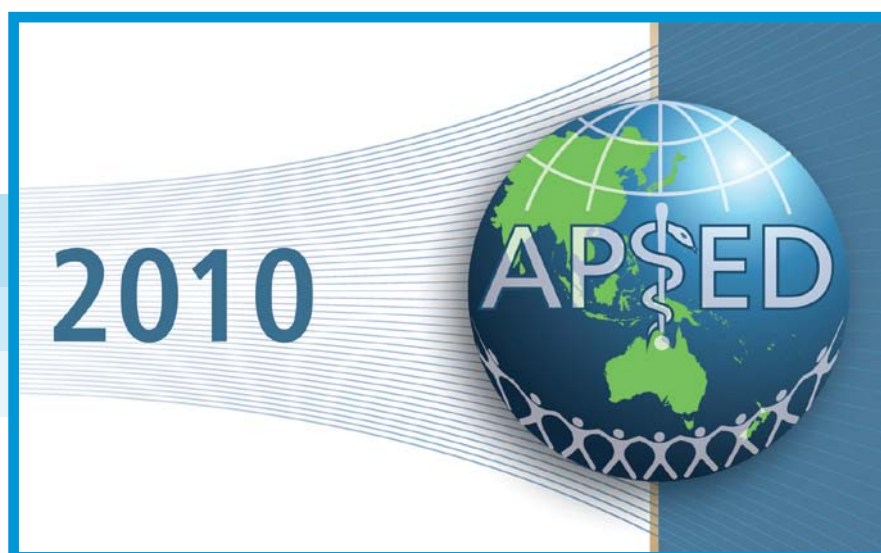


# Meeting Report

## Second Meeting of the Asia Pacific Technical Advisory Group on the Asia Pacific Strategy for Emerging Diseases (2010)



10–12 July 2012  
Manila, Philippines

REPORT

SECOND MEETING OF THE ASIA PACIFIC TECHNICAL ADVISORY GROUP ON  
THE ASIA PACIFIC STRATEGY FOR EMERGING DISEASES (2010)

10–12 July 2012  
Manila, Philippines

Convened by:

WORLD HEALTH ORGANIZATION  
REGIONAL OFFICE FOR THE WESTERN PACIFIC

Not for sale

Printed and distributed by:

World Health Organization  
Regional Office for the Western Pacific  
Manila, Philippines

November 2012

## NOTE

The views expressed in the report are those of the participants in the Second Meeting of the Asia Pacific Technical Advisory Group on the Asia Pacific Strategy for Emerging Diseases (2010) in the Western Pacific Region and do not necessarily reflect the policies of the Organization.

This report has been prepared by the World Health Organization Regional Office for the Western Pacific for governments of Member States in the Region and for those who participated in the Second Meeting of the Asia Pacific Technical Advisory Group on the Asia Pacific Strategy for Emerging Diseases (2010) which was held in Manila, Philippines, from 10 to 12 July 2012.

## SUMMARY

The Second Meeting of the Asia Pacific Technical Advisory Group on the Asia Pacific Strategy for Emerging Diseases (2010) was held in Manila, Philippines, from 10 to 12 July 2012.

The objectives of the meeting were to:

- (1) review the status of the implementation of the International Health Regulations (2005), known as IHR (2005), and the *Asia Pacific Strategy for Emerging Diseases (2010)*, known as APSED (2010), including national progress towards fulfilling the IHR (2005) core capacity requirements under the APSED framework;
- (2) review the national APSED (2010) workplans of Member States, including but not limited to those requesting an IHR extension until 2014 so that they can establish all the IHR core capacities; and
- (3) recommend common priority activities to be carried out in the coming year until the next Technical Advisory Group (TAG) meeting in 2013.

IHR (2005) has been in force since 15 June 2007, ensuring that national, regional and international capacities are in place to manage public health events and emergencies in a collective, coordinated and effective manner. IHR (2005) required each State Party to meet core capacity requirements by 15 June 2012, with an extension mechanism available for countries that needed additional time to meet the requirements.

In the Western Pacific Region, APSED (2010) serves as a key regional tool to help countries meet their IHR core capacity requirements. The original Strategy was developed in 2005, and an updated version, APSED (2010), was endorsed by the Regional Committee for the Western Pacific at its sixty-first session in October 2010. While maintaining the focus on emerging diseases, APSED (2010) addresses developing capacities to detect and respond to a broader range of acute public health events as required under IHR (2005).

The meeting reviewed the progress made and major challenges encountered by countries in developing and maintaining the IHR core capacities using the APSED (2010) framework. The outcomes of the global IHR monitoring questionnaire in 2011 showed good overall progress in the Region. Despite the achievements, 14 countries in the Region requested two-year extensions to the June 2012 deadline.

It was reiterated that the effective implementation of national workplans is crucial for successful development and maintenance of core capacities. Workplan implementation requires sustainable national investment, as well as technical and financial support from external sources. Member States, WHO and development partners promote the need for more predictable financial resources and improved resource mobilization through greater high-level advocacy and collaboration in the Region in order to ensure effective implementation of national workplans.

Prioritization of national action is essential. The priority technical areas for further national and regional capacity strengthening in 2012–2013 include strengthening of monitoring and evaluation systems, upgrading regional and national surveillance and laboratory systems, enhancing health emergency communications, and improving public health emergency

preparedness. Strengthening operational links and intersectoral collaboration among technical programmes and government ministries is also vital to success.

