

Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies

Advancing implementation of the
International Health Regulations (2005)



Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies

Advancing implementation of the
International Health Regulations (2005)

Working together towards health security

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Foreword

Experience has shown us that health security threats will continue to occur in unpredictable ways that will challenge even the most advanced health systems. In the Asia Pacific region, which comprises the World Health Organization (WHO) South-East Asia and Western Pacific regions, health security is continually threatened by outbreaks and public health emergencies caused by emerging infectious diseases, the impacts of natural hazards, and unsafe food and water.

The likelihood of novel infectious diseases such as avian influenza emerging in the Asia Pacific region has been attributed to a number of factors including ecological or environmental factors that increase the risk of individuals coming into contact with a previously unfamiliar pathogen or its natural host.

In the region, the *Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies* (APSED III), previously called the *Asia Pacific Strategy for Emerging Diseases* (APSED), is the common framework to address shared threats as required by the International Health Regulations (2005), or IHR (2005). The framework provides an important collaborative platform for Member States, WHO and partners to work together to strengthen preparedness and response to outbreaks and public health emergencies.

APSED has come a long way in the last decade. When the strategy was first developed in 2005, it focused on building minimum capacities for dealing with outbreaks and public health emergencies. The updated version in 2010 was aimed at further developing the core capacities mandated under IHR (2005). APSED III is an upgrade of the previous versions of APSED and aims to strengthen health systems and capacities beyond IHR (2005).

APSED III retains the overall direction of previous versions, while incorporating current contexts and anticipating future needs of Member States. APSED III builds on the implementation of APSED (2005) and APSED (2010), lessons learnt from actual events, and consultations with Member States, technical experts and partners. It also builds on two evaluations of APSED, the last of which was conducted in 2015. The evaluation reported on the relevance of the APSED approach in strengthening core public health capacities and in contributing to the development of preparedness and response capacities in Member States.

APSED III focuses on enhancing and sustaining the core public health functions required to sustain and strengthen the entire health system. Linkages to other sectors and health security initiatives are required to prevent, respond to and mitigate the impact of public health emergencies using an all-hazards approach.

APSED III addresses the need for closer coordination with other international frameworks and initiatives such as: the *Sendai Framework for Disaster Risk Reduction 2015–2030*, the *United Nations Framework Convention on Climate Change*, the Sustainable Development Goals (SDGs), universal health coverage (UHC), and the *Global Health Security Agenda* (GHSA), as well as enhanced collaboration on zoonoses using the One Health approach and increased attention to gender, equity and human rights.

Health systems strengthening, UHC and equity are vital components of national resilience, governance and accountability in the face of public health emergencies and disasters. APSED III explicitly recognizes the linkages and potential synergies with these important facets of health system resilience.

Inevitably we will face outbreaks and public health emergencies. APSED III takes a pragmatic, flexible and forward-looking approach as a framework that supports ongoing collective action for health security. We are building on the achievements of a decade of APSED implementation. With APSED III, we will have greater capacity and capability to manage new and recurring public health threats and mitigate their consequences.



Poonam Khetrpal Singh
WHO Regional Director for South-East Asia



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Abbreviations

AMR	antimicrobial resistance
APSED	Asia Pacific Strategy for Emerging Diseases
APSED III	Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies
CCS	country cooperation strategy
EBS	event-based surveillance
EID	emerging infectious disease
EOC	emergency operations centre
EQA	external quality assessment
FET	field epidemiology training
FETP	Field Epidemiology Training Programme
GHSA	Global Health Security Agenda
GOARN	Global Outbreak Alert and Response Network
IBS	indicator-based surveillance
IHR	International Health Regulations
IHR NFP	National IHR Focal Point
IMS	incident management system
INFOSAN	International Food Safety Authorities Network
IPC	infection prevention and control
JEE	Joint External Evaluation
M&E	monitoring and evaluation
MEF	Monitoring and Evaluation Framework
MERS	Middle East respiratory syndrome
MOU	memorandum of understanding
PHEIC	public health emergency of international concern
PHEP	public health emergency preparedness
PIP	pandemic influenza preparedness
POE	points of entry
PPE	personal protective equipment
RRT	rapid response team
SDG	Sustainable Development Goal
SPC	Pacific Community
TAG	technical advisory group
UHC	universal health coverage
WHO	World Health Organization

Executive Summary

In the Asia Pacific region, outbreaks and public health emergencies caused by emerging infectious diseases, the impacts of natural disasters and conflict, 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 disease 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, allowing cross-species transmission of viruses with pandemic potential, such as avian influenza. The presence of newer threats such as environmental, chemical and radiological emergencies as well as uncommon patterns of antimicrobial resistance (AMR) add to our regional vulnerability.

The unpredictable nature of public health events and emergencies in an increasingly interconnected world demands ongoing development of core capacities to manage these threats, as mandated under the International Health Regulations (2005), or IHR (2005), the agreed legal framework among Member States for detecting, preparing for and responding to public health emergencies. The recent Ebola outbreak in West Africa highlighted the fundamental need to further strengthen the core capacities mandated under IHR (2005) to improve health security.

Member States have used lessons learnt from past events to update public health emergency plans, strengthen their preparedness to respond to new and recurring health security threats, and ultimately strengthen the collective readiness of the Asia Pacific region to respond. The lessons have also illustrated the need for Member States to strengthen resilience to health security threats by investing sustainably in preparedness, especially during the period between emergencies. In an interdependent world, preparedness will be enhanced through improved coordination, communication and information-sharing among countries, sectors and stakeholders.

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 strengthening 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, in 2005, the Technical Advisory Group on the Asia Pacific Strategy for Emerging Diseases (APSED TAG) recommended that WHO develop a new strategy for the Asia Pacific region. This new strategic framework, 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 consultations with Member States, technical experts and partners reiterated the relevance of APSED as the common framework for action for working towards IHR (2005) core capacities and building national capacity to prevent, detect, respond to and mitigate health security threats.

The direction and structure of APSED III builds on APSED (2010), and also reflects the findings and recommendations of the 10-year APSED evaluation conducted in 2015. The

upgraded APSED III aims to further enhance the core public health systems and regional collaboration and connectedness, as a priority for effective management of public health emergency preparedness (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 is to strengthen PHEP and response capacity by improving core public health systems, increasing regional connectivity and coordination, and investing in ongoing performance improvement. APSED III aims 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 (UHC) by focusing on eight essential public health functional areas necessary for PHEP, risk mitigation and response operations. APSED III is designed to enable harmonization with other national and international frameworks and initiatives, including the *Sendai Framework for Disaster Risk Reduction 2015–2030*, the *United Nations Framework Convention on Climate Change*, the Sustainable Development Goals (SDGs), UHC and the Global Health Security Agenda (GHSA), and to address the importance of further enhancing collaboration on zoonoses using the One Health approach.

The eight focus areas in APSED III are as follows:

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
8. Monitoring and evaluation

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 those 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 (JEE) 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.

The APSED III guiding principles are as follows:

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

APSED III is a pragmatic, adaptive and forward-looking framework for collective action for health security. While APSED III focuses on essential public health functions, it provides 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.



Chapter 1



Introducing the strategy

1. Introducing the strategy

Background

The Asia Pacific region comprises the 48 countries, territories 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. The regional event-based surveillance (EBS) systems that are present in both regions have detected emerging infectious diseases (EIDs) such as human infections with novel influenza virus subtypes, Zika virus, and imported cases of yellow fever and Middle East respiratory syndrome (MERS). 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 more complex due to a changing social, environmental and economic landscape as well as forecasted significant climate change that may 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. This common vulnerability highlights 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*, an action framework for the Western Pacific Region, and the *Regional Strategy for Universal Health Coverage* for South-East Asia Region and is a means of reaching the Sustainable Development Goals (SDGs), particularly those relating to universal health coverage (UHC).

