
Risk communication is the range of communication principles, activities and exchange of information required through the preparedness, response and recovery phases of a serious public health event between responsible authorities, partner organizations and communities at risk to encourage informed decision-making, positive behavior change and the maintenance of trust. *(Adapted from APSED, 2010)*

### Siracusa principles
Human rights law recognizes the need to limit human rights in some, limited circumstances. The Siracusa principles are narrowly defined conditions that must all be met to justify limiting the exercise or enjoyment of a human right based on public health grounds as defined in The Siracusa principles on the limitation and derogation provisions in the international covenant on civil and political rights. *(The Siracusa principles on the limitation and derogation provisions in the international covenant on civil and political rights, 1985 and 25 Questions and answers on health and human rights, 2002)*
### Social determinants of health

Social determinants of health refer to the conditions in which people are born, grow, live, work and age, including the health system. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels. ([Closing the gaps](#), 2008)

### SDGs

Acronym referring to the 17 interlinked, integrated and indivisible Sustainable Development Goals, adopted by UN Member States in September 2015. They set out a vision of economic, social and environmental development until 2030 with a specific focus on equity by leaving no-one behind.

### UHC

Universal health coverage means that all people and communities receive the health services they need. This includes health promotion, treatment, rehabilitation and palliation of sufficient quality to be effective while at the same time ensuring such care does not cause financial hardship. ([Universal Health Coverage: Moving towards better health. Action framework for the Western Pacific](#), 2016).

### WHO South-East Asia Journal of Public Health

A peer-reviewed, open-access biannual journal of the WHO South-East Asia Region. ([SEAJPH](#), 2016)

### Western Pacific Surveillance and Response Journal

A peer-reviewed, open access journal on the surveillance of and response to public health events in the WHO Western Pacific Region. ([WPSAR](#), 2016)

### Zoonoses

Any disease or infection that is naturally transmissible from animals to humans or vice versa. ([APSED](#), 2010).
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Bibliography


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Regional action agenda on achieving the SDGs in the Western Pacific Region (in preparation).


Regional Framework for Environment and Health in the Western Pacific (in preparation).


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Appendix 1. Process for developing APSED III

The process of developing the *Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies* (APSED III) began in February 2015 with the APSED evaluation (Fig. A1). The evaluation confirmed the significant achievements reached through APSED (2005) and APSED (2010) over the past 10 years. The evaluation findings also indicated the continued relevance of APSED to the development of country capacities to deal with a variety of health security risks using a generic approach. The Asia Pacific region is better prepared now than a decade ago to detect, prepare for and respond to emerging infectious diseases (EIDs) and public health emergencies. In July 2015, the annual meeting of the Technical Advisory Group on the APSED (APSED TAG) recognized the significance of the APSED evaluation and recommended initiating a consultation process to develop an updated strategy. Since the APSED TAG meeting in 2015, a number of consultative processes were initiated to review the progress of APSED and gather ideas and opinions on the future direction of the updated APSED. Central to this process were reviews of consultations with Member States, technical experts and discussions with partners, all of which provided key inputs into the updated strategy, and the latest developments globally and in the Asia Pacific region related to, for example, economic development, technological advances and new health initiatives.

Learning from APSED

The 2015 evaluation of APSED involved field missions to Member States and reviews of documentation including IHR (2005) annual questionnaires, APSED evaluation questionnaires and outbreak reviews. The evaluation found that the APSED approach was appropriate for the Asia Pacific region. Specifically, the APSED approach includes building generic capacities for EIDs and public health emergencies, in a stepwise manner to build capacity through annual national planning and review processes, working collectively to achieve a common goal and investing in preparedness before events occur. The biregional scope of the strategy is considered valuable for two WHO regions due to shared health security threats and high interactions among countries. Additionally, APSED has also been effective in mobilizing additional funding to implement activities.

Progress has been achieved in a number of areas: event-based surveillance (EBS) systems; rapid response teams (RRTs); the Field Epidemiology Training Programme (FETP); laboratory capacity for diagnosis of known and unknown pathogens, and referral networks; public health emergency contingency plans for points of entry (POE); risk communication; national IHR I focal point (NFP) capacities; animal–human health coordination; regional surveillance; and monitoring and evaluation (M&E). These areas of improvement can be attributed to Member States and the many partners working collectively.

However, the Asia Pacific region continues to face health security threats and there is a need for further strengthening IHR core capacities. While significant progress has been made in multiple areas, there have been some challenges. In previous iterations of APSED, great attention was paid to infection prevention and control (IPC), but insufficient progress has been made in this area. In order for IPC to be more sustainable it should be embedded in established health systems. It was also noted that despite the recognized importance of risk assessment, the technique and tools were not systematically applied. Events have shown that there is also a need to pay attention to developed
countries. Even with advanced health-care systems, imported cases of infectious disease, antimicrobial-resistant organisms and compliance of health-care workers with IPC measures can be challenging.