## TABLE OF CONTENTS

Page

SUMMARY .....	i
1. INTRODUCTION.....	1
1.1 <u>Objectives</u> .....	1
1.2 <u>Opening remarks</u> .....	1
2. PROCEEDINGS .....	2
2.1 Plenary 1 — International Health Regulations (2005) implementation status .....	2
2.2 Plenary 2 — National workplan development and implementation.....	5
2.3 Plenary 3 — Enhancing surveillance system.....	10
2.4 Plenary 4 — Public health emergency preparedness.....	13
2.5 Plenary 5 — Group feedback from breakout sessions.....	15
2.6 Plenary 6 — Risk communications .....	20
2.7 Plenary 7 — Regional surveillance, alert and response.....	21
2.9 Closing remarks.....	24
3. CONCLUSIONS AND RECOMMENDATIONS.....	24
3.1 <u>Conclusions</u> .....	24
3.2 <u>Recommendations</u> .....	25

### ANNEXES:

ANNEX 1 — PROGRAMME OF ACTIVITIES

ANNEX 2 — LIST OF PARTICIPANTS

### Keywords

Communicable disease, Emerging – prevention and control / Disease outbreaks – prevention and control / Regional health planning / Asia and the Pacific
--

## 1. INTRODUCTION

The Second Meeting of the Asia Pacific Technical Advisory Group (TAG) on the *Asia Pacific Strategy for Emerging Diseases* (2010), known as APSED (2010), was held in Manila, Philippines, from 10 to 12 July 2012.

The TAG has been the key mechanism to provide technical advice on the implementation of APSED. Based on the recommendations made at the First Meeting of the Asia Pacific Technical Advisory Group on APSED (2010) in July 2011, Member States have developed and implemented their national workplans for managing emerging infectious diseases (EID) and public health emergencies (PHE) in line with APSED (2010) and the International Health Regulations (2005), or IHR (2005).

Under IHR (2005), countries were obliged to meet all national core capacity requirements by June 2012; if this was not possible, a two-year extension could be requested. While most Member States in the Western Pacific Region have made significant progress towards meeting the core capacity requirements, most resource-limited countries requested an extension. The national workplans developed under APSED (2010) serve as a road map for countries to meet their IHR requirements, enable national capacity beyond international obligations, and ultimately ensure public health security.

The meeting reviewed the current status of IHR and APSED implementation in the Western Pacific Region and the national workplans developed by Member States. The meeting made recommendations for further enhancing implementation of the national workplans, including priorities for the coming 12 months.

### 1.1 Objectives

The objectives of the meeting were to:

- (1) review the status of IHR (2005)/APSED (2010) implementation, including the national progress towards fulfilling IHR core capacity requirements that fall under the APSED framework;
- (2) to review the national APSED (2010) workplans of Member States in establishing all IHR core capacities including, but not limited to, those requesting an IHR extension until 2014; and
- (3) recommend common priority activities to be conducted in the coming year until the next TAG meeting in 2013.

### 1.2 Opening remarks

Dr Han Tieru, Director, Division of Building Healthy Cities and Populations, welcomed participants to the meeting on behalf of Dr Shin Young-soo, WHO Regional Director for the Western Pacific.

It is acknowledged that 2012 is a critical year for the Region. The deadline for Member States in the Region to meet their commitment under the IHR (2005) to ensure that the minimum national core public health capacities are present and functioning was 15 June 2012. Despite the

Region's overall good progress rating on this front, 15 Member States requested two-year extensions to meet the requirements of IHR (2005). Action needs to be taken as a Region to ensure these countries have the minimum national core public health capacities in place and functioning by the extension deadline of June 2014, while at the same time sustaining the capacity-building momentum in countries that did not request an extension.

The Western Pacific Region continues to face various health security threats arising from emerging diseases, food safety incidents, emergencies and natural disasters. Continuing efforts are called for to improve the Region's capacities and build preparedness for the next public health emergency. The five-year regional strategic framework, APSED (2010), serves as a tool to meet these challenges. It helps Member States build and maintain capacities and ensures that the Region is better prepared to respond not only to emerging diseases but also to other public health emergencies.

The past year has been the first year of implementation of the APSED (2010) workplan. The critical milestones to be reviewed at the meeting include strengthening of monitoring and evaluation systems, upgrading regional and national surveillance and laboratory systems, enhancing risk communication approaches, developing national public health emergency preparedness and response plans, and establishing emergency operations centres (EOCs) within ministries of health. It is hoped the meeting will guide the Region in identifying collective actions for enhancing regional health security in the future.

### 1.3 Organization of the meeting

The meeting was comprised of a series of presentations updating participants on selected country-level experiences of progress of implementing IHR (2005) and APSED (2010). A draft APSED (2010) Progress Report, covering the period of January 2011–June 2012, was provided, along with the other background materials, such as the APSED (2010) Workplan, IHR regional summaries, and resolutions and reports from the Sixty-fifth World Health Assembly.

A plenary discussion was held on national workplan development and implementation under monitoring and evaluation. Group breakout sessions, with approximately 15 participants, were conducted to discuss indicator-based surveillance (IBS), the establishment of emergency operations centres within ministries of health, and the effective utilization of the Event Information Site (EIS) and IHR monitoring tool by the IHR National Focal Points (NFPs). A Partners Forum was held as a parallel session to explore the strategic approach to resource mobilization, discuss the partner coordination at the country level and report on WHO's financial accountability. Detailed feedback from the group work was presented and discussed in plenary sessions (see Annex 1 for the Programme of Activities and Annex 2 for a List of Meeting Participants).

Dr Jeffery Cutter, Director, Communicable Diseases Division, Ministry of Health, Singapore, who is also a TAG member, was appointed overall Chairperson for the meeting. Each plenary session was chaired by TAG members: Plenary 1 by Dr Cutter, Plenary 2 by Graham Rady, Plenary 3 by Professor John Mackenzie, Plenary 4 by Peter Rzeszotarski, Plenary 5 by Dr Cutter, and Plenary 6 and 7 by Dr Kazunori Oishi.