The *Asia Pacific Strategy for Emerging Diseases* (APSED) was developed in 2005 to implement the International Health Regulations (2005), or IHR (2005), which serves as the agreed legal framework “to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks”. Since its inception, APSED has helped guide Member States in the Asia Pacific region to implement and strengthen the core capacities of the IHR (2005), focusing on building the minimum components of the health system, such as rapid response teams (RRTs), EBS systems and the Field Epidemiology Training Programme (FETP). APSED was revised in 2010, based on Member States' evaluations and lessons learnt from the influenza A(H1N1) pandemic in 2009 and other public health events. APSED (2010) continued to focus on meeting the IHR (2005) core capacity requirements. In addition, the following three focus areas were added to the five original ones: (1) public health emergency preparedness (PHEP); (2) regional preparedness, alert and response; and (3) monitoring and evaluation (M&E).

In 2015, an evaluation of the first 10 years of APSED implementation concluded that significant progress had been made. In particular, improvements were noted in the Member States' capacity to conduct surveillance, develop human resources through FETP, detect priority and unknown pathogens through laboratory diagnostics, and communicate between Member States and with WHO through the IHR mechanism. However, the evaluation concluded that all Member States in the Asia Pacific region remain vulnerable to emerging diseases and public health emergencies, and that national and regional readiness to respond to large-scale and complex events in an effective and coordinated way is still lacking.

Effective implementation of the IHR capacities requires multisectoral coordination as the health sector cannot achieve this alone; however, this remains challenging for Member States. Joint external evaluation (JEE), which is a key component of the post-2016 IHR (2005) Monitoring and Evaluation Framework (MEF), continues to be an integral part of the *Asia Pacific Strategy for Emerging Diseases and Public Health Emergencies* (APSED III), and supports coordinated multidisciplinary efforts to address health security issues. The 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. Ensuring financial sustainability of core public health programmes continues to be a challenge, and will require collaboration with key stakeholders to ensure the implementation of IHR capacities through APSED III.

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 remains relevant.

Scope

APSED is the common biregional framework to advance IHR (2005) for health security, and as such its scope is to strengthen and further improve public health security systems and functions required for PHEP and response.

APSED III builds on the original APSED approach to preparedness and response by providing a high-level framework that gives a common direction to addressing all hazards. The updated title of the strategy, which now contains “Public Health Emergencies”, reflects a more comprehensive all-hazards scope.

APSED III aims to strengthen core public health functions as well as key health system functions such as the health workforce, service delivery, and information and technology systems. Leadership and governance, supported by APSED III, are critical to making health systems more resilient and sustainable. 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).

Vision, goal and objectives

Vision: An Asia Pacific region able to prepare for, detect and respond to public health emergencies through collective responsibility for managing health security.

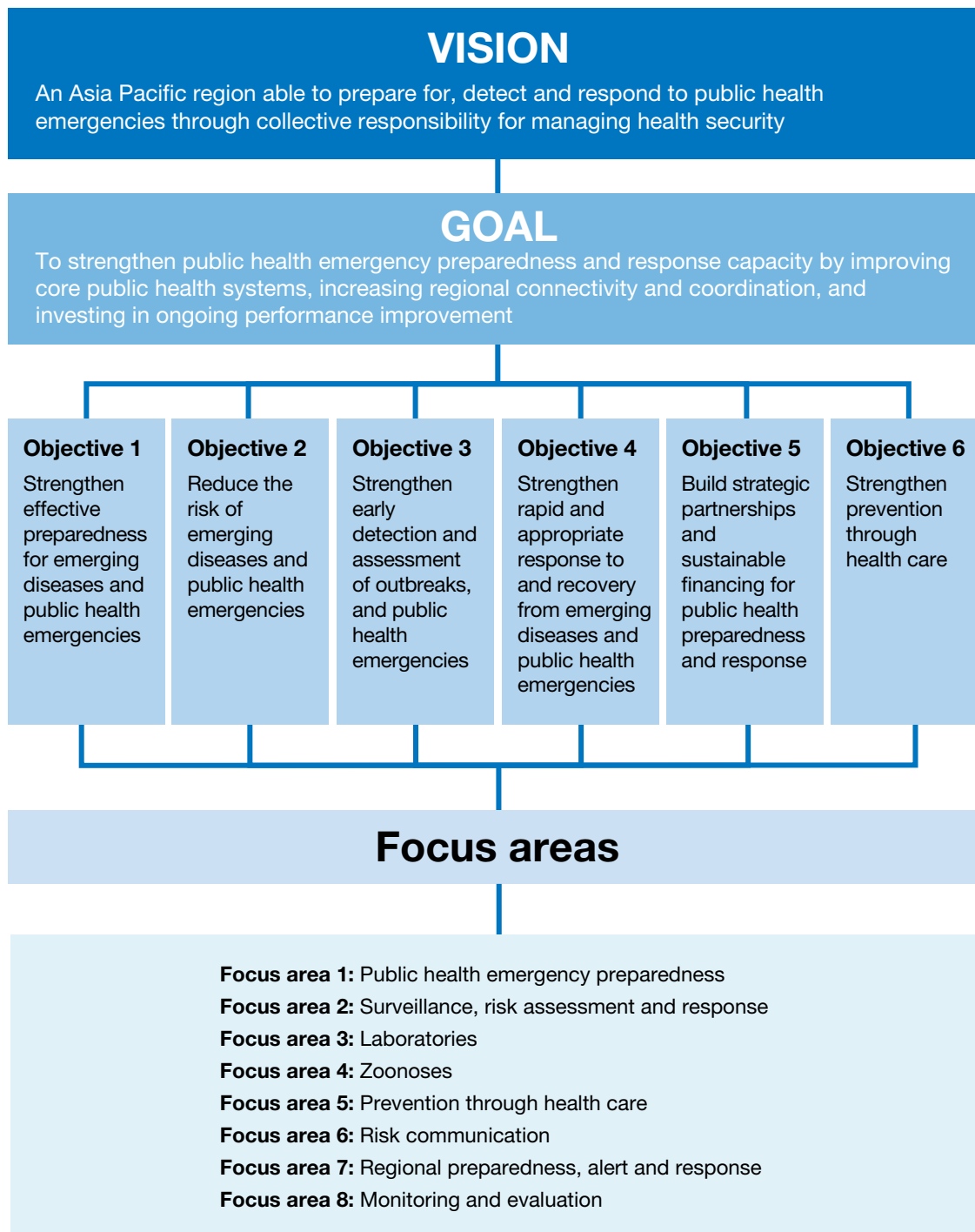
Goal: To strengthen PHEP and response capacity by improving core public health systems, increasing regional connectivity and coordination, and investing in ongoing performance improvement.

Objectives: APSED III has been organized around six interlinked objectives (Fig. 1) that underpin the goal and purpose, and provide a framework for realizing the vision for the Asia Pacific region.

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 GHSA. 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 improvement and protect the health of the people in the Asia Pacific region.

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



Source: WHO

APSED guiding principles

APSED III retains and builds on the principles and approach of previous APSED strategies, and places additional emphasis on the following areas:

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

Intended implementers

Considering our shared vulnerability and responsibility to manage 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 (IHR NFP), if they are different, and national disaster management offices.

Other important implementers are agencies working on health system 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 and WHO 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.

Use of the strategy

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

- as a common framework for action to further enhance the progress made in building national and local capacities to manage EIDs and public health emergencies during the previous decade of APSED implementation;
- 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.

APSED III implementation

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.

APSED III envisions a safer and more secure Asia Pacific region 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.