Learning from public health events

In 2009, the influenza A(H1N1)pdm09 pandemic was a major global public health event that strongly influenced the development of APSED (2010). For the development of APSED III there have been a number of events, in particular human infections with avian influenza A, the Ebola Virus Disease outbreak in West Africa, MERS outbreak in the Republic of Korea, and Cyclone Winston in Fiji, that have informed the new strategy. These events have provided important lessons supporting the need to continuously strengthen the fundamental components for PHEP and response for improved health security. The major lessons include:

- Infectious diseases are unpredictable, and vulnerability is universal, so we must prepare for the unexpected in all Member States, regionally and globally.
- While we have built significant capacity in the Asia Pacific region, further strengthening and maintenance of the fundamental components for PHEP is essential, as the Asia Pacific region continues to face health security threats.
- Investment in preparedness between outbreaks and public health emergencies is beneficial as it maximizes resources and provides a good system for response.
- Greater collaboration, coordination and connectivity with other sectors as well as the national, regional and global initiatives from multiple stakeholders are needed in preparing for and responding to infectious disease outbreaks and public health emergencies.
- Outbreaks may have social, political and economic impacts far beyond their health dimensions.

Taking these lessons into account, particularly the rapid and widespread effects of Ebola, APSED III reflects the importance of continuous strengthening of the fundamental components, and of ensuring links to other strategies to create a risk-based all hazards approach for effective preparedness and response.

Consultative process of developing APSED III

Following the 2015 APSED TAG recommendations, the WHO Regional Office for South-East Asia and the WHO Regional Office for the Western Pacific initiated an intensive consultative process with Member States, technical experts and partners to develop an updated APSED for consideration for endorsement by the respective Regional Committee in each region in 2016.
Informal consultations were conducted from September 2015 to May 2016. Participants included WHO country office team leaders, technical experts and key stakeholders. These meetings aimed to gain an overall perspective on progress, lessons learnt and future directions for APSED. The final consultation meeting, the High-level Informal Consultation on Health Security and Emergencies, was held on 13 June 2016, in Manila, Philippines.

The consultative process with Member States was conducted between December 2015 and May 2016 to gain their perspectives, ideas and opinions on the future direction of the updated APSED. A variety of formats was used including in-country consultations, videoconferences, teleconferences and written feedback in response to a number of questions.

Many Member States indicated that there had been an increase in national capacity through establishing an FETP, event-based surveillance and increased coordination with the animal sector. Many countries also discussed the development of five-year national plans that will integrate many aspects of APSED and developing capacity at subnational levels. The consultation process also helped identify the wide range of issues elaborated by countries, including the need for continuous support from government, greater human resources and workforce development, increased coordination with stakeholders, upgraded infrastructure, and financial sustainability.

The consultations concluded that Member States reconfirmed the relevance of APSED as the common framework for action for working towards IHR core capacities as well as building national capacity to manage health security threats. Member States agreed that the vision, goal, objectives and approach of APSED remain relevant. The updated APSED should aim to protect and advance critical core capacities and provide a flexible approach for managing all EIDs, and public health emergencies in the Asia Pacific region. While there was general support for the repackaging of the focus areas from eight to six, some Member States would like to retain the important areas of work on zoonoses and infection prevention and control. A proposed name change to the Asia Pacific Strategy for Emergencies and Emerging Diseases was generally supported, however flexibility was given to modify the full name prior to TAG. Member States and others who were consulted agreed that the APSED acronym should be retained because it is well-known. Member States also indicated that APSED provides a common and consistent platform across regions wherein countries are able to easily share experiences and link to other frameworks and initiatives. There are also areas requiring further investment under APSED and continuing to use a familiar strategy can help Member States achieve IHR core capacity requirements.
Fig. A1. Timeline of consultation process for developing APSED III

**2015**
- February: APSED evaluation
- July: APSED TAG
- September: Surveillance consultation

**September/October**
- Regional Committee meetings

**December**
- Mekong countries consultation
- Global Outbreak Alert and Response Network (GOARN) consultation

**2016**
- January: Joint Country Office–Regional Office consultation
- February: Laboratory consultation
- March: Surveillance consultation
- April: Risk communication consultation
- May: South-East Asia Region and Western Pacific Region meeting
- June: Country consultations
- September/October: Regional Committee meetings

Other consultations include:
- Joint Country Office–Regional Office consultation
- Laboratory consultation
- Surveillance consultation
- Risk communication consultation
- Country consultations