## 2. PROCEEDINGS

### 2.1 Plenary 1 — International Health Regulations (2005) implementation status



Dr Jeffery Cutter, Ministry of Health, Singapore, and a TAG member, introduced the session.

#### 2.1.1 Global IHR (2005) status

*Dr Stella Chungong, WHO Headquarters, Geneva*

Following the coming into force of the IHR (2005) in June 2007, State Parties to the regulations were required to assess core national alert and response capacities, develop a plan of action to address gaps, and monitor and evaluate progress towards achieving these capacities. The status of IHR core capacity development is monitored by countries and WHO through a checklist of 20 indicators collected using an annual State Parties Questionnaire. This provides data on the status of implementation of eight core capacities, capacities at points of entry (POE) and capacities to detect and respond to IHR-relevant hazards (zoonotic, food safety, chemical, radiological and nuclear).

The IHR monitoring questionnaire captured data from 128 State Parties in 2010 (66 %) and 160 State Parties in 2011 (82%). Globally, there has been an improvement in all core capacities over time. Some core capacities and hazards remain weak, including legislation, human resource capacities, preparedness, capacities at points of entry, and chemical and radiological capacities. Countries report doing relatively well in coordination, surveillance, response, and the capacity to detect and respond to zoonotic events.

Some 70% of Western Pacific Region countries submitted IHR monitoring questionnaires in 2011, and at the time of the TAG meeting, 16 of 27 (59%) had submitted reports for 2012, the highest percentage received globally. Core capacities achieved in the Western Pacific Region reflect the global trends.

While State Parties should have developed and implemented plans of action to ensure that the core capacities required by the IHR are present and functioning by the deadline of 15 June 2012, many countries are facing challenges in fulfilling core capacity requirements and are in the process of requesting an extension. At the time of the TAG meeting, 106 countries globally have requested extensions, 32 have indicated that they did not require extensions, and 57 had not yet notified WHO on their extension status. For the Western Pacific Region, 14 countries had requested an extension, 12 had indicated that they would not be requesting an extension, and one country was yet to notify WHO of their status. It was highlighted that the two-year extension date applies from 15 June 2012, even if the country submits the extension request after June 2012, as the extension deadline is 15 June 2014. The list of countries that requested and received an extension is available on the Event Information Site (EIS) for IHR National Focal Points. A guidance document on extension was available on the WHO web site ([www.who.int/ihr](http://www.who.int/ihr)).

A resolution on IHR implementation was adopted at the Sixty-fifth World Health Assembly, calling for specific actions from State Parties and WHO. WHO is currently following up on implementing the actions requested in the resolution.

#### 2.1.2 Regional IHR (2005) status

*Dr Li Ailan, WHO Regional Office for the Western Pacific*

The geographical and socioeconomic diversity of the Western Pacific Region presents a great challenge in the successful implementation of IHR (2005). Collective efforts, supported by strong commitments by Member States, are essential. IHR (2005) provided a global framework, while its Annex 1 articulates the functional requirements for Member States to meet in order to detect, assess, report and respond to acute public health events. APSED (2005) was first developed to guide Member States in achieving these core capacities within the regional context, with particular focus on the development of capacities for managing emerging infectious diseases (EIDs) based on the Region's earlier experience gained from responding to SARS and the pandemic preparedness required for influenza H5N1. Through its revision in 2010, APSED has served Member States of the Western Pacific Region as a key regional tool for meeting and maintaining the IHR core capacity requirements, with strong emphasis on building generic core capacities to respond to all hazards. The national workplan of each Member State translates the framework (IHR) and strategy (APSED) into action.

IHR implementation in the Region has demonstrated the value of IHR in strengthening national and regional health security. Good progress has been made in building the IHR core capacities using APSED as a key regional tool, particularly in the areas of surveillance and response. The national stakeholder planning and review process established in countries has contributed to the development of national workplans and improved multisectoral collaboration and harmonization.

However, challenges remain. Fourteen countries in the Region have requested and have been granted an extension from the original 15 June 2012 deadline for fulfilling the IHR core capacity requirements. Effective implementation of national workplans requires sustainable technical and financial resources from both domestic and external sources, which can be only achieved through continued commitments by the national governments and assistance coordinated among WHO, development partners and donors. A tailored, flexible approach with a particular emphasis on strengthening subregional and regional collaboration is proposed for the Pacific island countries and areas that face unique national and local capacity-development challenges due to a combination of factors.

The Chairperson invited questions and comments:

- Quality assurance is important in maintaining consistency in the interpretation of questions in the IHR monitoring questionnaire. WHO facilitates a participatory and consensus-building process for completing questionnaires in countries through its country visits and active collaboration with the National IHR Focal Points. Such in-country processes provide an avenue for broader and improved multisectoral collaboration. Low capacity scores associated with a lack of core capacities for certain hazards, such as chemical and radiation emergencies, may be acceptable if the actual risks of such events are assessed to be low in a specific local context. However, countries are encouraged to ensure access to regional mechanisms for appropriate and timely assistance.
- The APSED (2010) workplan was finalized after the first TAG in July 2011 by incorporating comments from Member States and has guided regional-level budget development. It serves as a general guidance document and is not intended to be revised periodically. Annual progress reports from June to July will be disseminated to Member States prior to the annual TAG meetings. The regional deadline in June of each year for the submission of the IHR monitoring questionnaire should facilitate the timely sharing and analysis of data in annual progress reports.