Implementation of APSED III is a priority for WHO in the Western Pacific Region under the new global WHO Health Emergencies Programme.



Chapter 2



Focus areas

2. Focus areas

APSED III has eight focus areas (Fig. 1) that have been revised and updated from APSED (2010). Based on bottom-up consultations with Member States, the new strategy continues to develop and strengthen the key areas of work to provide a flexible platform for capacity-building and development.

Two notable changes have been made. First, the focus areas have been re-ordered, and second, a new focus area has been added to highlight preparedness and prevention in health-care settings. PHEP is now considered 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 response.

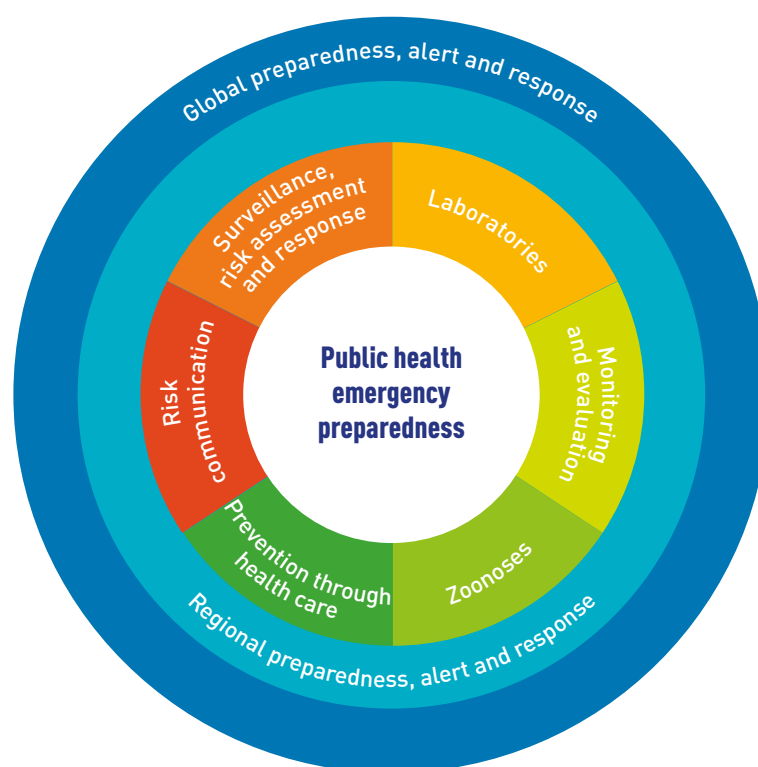
While some progress has been made in infection prevention and control (IPC) since APSED (2005), investments in minimizing infection transmission risk during health care and combatting antimicrobial resistance (AMR) are still needed. As a result, IPC, clinical management, AMR and hospital preparedness have been brought together into a wider focus area, titled “Prevention through health care”. This focus area places greater emphasis on building linkages between public health and clinical services as part of a strong overall health system for preventing, detecting and responding to emerging diseases. The rationale for such linkages is that a well-connected health system would lead to improved management of patients, which could in turn better facilitate prevention and control of emerging diseases.

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
8. Monitoring and evaluation

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 assessment and response systems, coordinated by WHO on behalf of Member States. Focus area 8 targets national- and regional-level systems for collective learning and continuous improvement, and contributes to global M&E as it incorporates the four components of the IHR MEF, including JEE.

Fig. 2. APSED III focuses on the core components for public health emergency preparedness and response at all levels

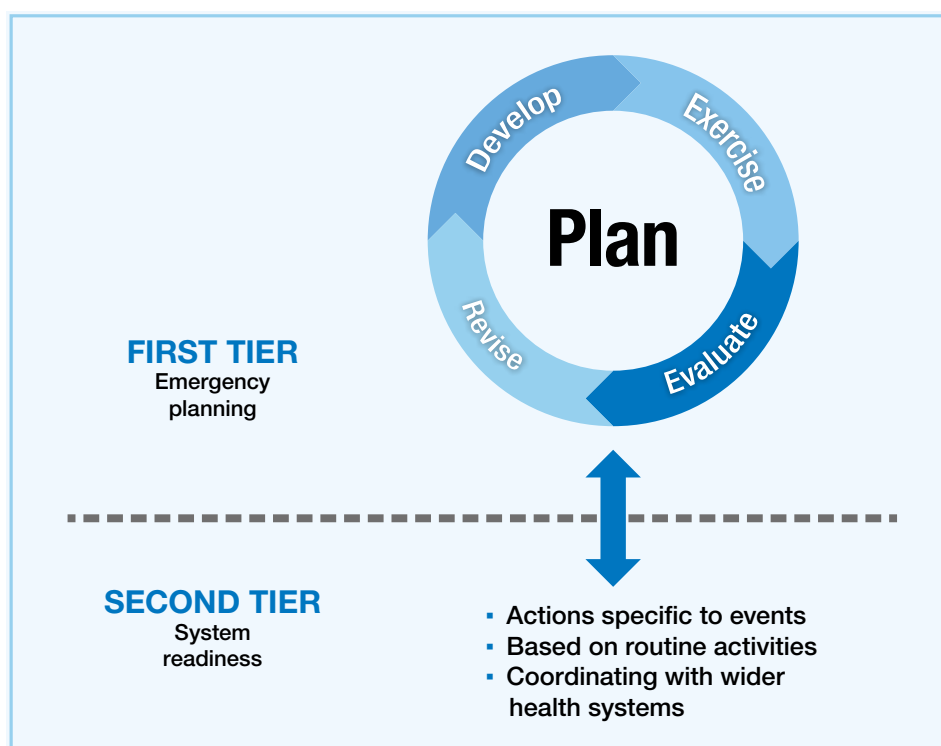


Focus area 1: Public health emergency preparedness

PHEP sits at the core of APSED III (Fig. 2). It is a key aspect of sustainability and resilience as outlined in *Universal Health Coverage: Moving Towards Better Health*, an action framework for the Western Pacific Region, and the *Regional Strategy for Universal Health Coverage* for South-East Asia. 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. 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



Source: WHO

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 the availability of all structures and resources in the health sector and other sectors, including multisectoral coordination mechanisms that facilitate a whole-of-society approach and allow response plans to be implemented immediately and effectively.

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, such as IHR 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.
- 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 III as part of a comprehensive health system strengthening approach.

In the area of PHEP, a number of challenges remain despite significant progress made since APSED (2010) implementation. Challenges identified from the APSED 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.
- Most Member States have a national EID or pandemic influenza plan, 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 and connecting with other sectors, need to be further improved.

In the Asia Pacific region, there is evidence that health “central command and control centres” exist and that they use incident management systems (IMS) and emergency operations centres (EOCs) to address public health emergencies and coordinate risk assessment and management of epidemic-prone diseases. Where IMS and EOCs exist, 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.

Expected outcome

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

The key elements of this focus area are:

- Management of emergency events is improved through the use of IMS principles.
- A national response plan for public health emergencies is developed and tested.
- An ongoing and coordinated process for emergency preparedness planning, management and response 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, are regularly tested and use border measures that are appropriate and effective.

Strategic actions

Improve 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 EOCs, 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 response plan for public health emergencies

- Develop and maintain national operational response plan for public health emergencies (see Fig. 3). When and where practicable, this plan should include national resource and risk mapping, be adapted to match country risks and consider the management of new and multiple concurrent threats.
- Supplement the generic response plan with hazard-specific plans when needed or operating procedures, which, at a minimum, include health-care facility plans and business continuity plans.
- 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 emergency preparedness planning, management and response

- Establish and/or maintain an effective 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.
- 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 are informed by and contribute to other national action plans and that PHEP plans and priorities are updated through the APSED M&E process (refer to M&E focus area).
- Build and strengthen efficient and equitable systems for management and rapid deployment of supplies for outbreaks and other public health emergencies.