- Current arrangements of organizing a separate stakeholder meeting for Pacific island countries and areas, mainly due to financial constraints, may be reviewed to prevent possible disconnection and separation within the Region.
- Good improvements have been made in the timely posting and sharing of information on the Event Information Site (EIS) accessed by NFPs, although news media has served as the initial and informal source of event information in many past cases. Limitations are acknowledged in sharing sensitive national security information on EIS. An improved protocol may help in maximizing the use of event information for public health purposes.
- Development of a costing tool has been a challenge given the diversity in country profiles and the capacities required by IHR (2005). The national workplans submitted by countries that requested an extension should be accompanied by reasonable estimates of costs of implementing the plans.
- Detailed analysis of workplans allows for the identification of gaps and priority areas requiring technical and financial assistance. Country ownership is called for in the process of securing financial resources for implementing the national workplans, while WHO, donors and partners should enhance technical and financial assistance through high-level advocacy and greater coordination.

## 2.2 Plenary 2 — National workplan development and implementation

The session Chairperson, Graham Rady, Temporary Adviser, WHO Regional Office for the Western Pacific, introduced the session.

### 2.2.1 Asia Pacific Strategy for Emerging Diseases (2010) Progress

*Dr Gabit Ismailov, WHO Regional Office for the Western Pacific*

The session presented the overall technical progress of APSED (2010) implementation in the Western Pacific Region from January 2011 to June 2012. The presentation focused on key achievements and accountability supported by highlights of selected activities. The objectives of APSED (2010) monitoring and evaluation, including presentation of challenges, lessons learnt and steps forward, were purposefully omitted as they would be covered in in-depth discussions during the later plenary sessions and group discussions.

Technical progress and key achievements were presented by APSED (2010) focus areas against milestones of the APSED (2010) workplan endorsed by APSED TAG meeting in July 2011, as well as 2011 TAG recommendations. Special attention was paid to documenting results in mainstreaming gender in APSED (2010) implementation.

### 2.2.2 Establishing an integrated national and regional planning and review process

*Dr Chin Kei Lee, WHO Regional Office for the Western Pacific*

Monitoring and evaluation (M&E), as a new focus area of APSED (2010), are represented by an integrated national and regional planning and review process, which promotes greater accountability in programme management, ownership by countries and closer linkages to capacity-building. The main objectives of this process is to foster working relationships through active engagement of implementers, promotion of the prioritization of resources, the facilitation of harmonization of various activities, and the improvement of coordinated and collective efforts of countries and partners/donors for regional health security.

APSED (2010) M&E is supported by tools such as national workplans, the IHR monitoring tool/questionnaire, six supplementary APSED (2010) performance indicators, and annual progress reports. It is recommended that national workplans on EID and public health emergencies (PHEs) of countries build on past achievements and lessons learnt, with particular focus on prioritization

of activities that enhance core capacities that contribute to the preparedness and response of all hazards over the long term. They also need to remain flexible to reflect new developments necessitated by ever-changing environments. The proliferation of workplans (e.g. project-based short-term workplans) should be discouraged. One national plan serves not only as an overarching plan to guide overall strategic direction, prioritization of activities, harmonization of M&E requirements, and implementation of IHR core capacity development, but also as the basis for resource mobilization and coordinated donor support.

The Chairperson invited questions and comments:

- Shifting from project-driven to coordinated and harmonized M&E at the national level as per APSED (2010) needs to be supported by recommendations from regional forums, such as TAG meetings, for it to take effect within country health systems. Capacity-building for M&E focal points in Member States must be supported.
- More avenues need to be created to share lessons learnt and success stories in the Region, not only through the existing regional TAG mechanism but also through systematic dissemination of progress reports and publications. Early dissemination of the APSED Progress Report among the TAG members and participants allows for collective review, technical input and decisions on funding provision.
- The format of the APSED Progress Report should represent a balanced assessment of the current status and progress made by Member States and collectively as a Region. It is crucial for the report to reflect the requirements, accountability and the increased need for advocacy for resource mobilization to address any identified funding gaps.
- Prioritization is essential in planning, implementation and monitoring, both at the country and regional levels. The APSED (2010) Workplan as a guidance document is ambitious with its broad scope and focused priority. Resource mobilization must focus on addressing the identified priority areas.
- The preparedness capacity of the Region can be enhanced through the effective sharing of lessons learnt in responding to real outbreaks and other public health events. Such experience could also be reviewed from the public or political perception of the management of events. Periodic tabletop exercises should help Member States improve their preparedness.

### 2.2.3 Country experiences in national workplan development and implementation

The Lao People's Democratic Republic, Malaysia, Mongolia and the Philippines presented their key achievements in developing national core capacities over the past five years and their national planning and review processes that involve various stakeholders.

*The Lao People's Democratic Republic. Dr Bounlay Phommassack, Director General of Department of Communicable Diseases Control, Ministry of Health, Director of National Emerging Infectious Disease Coordination Office, Lao People's Democratic Republic.*

Steady progress has been made across all areas of EID over the past five years. A few examples of key achievements include establishing an early warning and alert network for surveillance and response; providing applied field epidemiology training, which has resulted in 23 graduates since 2009; establishing Rapid Response Teams at the district level; recognition in August 2010 of the National Centre for Laboratory and Epidemiology (NCLE) as the National Influenza Centre; developing the National Health Communications Policy and Health

Communication Strategy in 2011 and the operational Risk Communications Procedures during health emergency events in 2012; establishing the national structure for infection prevention and control (IPC), including the development of the IPC strategy for central and provincial levels; the standard operating procedures for IPC standards and additional precautions in 2012 and establishing a clinicians' working group; and the establishment of a national zoonosis coordination mechanism in 2012.

The National Workplan for EID and PHE (2011–2015) was developed in May 2011. This comprised new sections for One Health, public health emergency preparedness, and monitoring and evaluation. The national-level planning and review process advocated for the development of one national plan and harmonization of M&E requirements among different sectors and partners. The process was useful in developing ideas, sharing information and experience among stakeholders, and identifying various M&E requirements that exist across different programmes and partners. The major challenges identified through the process were limitations in advocacy for one national plan with competing priorities identified by different sectors; limited participation in the planning process by governmental partners and donor agencies; difficulty in gaining donor agreement on harmonization of M&E requirements; and identifying potential areas where data collection and reporting processes could be harmonized.

*Malaysia. Dr Husna Maizura Ahmad Mahir, Senior Principal Assistant Director, Surveillance Section, Disease Control Division, Ministry of Health, Malaysia.*

Malaysia has achieved the required minimum level of core capacities for IHR 2005 and did not request an extension. Malaysia has developed the national MySED 2012–2015 Workplan in alignment with the APSED 2010 Workplan. Several key achievements in the various focus areas for the past five years were highlighted. They include:

- Web-based notification of infectious diseases and public health events, risk assessment training, the establishment and training of Rapid Response Teams and Rapid Assessment Teams at all levels, and the training of field epidemiologists through the Epidemic Intelligence Programme (EIP).
- Accreditation of National Reference Laboratories and laboratories with resident pathologists based on international standards or national standards adapted from international standards. Training on laboratory biosafety and biosecurity was conducted at national, state and local levels.
- Zoonoses interagency meetings are held twice a year at national and state levels. Various activities have been conducted to strengthen the existing functional coordination mechanism, such as information sharing and the development of manuals, guidelines, coordinated responses to outbreak investigations, simulation exercises and research collaboration.
- A national infection prevention and control (IPC) strategy has been established which harmonizes available guidelines and checklists for usage in all types of health-care facilities.
- Focal points and teams for the risk communications focus area, particularly pertaining to health emergency communication in the Ministry of Health (MOH) in Malaysia, have identified the focal points and teams and have been established. The structures, mechanism and networking with relevant stakeholders have also been strengthened.

- With regard to public health emergency planning, the existing EOC within the MOH (also known as Crisis Preparedness & Response Centre, or CPRC) is being scaled up to encompass a multi-hazard approach for management and operations.

Mongolia. Dr Narangerel Dorj, Senior Officer, Communicable Diseases Control, Ministry of Health, Mongolia

Multi-agency coordination is in place for surveillance, risk assessment and response. National risk assessment tools and methods have been developed in 2012 to improve collaboration among surveillance, response, field epidemiology training programmes (FETP), risk communications and public health emergency preparedness. In 2011, the intersectoral coordination mechanism expanded its function, incorporating more work on food safety, emergency management and effects of climate change on zoonotic diseases. Multisectoral IHR coordination committee and technical advisory groups (public health, POE, M&E, clinical management) were established in 2011 and are now operational.

The IPC structure at all levels was approved, and an IPC coordinating committee, an infection control committee and an infection control team were established at all health facilities in 2010. A risk communications network was established in 2012. Risk communications and IHR NFPs are part of national health emergency command-and-control structure. Communications protocols on operational communications, clearance and public announcement, approved in 2011, are now being applied.

The first national EID plan for 2008–2010 was developed in consultation with various stakeholders from health and non-health sectors and international partners in 2008. An operational workplan for 2011 on EID has been implemented. The national plan on EID and PHE 2012–2015 was approved in 2012. The national planning and review system has been strengthened in 2011, and includes a national M&E framework with terms of reference for national M&E teams/focal points and checklists and indicators for each focus area and national M&E teams. As a result, the M&E capacity of staff, as well as multisectoral technical and strategic collaboration, has improved. Coordination of international partner funds through cost sharing and alignment of activities have also increased (the World Bank, the Swiss Agency for Development and Cooperation). The implementation of national plan on EIDs will eventually lead to core capacity-building. The foundation will be strong for a M&E system. The National Plan on EID and PHE 2012–2015 is an implementation framework and road map to achieve core capacities required by the IHR (2005).

Philippines. Dr Vito Roque, Medical Specialist IV and Surveillance Unit Head, Public Health Surveillance and Informatics Division, Department of Health, Philippines

Highlights of key achievements include: the establishment of the Philippine Interagency Committee on Zoonoses in April 2011; harmonization and integration of the existing laboratories into the National Reference Lab Network; improved reporting through the Philippine Integrated Disease Surveillance and Response and Event-Based Surveillance; accelerated risk communications efforts; development of the Public Health Emergency Contingency Plan (PHECP) at Points of Entry; and efforts to improve the National Infection Control Policy.

The national planning process was established by utilizing previously established networks of planning. Multisectoral stakeholders, who had participated actively before as members of National Disaster Risk Reduction Management Council, were invited to participate in the planning process in late 2011. The planning workshop was followed up by small meetings according to focus areas to fine-tune and refine the development of the national workplan.

The benefits of establishing this process are many. It served as an inventory for the country by APSED focus area; it identified indicators in the focus areas that required further improvements; and it emphasized that the country's EID efforts are aligned with the APSED focus areas. Key challenges included the difficulty in harmonizing and integrating priorities of the other sectors, resolving time conflicts among sectors, maintaining consistency across the working group members in approaches and instruments used, issuance of policies and securing funding for implementation. These challenges could be overcome by maintaining close relationships with the other key sectors, acknowledging the importance of involving relevant non-health sectors (e.g. finance), formulation and implementation of policies, practising feasible and practical fund outsourcing, and abolishment of "silo" working.