Ensure public health emergency response systems are prepared and tested

- 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 public health emergency management capacities (human resources, 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.

Strengthen IHR NFPs

- 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.

Ensure effective measures at POE

- Continue to strengthen routine public health functions at POE at all times.
- Build IHR (2005) 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 partnerships and collaboration on managing public health emergencies at POE.
- Support operational and applied research to improve the evidence base for decision-making that strengthens effective public health response at POE.

Focus area 2: Surveillance, risk assessment and response

Surveillance, risk assessment and response are fundamental for decision-making in order 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. 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 assessment, while an essential link between event detection and response, is 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 rapid response teams (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 and response in consideration of the social determinants of health. 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 feed back 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

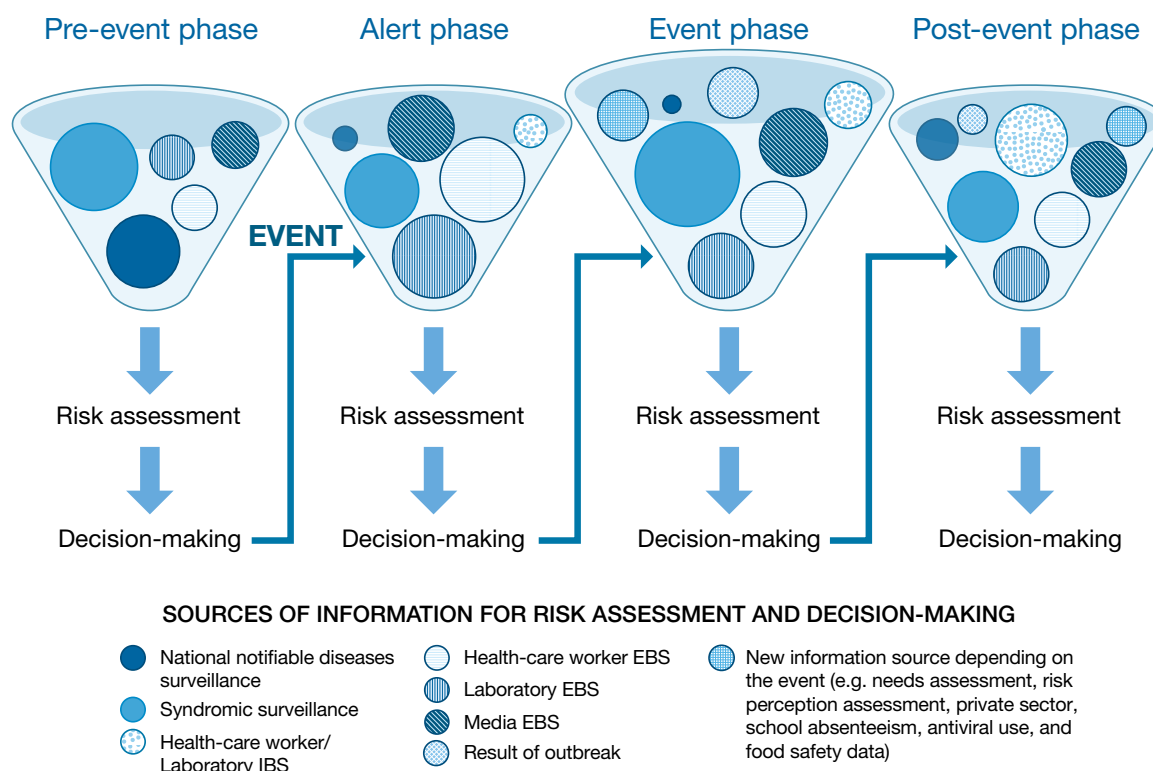


In order to adapt to various public health emergency and response needs at different times during the course of the emergency, various information sources and surveillance methods may be needed over time. It is vital that surveillance systems and information sources are prepared before emergencies occur.

Fig. 5 provides a schematic overview 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.

Fig. 5. The relative importance of different information sources used for risk assessment and decision-making during different phases of an event



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 experts, carry out surveillance, risk assessment and response.

Strategic actions

Ensure surveillance systems are effective, efficient and flexible, and can rapidly adapt to changing information and contextual needs before, during and after events

- Review existing surveillance systems and identify data and information that can be used during different phases of an event, including gender-specific surveillance data.
- Streamline existing surveillance systems for effective and efficient use of resources.
- Improve surveillance systems by involving health-care workers, laboratories, civil society organizations, as well as individual citizens (using social media or other innovative technology) in identifying and reporting unusual or unexpected events.
- Establish reporting and communication channels between private health-care facilities and laboratories and public health systems to facilitate rapid reporting of events as part of EBS.
- Ensure clinical and laboratory staff are alerted to cross-border public health threats.
- Develop and implement data management systems to facilitate timely analysis of data and production and sharing of reports.

Use multiple sources of information from within the health sector and other sectors for risk assessment

- Review and identify sources of information for risk assessment including sources from non-health sectors.
- Formalize and implement the risk assessment function using multiple sources of information.
- Develop operational arrangements for access to multiple sources of information for risk assessment.

Strengthen the risk assessment function to bring about timely and informed decision-making that can guide public health preparedness and response

- Initiate multisectoral policy dialogue to strengthen coordination and communication with stakeholders.
- Produce and communicate timely risk assessment products to stakeholders.
- Conduct forward-looking risk assessment to anticipate threats and contribute to better preparedness.
- Continuously review the risk assessment function to improve the scientific basis for decision-making.

Develop a skilled and adaptable workforce, incorporating FETP/FET trainees and alumni and other technical experts, to carry out surveillance, risk assessment and response

- Build capacity in surveillance and risk assessment at the national and subnational levels.
- Strengthen capacity for multidisciplinary RRTs at the national and subnational levels.
- Promote operational and applied research to improve evidence-based risk assessment.
- Develop and maintain a sustainable and effective FETP/FET .

Focus area 3: Laboratories

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 the emergence of new threats such as novel pathogens, uncommon or new patterns of AMR, and environmental, chemical and radiological threats. 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.

Expected outcome

Public health laboratory system is 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.

Strategic actions

Ensure fundamental laboratory functions

- Strengthen and maintain the fundamental laboratory functions.
- Ensure systems and guidelines for specimen collection, shipping and referral are in place.
- Strengthen laboratory governance, ensure sustainable financing of its public health functions and support to field operations, and develop a trained and skilled laboratory workforce.
- Ensure laboratory biosafety and biosecurity systems are in place to carry out laboratory procedures in safe and secure environments.
- Support generic laboratory techniques that contribute to quality-assured resistance testing with protocols and procedures in place for referral testing of new or unusual resistance patterns.

Link public health laboratories with surveillance and risk assessment

- Develop and/or strengthen laboratory data management.
- 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, food safety 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 laboratory and field settings, taking into consideration the country context.

Assess functionality of public health laboratory system

- Assess laboratory systems using standardized tools, work towards accreditation and conduct simulation exercises to test surge capacity during public health emergencies (refer to the M&E focus area).
- Participate in regional and global external quality assessment (EQA) programmes and establish a national EQA scheme.

Enhance public health laboratory connections and coordination

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

Focus area 4: Zoonoses

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 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. Problems related to AMR are inherently related to antimicrobial use in any environment, including human and non-human. The use of antimicrobial agents in food-producing animals/crops provides a potentially important risk factor for selection and dissemination of AMR microorganisms and determinants from animals/food crops to humans via the consumption of food. 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 Organisation for Animal Health (OIE) are working with WHO and partners within the context of the FAO-OIE-WHO Tripartite Strategic Alignment 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 coordination mechanisms for 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 importantly, continued emphasis on establishing and developing multisectoral and multi-stakeholder collaboration and coordination mechanisms, particularly with animal health and environmental health sectors.