The Chairperson invited questions and comments:

- Important aspects of core capacity development in Member States include: ensuring sustainability in multisectoral engagement, financial resources and appropriately trained workforce; development of legal framework or formalization of systems to secure sustainable funding; creating incentives, such as capacity development opportunities for field staff engaged in activity implementation; and active engagement of the finance sector from the planning and implementation stages to mobilize government resources.
- Preparedness and scanning for potential threats require improved surveillance and both preparedness and response capacities at regional and country levels. The expanded scope of APSED (2010) highlights the importance of strengthening regional capacity for surveillance and risk assessment, information-sharing, preparedness and response.
- It is proposed that WHO should assist Member States in conducting more objective evaluations of their capacities in detecting and responding to public health threats. This should result in continuous improvement of capacities within and beyond the requirements of the IHR (2005).

#### 2.2.4 Plenary discussion on national workplan development and implementation

The discussion was facilitated by Graham Rady. Three guiding questions were provided, which are presented separately.

How can we better engage various national stakeholders (e.g. technical units, donors and technical partners) in the process of national workplan development and implementation?

- Mapping of stakeholders, including efforts to gain a good understanding of their agendas, strengths and motivations, contributes to successful and sustainable engagement.
- Strategic utilization of existing platforms or frameworks, rather than reinventing the wheel under different APSED focus areas, could be just as effective if accompanied by clear definitions of roles and close communication maintained through regular meetings.
- Irrespective of disease trends, competing national priorities and changing interests of funding agencies, there is a need for stronger and more sustainable efforts for high-

level advocacy to reach out to senior policy-makers and decision-makers of development partners. In addition to conventional information-sharing forums such as technical meetings, more flexible methods of stakeholder mobilization may be utilized.

- A mechanism to maintain momentum must be in place both domestically and externally. The annual sessions of the WHO Regional Committees, which are the regional governing bodies of the Organization, provide great opportunities for ministerial-level advocacy on IHR implementation.

What are the main challenges in implementing the national workplans?

- The inability of ministries of health to secure sustainable external funding sources may be overcome by creating their own funding sources (e.g. the tobacco tax in the Republic of Korea) or providing incentives or creating competition through improved grassroots-level participation in health systems.
- Gaining consensus on sustainability has been a challenge. Identifying factors that promote sustainability during national planning and implementation is crucial.
- M&E should be part of all health systems. Ambiguity about the intended audience for M&E leads to inadequate advocacy for mobilizing and sustaining the technical and financial resources required to develop and sustain core capacities.
- Advocacy would be more effective if linked to national interests. Political commitments from the highest level of government and business sector, as well as linking IHR capacity development to capacity development for overall national security and economic security, would provide stronger advocacy.

How can we ensure the effective implementation of national workplans?

- Greater prioritization promotes sustainability across all phases of planning and implementation of national workplans. While maximizing already available resources and creating savings through piggybacking with non-EID programmes or activities from different focus areas, ongoing efforts for resource mobilization are crucial for ensuring the continuity of workplan implementation.
- Alternative methods of mobilizing financial resources may include organizing major health-focused drives that could generate and sustain the inflow of resources (e.g. Stop TB); working with nontraditional partners or partners in non-health sectors; and exploring alternative funding sources, such as innovative taxation strategies; and donations from former aid recipient countries.

### 2.3 Plenary 3 — Enhancing surveillance system

The session Chairperson, Professor John MacKenzie, Premier's Research Fellow and Professor of Tropical Infectious Diseases, Division of Health Sciences, Curtin University, Australia, and a TAG member, introduced the session.

#### 2.3.1 Indicator-based surveillance

*Dr Jeffrey Partridge, WHO Regional Office for the Western Pacific*

The steps involved in developing regional IBS standards were presented. Defining the goal of the surveillance system is the first step, and this should be public health focused, not



focused on the treatment of patients. The other components of the system that need to be considered are the case definition; surveillance facilities (i.e. from which places the data will be collected); how cases will be selected and sampled; whether laboratory confirmation will be a requirement; data collection and analysis methods; and reporting mechanisms.

Sentinel surveillance, which is the systematic collection of data on a routine basis from a limited number of surveillance sites, can be the most efficient way to collect high-quality data in a timely way. It reduces the number of resources required as efforts can be focused on a limited number of carefully selected surveillance sites. However, the representativeness of the system need to be considered as not all cases of the disease will be counted. Within the sentinel surveillance system, systematic sampling for lab confirmation is recommended.

### 2.3.2 Roles of public health laboratories in surveillance and response

*Dr Frank Konings, WHO Regional Office for the Western Pacific*

The vision for laboratories under APSED (2010) is to strengthen public health laboratories and networks to improve laboratory capacity for routine surveillance activities and prepare laboratories for rapid response to disease outbreaks. The types of public health laboratories (subnational, national and international) and their functions were reviewed, and the interactions between the different kinds of laboratories, including confirmation testing, referral of specimens for advanced testing, external quality assurance programmes (EQAPs) and biosafety were explained. The WHO guidance document, *Public Health Laboratories for Alert and Response*, the result of three regional laboratory meetings and an important milestone for APSED (2010), was presented. The purpose of the guidance document is to define the role of a public health laboratory network and to provide guidance for its development. The advantages of establishing a subnational public health laboratory for routine sentinel surveillance and outbreak response included providing in-country surge capacity to reduce the burden on national reference laboratories and to increase the turnaround time of test results. EQAPs, as part of a laboratory network, improve accuracy of laboratory testing but also build technical capacity and networking. The Emerging Disease and Surveillance Response unit at the WHO Regional Office for the Western Pacific has been developing an EQAP for dengue virus, which will be expanded to other emerging infectious diseases. Lessons learnt from the EQAP for influenza and other diseases—shared through the Laboratory Working Group of the Regional Office for the Western Pacific—will be applied. The next steps for laboratories under APSED (2010) are the implementation of an integrated public health laboratory network. National laboratory steering committee will work to strengthen biosafety and quality assurance and establish an efficient specimen referral system from the subnational to national and international levels, as required.