Expected outcome

Member States adopt a multisectoral, multi-stakeholder coordinated approach to manage zoonotic diseases and events.

The key elements of this focus area are:

- Surveillance information are shared with all relevant stakeholders for detection, risk assessment and response.
- Coordinated response to zoonotic diseases and events is ensured.
- Risk reduction strategies are developed and effectiveness is evaluated.
- Guidelines are established and policy documents are informed by research.

Strategic actions

Share surveillance information with all relevant stakeholders for detection, risk assessment and response

- Share multisectoral and multi-stakeholder surveillance data for early warning of and response to emergent zoonoses (refer to the surveillance, risk assessment and response focus area).
- Improve risk assessment capacity.

Ensure coordinated response to zoonotic diseases and events

- Establish a systematic coordination mechanism using the One Health approach (refer to the PHEP focus area).
- Invest in workforce development in human and animal health sectors.
- Evaluate the effectiveness of multisectoral communication, coordination and information-sharing (refer to the M&E focus area).
- Ensure multisectoral information exchange and joint participation in RRTs to investigate zoonotic disease outbreaks (refer to the surveillance, risk assessment and response focus area).

Develop risk reduction strategies and evaluate effectiveness

- Develop and establish risk reduction strategies across sectors.
- Enhance and evaluate communication.

Establish guidelines and policy documents informed by research

- Develop or update evidence-based guidelines and policy documents.
- Enhance understanding of zoonotic diseases through support of priority research areas.

Focus area 5: Prevention through health care

A well-functioning health system is a prerequisite for preventing and responding to outbreaks and public health emergencies. The 2015 evaluation of APSED (2010) 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.

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. Inadequate IPC practices have resulted in widespread nosocomial transmission as demonstrated during the outbreaks of severe acute respiratory syndrome (SARS), Ebola virus disease and MERS. Infection and even death among staff have been well documented in such nosocomial outbreaks, and the detrimental effect on health-care workers has negatively impacted the delivery of health-care services and provision of surge capacity. To prevent history from repeating itself, there is a need to embed a culture of good IPC practices within health-care settings.

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 through a strategy of health system strengthening.

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.

Hospitals must remain safe, operational, accessible and functioning at maximum capacity and with the same infrastructure, before, during and after emergencies and disasters. Disruption of health services caused by damage to hospitals and inadequate preparedness to respond effectively are two major factors that can prevent people from receiving life-saving medical care and other essential health services at health facilities. The Western Pacific Regional Framework for Action for Disaster Risk Management for Health recommends that strategies be developed for the continuity of health service delivery and mechanisms for response and recovery operations as part of national emergency response and preparedness plans.

The safety and preparedness of hospitals and health facilities for all types of hazards must be strengthened through multisectoral coordination mechanisms for policy development and service delivery, and application of risk-informed approaches that can assist in identifying and prioritizing options likely to be most effective in reducing identified risks.

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 health facility plans should also be coordinated with the preparedness and response plans of other health-care facilities in order to use resources in the most efficient way during a large-scale public health event.

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.

The key elements of this focus area are:

- Relevant infrastructure is in place to underpin effective IPC practices 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 is strengthened.
- The appropriate infrastructure, policies and procedures required to reduce the morbidity and mortality associated with AMR are established or revitalized.
- Comprehensive health facility plans for preparing for and responding to outbreaks and public health emergencies are developed and implemented.

Strategic actions

Ensure relevant infrastructure is in place to underpin effective IPC practices

- Establish and/or strengthen organizational structure of national IPC programmes to ensure that IPC is an integral part of the 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 training.
- 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 mechanisms for mobilizing IPC experts, as members of RRTs, for public health emergency response nationally or internationally.
- Conduct rapid investigations of disease clusters, infections associated with health care, and AMR in health-care facilities.
- Develop and strengthen surveillance and reporting on infections associated with health care.
- Support innovation and operational and applied research to improve evidence-based IPC practices.

Rapidly identify, report and manage EIDs to minimize mortality and morbidity among patients, visitors, health-care workers and the community

- Establish strong links between POE, public and private health-care facilities and public health systems in both human and animal settings to facilitate rapid reporting of events.
- Ensure that public health authorities are able to disseminate important information regarding outbreaks and public health emergencies .
- Ensure mechanisms are in place to facilitate communication and sharing of information among clinicians.

- Develop and enhance mechanisms to rapidly mobilize clinical experts to support response to outbreaks and public health emergencies.
- Strengthen routine clinical management practices for priority infectious diseases in all health-care settings as part of health system strengthening.
- Coordinate with health systems to ensure that there are sufficient and appropriately trained and certified doctors, nurses and other health-care professionals.

Establish or revitalize infrastructure, policies and procedures required to reduce morbidity and mortality associated with AMR

- Develop and implement AMR national action plans.
- Establish or enhance AMR surveillance in public and, where possible, private health-care facilities.
- Improve access to, and use of, AMR surveillance data, including alerts on the identification of newly emerging resistance patterns.
- Support generic laboratory techniques that contribute to antimicrobial susceptibility testing with protocols and procedures in place for referral testing of new or unusual resistance patterns (refer to the laboratories focus area).
- Establish infrastructure, policies and procedures, as part of health systems strengthening, to support compliance with national AMR guidance.
- Develop and improve, as part of health system strengthening, professional training and education on the adverse impacts of and ways of preventing AMR.
- Develop and improve community engagement materials to increase understanding of the adverse impacts of 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 organisms.

Develop and implement comprehensive health facility plans for preparing for and responding to outbreaks and public health emergencies

- Develop national guidance and training materials on health-care facility safety, preparedness and response planning.
- Ensure health-care worker safety through vaccination, access to appropriately equipped facilities and adequate supply of PPE , waste management, access to post-exposure prophylaxis and appropriate training.
- Ensure facilities have appropriate emergency preparedness plans in place, utilizing business continuity planning and safe hospitals guidance.
- Strengthen national coordination and management of health-care delivery during outbreaks and public health emergencies to address surge capacity requirements.

- 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 administrative levels on a regular basis.
- As part of health systems strengthening, ensure all health facilities have in place infrastructure, policies and procedures that are consistent with the WHO Safe Hospitals Initiative, including safe water supply, sanitation and clinical waste management.

Focus area 6: Risk communication

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) behaviour 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 is 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 communication 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.

Expected outcome

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

The key elements of this focus area are:

- Risk communication is a core element of prevention, public health preparedness, response and recovery from public health emergencies.
- Operational links between risk communication, surveillance and risk assessment across all sectors are strengthened, and risk communication is incorporated in all phases of the risk management cycle.
- A mechanism to listen to and engage with all groups within communities is established, and risk perception assessment is integrated 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.

Strategic actions

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

- Embed risk communication in the preparedness plans and response systems of ministries of health.
- Maintain and strengthen basic elements of the risk communication system as mandated by the IHR (2005).
- Ensure continuous skills development and enhancement for risk communication.

Strengthen operational links between risk communication, surveillance and risk assessment

- Strengthen operational mechanisms between risk communication and surveillance teams for risk assessment (refer to the surveillance, risk assessment and response focus area).
- Test the operational mechanisms between risk communication and risk assessment through joint exercises and/or application to real-life events..

Establish a mechanism for dynamic listening and community engagement and integrate risk perception assessment into risk assessment procedures

- Establish a culture of routine reciprocal engagement with the public, civil society and media 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 assesses the effectiveness of risk communication and community engagement approaches for behaviour change (refer to the M&E focus area).