### 2.3.3 Influenza surveillance: an example of IBS

*Dr Jeffrey Partridge, WHO Regional Office for the Western Pacific*

Historically, indicator-based surveillance for influenza has been good for global vaccine efforts, but of limited use for country-specific public health disease control programme development. Therefore, influenza surveillance systems should be able to provide country-specific data and baselines for programme planning, describe the epidemiology of seasonal influenza, and provide isolates for identification of viruses and monitoring of resistance.

Since the clinical picture of influenza infection is similar to other respiratory infections, the goal of influenza surveillance is to describe trends over time, not count every case of influenza-like illness (ILI) and/or severe acute respiratory infection (SARI). Therefore, sentinel surveillance is appropriate for influenza, with laboratory testing of selected cases to determine the circulating viruses. Data collection should be kept at a minimum and include only data needed for public health decision-making.

Therefore, the goal for influenza surveillance in the Region over the next five years is to continue strengthening national influenza surveillance systems to inform influenza prevention and control policies. All players need to be involved to define the epidemiology and burden of influenza and improve both the virological testing capacity and communications and reporting.

#### 2.3.4 Country experience — Cambodia

*Dr Ly Sovann, Deputy Director, Department of Communicable Disease Control,  
Ministry of Health, Cambodia*

Dr Ly Sovann introduced the laboratory-based sentinel surveillance network for ILI established in Cambodia in 2006. The purpose of the network was to provide baseline epidemiological data on ILI, detect clusters or outbreaks of ILI and to characterize circulating influenza viruses. The network started with six sentinel sites in 2006 and expanded to include 14 sites by 2010.

Using standardized case definitions and methods, five to 10 nasopharyngeal swabs are collected per site per week. Specimens are sent for testing to either Institute Pasteur du Cambodge or the National Institute of Public Health. Laboratory testing includes real time and multiplex reverse transcriptase (RT) polymerase chain reaction (PCR) for the detection of influenza A H3N2, H1N1, H1N1pdm, H5N1 and influenza B. Hemagglutination inhibition assay for virus isolation and antigenic characterization are also performed.

For each site, weekly aggregated data are collected, including the total number of outpatients and total number of ILI outpatients. Additional data are collected from patients who contribute specimens. Mobile phone text messaging is used to transmit the data to a central database at the Department of Communicable Disease Control of the Ministry of Health and feedback is sent to participating sentinel sites.

After five years of operation, the ILI sentinel surveillance was evaluated by the Ministry of Health, WHO and the United States Centres for Disease Control and Prevention (US CDC), which concluded that the system met its objectives and was well functioning. The data produced by the network is used to prepare a Respiratory Disease and Influenza Bulletin, and virological data are sent to WHO for vaccine recommendations.

The Chairperson invited questions and comments:

- It is proposed that WHO develop regional surveillance standards for IBS for priority emerging diseases. *WHO Recommended Surveillance Standards, Second Edition, 1999* is currently being revised by WHO Headquarters. The Regional Office for the Western Pacific aims to develop a practical guide to assist Member States in the Region in implementing and improving IBS for emerging infectious diseases in the Western Pacific regional context. An alternative approach to surveillance (e.g. moving away from the current disease-specific approach) may also be considered.
- Strengthening of subregional laboratories has been a challenge. The WHO guidance document provides general guidance, but its application must be supported by collaborative work at many different levels within the country. The establishment of a steering committee and the appointment of a national focal point for laboratory-related issues would facilitate the identification of priority diseases and capacities that need to be built.

## 2.4 Plenary 4 — Public health emergency preparedness

The session Chairperson, Peter Rzeszotarski, Temporary Adviser, WHO Regional Office for the Western Pacific, introduced the session.

### 2.4.1 Public health emergency preparedness

*Dr Chin Kei Lee, WHO Regional Office for the Western Pacific*

Three stages for public health emergency preparedness have been identified: 1) revision, exercise and maintenance of the national pandemic preparedness and response plan; 2) development of an overarching, flexible public health emergency plan (PHEP) that includes a national command, control and coordination structure, supported by a functional Emergency Operations Centre (EOC) within a Ministry of Health; and 3) building linkages through testing, exercising, updating and maintaining the PHEP. The effectiveness of a command-and-control system for response and coordination at the national level has been shown through recent pandemic reviews.

It is envisaged that a pandemic preparedness and response plan is used as a starting point for developing an EID plan, and eventually a more generic PHEP. Certain generic elements (e.g. planning, coordination, surveillance, risk assessment, risk communications, etc.) essential to effective emergency response need to be identified. An EOC can play a vital role in strengthening overall coordination and communication in both response and preparedness. Capacity-building and horizontal, interdepartmental and multisectoral approaches are crucial in delivering effective response and coordination of resources.

### 2.4.2 Establishing emergency operations centres and response logistics systems

*Peter Rzeszotarski, WHO Regional Office for the Western Pacific*

The highlight of APSED (2010) Focus Area 6.1 is the development of a public health emergency response plan that incorporates a common platform for command, control and coordination of response operations through a functional EOC to effectively respond to all acute public health emergencies of national and international concern, including an influenza pandemic. An EOC is a technical, information hub and management coordination platform that can be used for both daily and emergency operations. An Incident Management System (IMS) should enhance the overall coordination, operational decision-making and emergency policy development within the EOC. An IMS is a flexible and scalable organizational structure, applicable at all administrative levels across all functional disciplines and organizations, and applicable for operations of all types and complexities.