Enhance use of new media, including social media and social networks, for risk communication

- Enhance capacity to use new technologies, including new media, in risk communication.
- Routinely assess and improve the use of new media for public communication, proactive listening and rumour management.

Formalize a mechanism that routinely assesses the effectiveness of risk communication

- Develop a framework for routine evaluation of risk communication interventions.
- Develop a mechanism to share lessons and experience in risk communication (refer to the M&E focus area).
- Regularly test national arrangements and systems for risk communication.

Focus area 7: Regional preparedness, alert and response

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 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 networks and associations 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 manage health security threats collectively.

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 risk assessment. WHO leadership in this area is important for the development of new guidance, tools and training.

Expected outcome

The regional preparedness, alert and response 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 is strengthened.
- A regional operational hub for preparedness planning and coordinated response to public health events and emergencies is functional.
- A regional rapid response mechanism that can be used to deploy experts and teams at short notice is in place.
- An information-sharing platform that utilizes available and innovative technology to enhance knowledge development, exchange and transfer is enhanced.
- A regional learning hub is used to develop a skilled workforce through on-the-job training and learning by doing.

Strategic actions

Develop or strengthen regional risk assessment system

- Develop and disseminate generic standard operating procedures 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.
- Conduct regional surveillance, risk assessment and response as part of the global system for public health events under the WHO Health Emergencies Programme.

Ensure that a regional operational hub for coordinated planning and response is functional

- 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 Member State EOCs, regional EOCs, the WHO headquarters EOC 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.

Ensure that a regional rapid response mechanism is in place

- 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 centres, and establish functional partnerships or networks when required to strengthen preparedness and rapid response efforts.
- Evaluate rapid response mechanisms for public health emergency management.

Establish an information-sharing platform that utilizes available and 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 office websites, or in the *WHO Western Pacific Surveillance and Response Journal* or the *WHO South-East Asia Journal of Public Health*.

Develop a skilled workforce with the Regional Office as learning hub

- 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.

Focus area 8: Monitoring and evaluation

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. Since 2010, M&E that promotes accountability and learning has been one of the eight focus areas of APSED. It was aligned with the *IHR Core Capacity Monitoring Framework and incorporated in the IHR Monitoring Questionnaire*.

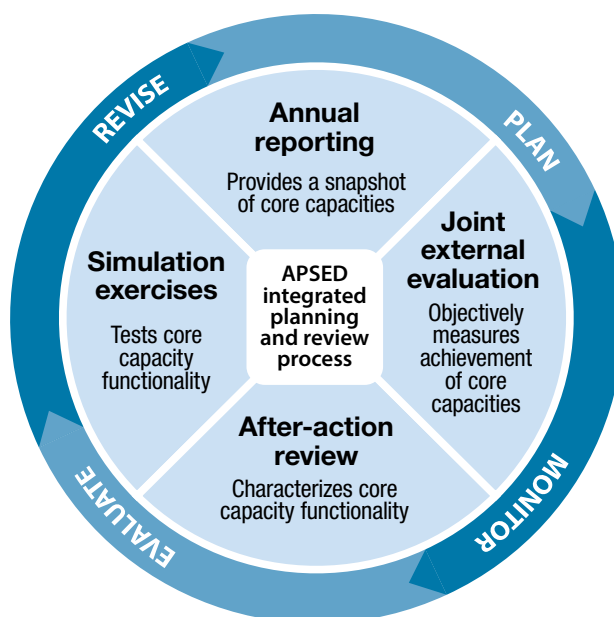
In the past decade, many Member States have made solid progress in the adoption of national planning and M&E systems. Assessments of real-world functionality, including outbreak reviews and WHO-led simulation exercises such as the Western Pacific Region's IHR Exercise Crystal, have gained traction. National and regional planning and review processes including annual meetings of the Technical Advisory Group (TAG) on the Asia Pacific Strategy for Emerging Diseases (APSED TAG) 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 MEF 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 (2005) 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.

APSED III M&E is targeted at national and 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 M&E cycle as a model for learning and continuous improvement



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 of 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, simulation exercises and JEE.

Strategic actions

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

- Establish and/or maintain an IHR NFP 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 JEE.

Measure system functionality

- Use both quantitative and qualitative M&E methods to measure system functionality, including joint evaluation exercises, after-action reviews and simulation 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, simulation exercises and 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.



Chapter 3



APSED in the Pacific

3. APSED in the Pacific

The Pacific region includes 21 countries and areas¹ 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 idea 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 territories 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 (2005) 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 logistical 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.

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 are in place for early technical assistance and surge capacity in the event of a cross-border threat or disaster.

Pacific priority actions

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

- Continue human resources 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, while 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 (2005) 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.

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 (2005) 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:

Align 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.

Address human resources 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, postgraduate 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.

Explore 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 include 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 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 taking context into consideration

- 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.

Ensure APSED III M&E is linked to existing monitoring frameworks

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



Chapter 4



**Connecting with other
strategies and initiatives**

4. 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 them. This wider context includes more hazard-specific guidance, including those categories shown in Fig. 7. Sitting alongside the overall APSED framework, the wider context supports 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 systems strengthening and to help progress social and economic development respectively.

Specific hazards

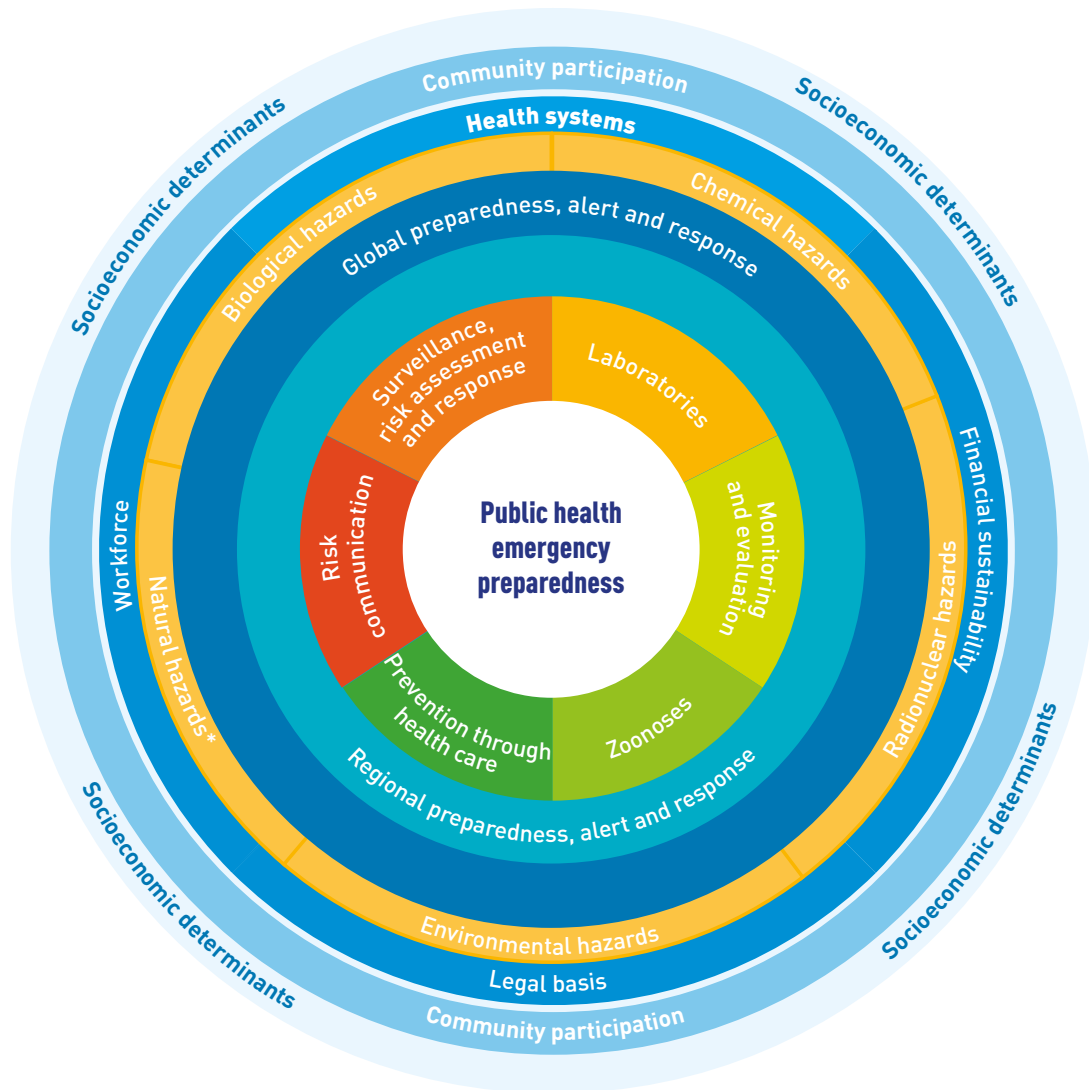
APSED III provides an overarching generic framework for PHEP and health security that can be applied to all hazards. There are specific manuals, frameworks and initiatives that address many of these hazards in more detail

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

Fig. 7. Positioning APSED in the broader context of global health



* This includes geological and hydro-meteorological hazards.

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 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 *Regional Framework for*

Action on Food Safety in the Western Pacific and the *Regional Food Safety Strategy* in South-East Asia 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 INFOSAN emergency contact points on food safety events that fall under IHR (2005).

Global Health Security Agenda

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 (2005) 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 to advance IHR for health security. 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 Framework), 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 the PIP Framework is to improve pandemic influenza preparedness and response and to strengthen protection against pandemic influenza by improving and strengthening the WHO Global Influenza Surveillance and Response System, with the key goals of:

- 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, laboratory strengthening and laboratory networks, and M&E.

Influenza remains a priority infectious hazard and influenza surveillance and response is an APSED III priority.

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 the 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 III 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, logistics materials and medical supplies.

Arboviral diseases

APSED III is aligned with the strategic objectives of the *Western Pacific Regional Action Plan for Dengue Prevention and Control (2016)*. 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.

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 and emergencies. 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.

Natural hazards

Globally, the *Sendai Framework for Disaster Risk Reduction 2015–2030* provides a mechanism for country-led multisectoral response to health crises, 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 with 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 multisectoral response.

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.

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 system 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 systems strengthening.

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. Implementing APSED III is a regional priority under the WHO Health Emergencies Programme.

Global Strategic Plan for IHR implementation

The report of the Review Committee on the Role of the International Health Regulations (2005) 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 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.

Links to broader initiatives and frameworks

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 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 target 3.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 3 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 target 3.d is particularly relevant to APSED III, APSED III also contributes to many other SDGs 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-system, 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.

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. 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.

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* 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 is to “strengthen 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.

Socioeconomic determinants

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, of 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 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.



Chapter 5



Implementing the strategy

5. Implementing the strategy

APSED is a well-established biregional strategy that has served the Asia Pacific region for over a decade. It supports the implementation of IHR (2005) core capacities, and has resulted in several notable achievements, a number of which have already been highlighted in this document. The 2015 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 (2005) 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 the 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.

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.

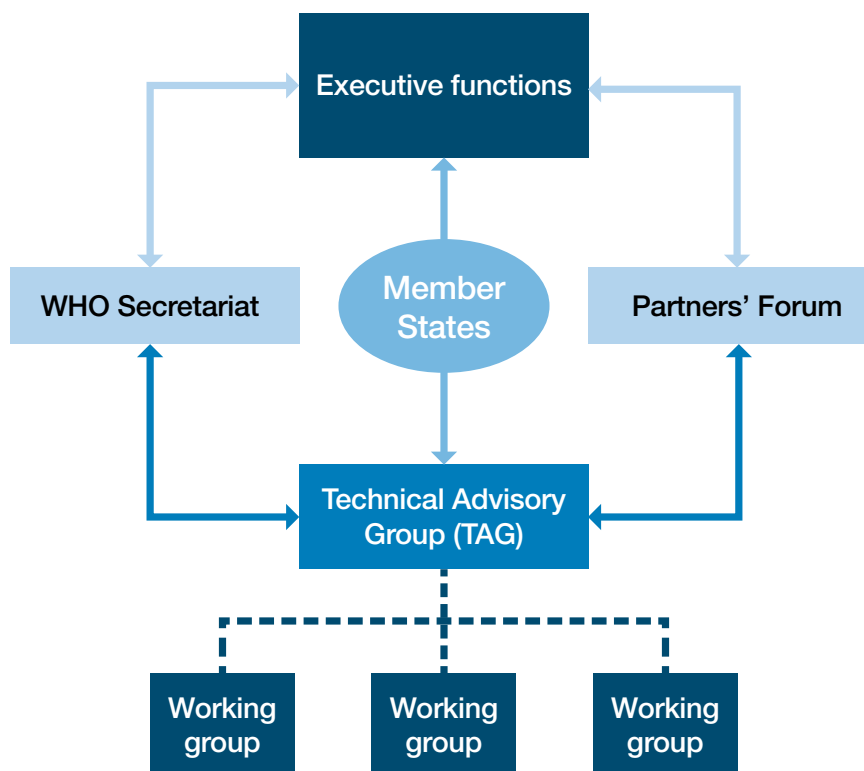
Regional-level mechanisms

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

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 support for activity implementation through progress reports. Following the APSED TAG meeting in June 2016, endorsement for APSED III was sought from the regional committees in 2016.

Fig. 8. Model for regional coordination and management for APSED III



Technical Advisory Group

The APSED TAG established and utilized for APSED (2005) and APSED (2010) will continue to serve as a biregional 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 biregional meetings and separate meetings for the South-East Asia Region and the Western Pacific Region. This meeting serves as a regional platform to foster and coordinate partnership on health security.

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 are a forum for enhancing harmonized partner coordination and collaboration. It is proposed that these partners' forums will continue to facilitate aligning and harmonizing partner support with APSED for health security, thus contributing to efficient use of resources.

WHO role

Through its country offices, regional offices and headquarters, WHO will work with Member States and partners in the following ways:

- providing 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;
- bringing Member States together with regional and international partners to forge partnerships and collective efforts; and
- supporting national governments to collaborate actively with each other, including providing surge capacity in public health emergencies and technical cooperation with resource-limited countries.

WHO collaborating centres have a role in supporting WHO to implement APSED III.

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;
- 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; and
- monitoring the health situation and assessing health trends.

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

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

Regional offices are hubs for information sharing, 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; coordinating the activities of WHO collaborating centres; monitoring programme delivery; and coordinating and supporting the voluntary independent assessment of country core capacities. The regional offices also provide 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 offices build, develop and operate partnerships as a means of supporting country

offices in their efforts to raise much-needed resources, and generate and disseminate 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.

Financing and sustainability

Ensuring regional PHEP and response requires sustainable financial investment from 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. States 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 resource-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 GHSA or by the Asian Development Bank and/or 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 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.



Glossary, bibliography and appendix

Glossary

Term	Definition and description
Accountability	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. (<i>Health and human rights, 2015</i> and <i>Innov8: Leaving no-one behind, in preparation</i>).
Asia Pacific region	The Asia Pacific region comprises the 48 countries, territories and areas of two regions of the World Health Organization – the South-East Asia Region and the Western Pacific Region. (<i>APSED, 2010</i>)
Behaviour change communications	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. (<i>APSED, 2010</i>)
Climate change	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. (<i>Adopted by the United Nations Framework Convention on Climate Change, 1992</i>)
Emergency operations centre (EOC)	A 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. (<i>WHO Framework for a Public Health Emergency Operations Centre, 2015</i>)
Equity	The absence of avoidable, unfair or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically or by other social stratifiers. "Health equity" implies that ideally everyone should have a fair opportunity to attain their full health potential. (<i>Equity, 2016</i>)
Emerging diseases	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 "emerging diseases" is used interchangeably with emerging infectious diseases (EIDs). (<i>APSED, 2010</i>)

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). (<i>A guide to establishing event-based surveillance</i> , 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. (<i>Adapted from APSED, 2010</i>)
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. (<i>Gender mainstreaming for health managers: a practical approach</i> , 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. (<i>UNISDR terminology</i> , 2009)
Health-care worker	All people engaged in the promotion, protection or improvement of the health of the population. (<i>World Health Report</i> , 2006)
Health emergency communications	Quick and accurate dissemination of information during a public health event or crisis. (<i>APSED, 2010</i>)
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. (<i>Health and human rights</i> , 2015)
Indicator-based surveillance (IBS)	The systematic collection and analysis of timely and reliable data on priority diseases, syndromes and conditions from formal sources. (<i>APSED, 2010</i>)
Incident management system (IMS)	An emergency management structure and set of protocols that provides an approach for 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. (<i>Framework for a public health emergency operations centre</i> , 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. (<i>Third Workshop on Field Epidemiology Training Programmes: Opportunities to Strengthen International Collaboration, Workshop Report, WHO 2011</i>)
Monitoring and Evaluation (M&E)	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. (<i>APSED, 2010</i>)
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). (<i>IHR, 2005</i>)
Non-discrimination	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. (<i>Health and human rights, 2015</i>)
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. (<i>Tripartite partnership of FAO, WHO, and OIE highlights the importance for strengthened work at the human–animal–ecosystem interface, 2013</i>)
Operation communications	Timely exchange of information among public health authorities and with decision-makers to ensure a smooth chain of command and coordination. (<i>APSED, 2010</i>)

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. (<i>UN Committee on Economic, Social and Cultural Rights</i> , 2000 and <i>UN statement of common understanding on human rights-based approaches to development cooperation and programming</i> , 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. (<i>APSED</i> , 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. (<i>IHR</i> , 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. (<i>IHR</i> , 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. (<i>APSED</i> , 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. (<i>Adapted from APSED</i> , 2010)

Risk	The likelihood of the occurrence and the likely magnitude of the consequences of an adverse event during a specified period. (<i>Rapid risk assessment of acute public health events, 2012</i>)
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. (<i>Adapted from APSED, 2010</i>)
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 behaviour change and the maintenance of trust. (<i>Adapted from APSED, 2010</i>)
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. (<i>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</i>)
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. (<i>Closing the gaps, 2008</i>)
Sustainable Development Goals (SDGs)	These 17 interlinked, integrated and indivisible Sustainable Development Goals were adopted by United Nations 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.
Universal health coverage (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. (<i>Universal health coverage: moving towards better health. Action framework for the Western Pacific, 2016</i>)
WHO South-East Asia Journal of Public Health (SEAJPH)	A peer-reviewed, open-access biannual journal of the WHO South-East Asia Region.

**Western Pacific
Surveillance and
Response Journal
(WPSAR)**

A peer-reviewed, open access journal on the surveillance of and response to public health events in the WHO Western Pacific Region.

Zoonoses

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

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Annex. 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 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.

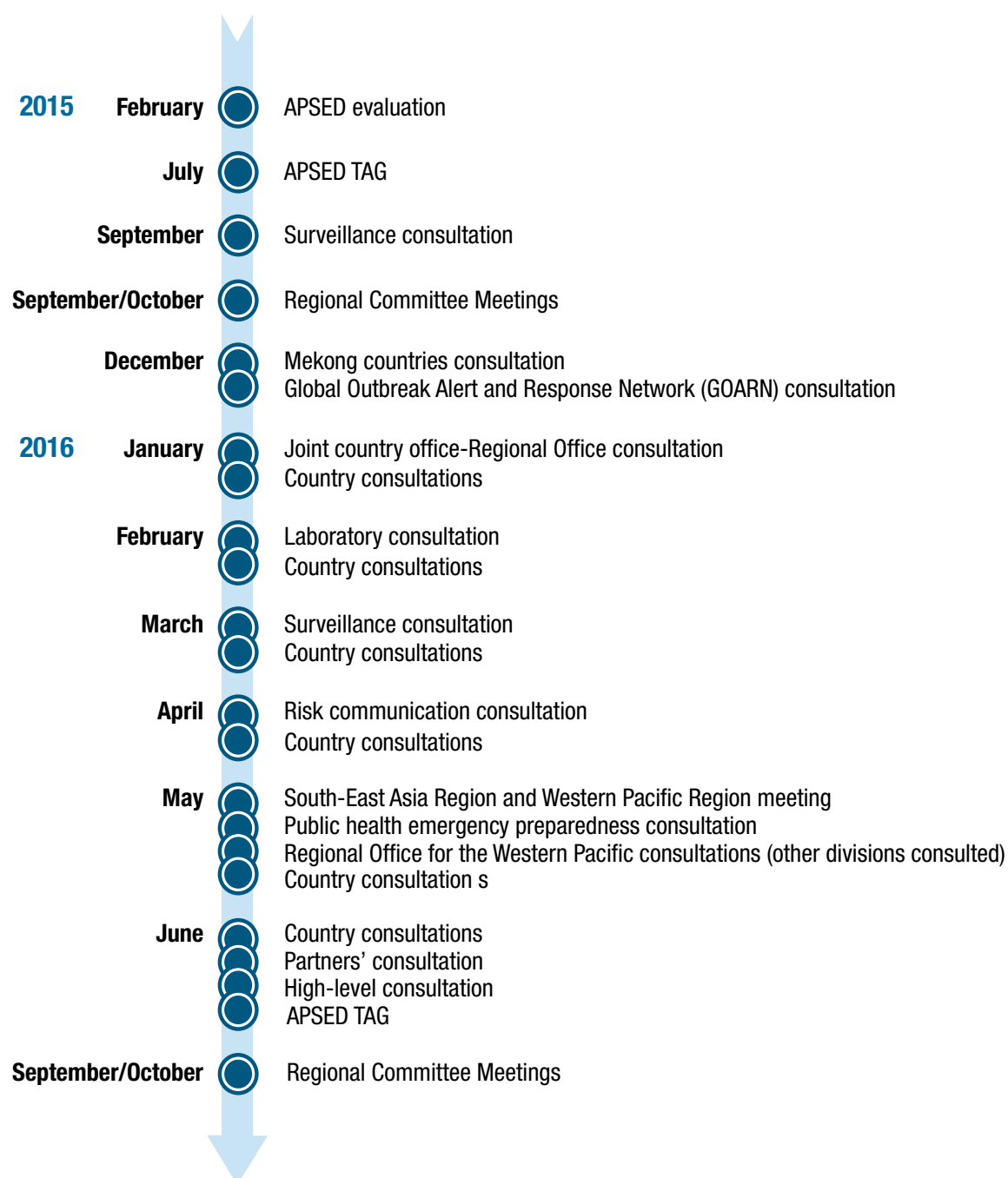
Informal consultations were conducted from September 2015 to May 2016. Participants included WHO country office team leaders, technical experts and key stakeholders. These meetings aimed to gain an overall perspective on progress, lessons learnt and future directions for APSED. The final consultation 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





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