The APSED (2010) Focus Area 6.4 emphasizes the response logistics capacity to rapidly, efficiently and effectively deploy required resources (including human resources, medical/pharmaceutical materials and critical logistics information) to all acute and ongoing (long-term) public health events. Response logistics are a key pillar of the IMS as well as an essential support function of all emergencies response operations.

### 2.4.3 Regional stockpile for rapid containment

*Remy Prohom, WHO Regional Office for the Western Pacific*

The regional stockpile for rapid containment is located in Singapore and warehoused by an accredited freight forwarder; it is managed by the Japan International Cooperation System (JICS) and can be deployed within 24 hours. It was funded under the Japan ASEAN Integration Fund (JAIF) in 2006 and reinforced in 2009 by an Asia–Europe Foundation (ASEF) project funded under the Second Japan Trust Fund. It is actually composed of about 1 million courses of antivirals and 600 000 pieces of personal protective equipment (PPE). Based on previous

PanStop Exercises conducted in the Western Pacific Region, it was decided to reduce the amount of antivirals to 500 000 courses.

In case of a rapid containment operation, mobilization of PPE and antivirals to the field will require collaboration between all stakeholders at all levels in a timely manner. To ensure successful deployment, the antivirals (Relenza and Tamiflu) must be registered in each country, consignee information must be updated regularly, and rapid containment plans must be known and tested. Strengthening national and regional logistics capacity will ensure the appropriate mechanisms are in place in case of a potential influenza pandemic.

#### 2.4.4 National IHR focal points and points of entry

*Dr Li Ailan, WHO Regional Office for the Western Pacific*

The NFPs play a vital role in facilitating IHR (2005) event communications, information sharing and Ministry of Health–WHO joint risk assessments in responding to a public health emergencies of international concern. Since 2007, more than 120 public health events have been communicated to WHO through NFPs in the Western Pacific Region. It is envisaged that the NFPs serve as an authorized national office within ministries of health to communicate disease/event information in a timely and consistent manner. The annual IHR event communication exercise, IHR Exercise Crystal, provides an opportunity to review the accessibility of NFPs and improve both external and internal communications. Key challenges include: the NFPs' lack of authority and resources; the procedures in communicating and coordinating with ministries for acute public health events; differences in perception and understanding of IHR notifications and use of the Event Information Site (EIS); and difficulty in facilitating the annual submission of the IHR monitoring questionnaire. Further training and advocacy is required for better use of the IHR decision instrument and the EIS. To facilitate timely completion of the IHR monitoring questionnaire, active participation in the national stakeholders' planning and review process is required.

Under IHR (2005), designated points of entry (POE) must have core capacities for both routine requirements and emergency response. Following the regional meeting on POE capacity and preparedness for public health emergency response under the IHR (2005) in October 2011 in Manila, Philippines, and because POE is still identified as one of the weakest areas in meeting IHR core capacity requirements, a technical guideline document, *A Guide for Public Health Emergency Contingency Planning at Designated Points of Entry* was developed. This assists authorities in increasing readiness and response capacity for public health emergencies at designated POEs. POE is still identified as one of the weakest areas in meeting IHR core capacity requirements. Increased efforts are needed in prioritization of POE designation, development of a public health emergency contingency plan for designated POEs and enhancing routine, preventive measures.

The Chairperson invited questions and comments:

- Relevant information about public health emergency preparedness and response (e.g. rapid containment, pandemic preparedness, EOC, IMS, response logistics, stockpiles, etc.) may be put into one consolidated structure for easy visualization and facilitation for implementation in countries, while acknowledging the central coordinating role that the NFPs play within the IHR framework. Ministerial-level advocacy and negotiation, as well as the involvement of all levels of health systems, are essential for successful adaptation of such structures in countries.
- There is active debate over the relationship between national disaster planning and public health emergency planning. Having an overarching high-level structure and coordination using an all-hazards approach has proven to be useful for emergencies of

any kind in many countries. There is a need for demonstrating effective sharing of resources, as many countries have a funding shortage in public health emergency planning. There should be a clear shift from a reactive, emergency-driven to more preparedness-driven funding mechanism.

- Successful preparedness at POE is attributed to a multi-stakeholder approach with strong collaboration with the customs, immigration, quarantine and security, and other departments. The public health emergency contingency plans at designated POE must be well integrated into the local health service plans. There is an ongoing initiative to link surveillance at POE to national surveillance systems.
- The regional stockpile for rapid containment can be swiftly mobilized from the warehouse in Singapore prior to an official classification of diseases by the IHR Review Committee. Managing the expiration of stockpile is a challenge, and this may be overcome by contracting pharmaceutical companies to manage the expiration date of stocks.
- Empowering NFPs to carry out their functions has been recognized by the Review Committee. WHO Headquarters is developing a package of advocacy materials to facilitate decision-making and ministerial-level advocacy and a web-based exercise package for the NFPs on conducting risk assessment for notification and information sharing.

## 2.5 Plenary 5 — Group feedback from breakout sessions

### 2.5.1 Summaries from group work

The Session Chairperson, Dr Jeffrey Cutter, Ministry of Health, Singapore, and a TAG member, introduced this session.

#### *IHR National Focal Points functions.*

The objectives of this breakout session were for NFPs to share their experiences and lessons learnt over the past year on IHR event communications and to complete the IHR monitoring questionnaire.

#### *Event Information Site (EIS)*

The recent hand, foot and mouth disease (HFMD) event in Cambodia offered a great example of event communications between the Ministry of Health Cambodia and WHO, as well as the sharing of information among NFPs through the IHR reporting mechanism.

The benefits of EIS identified by the group included:

- It provides an avenue for early communication and early access to technical assistance from WHO and other agencies.
- It allows for early preparation by other Member States.
- It provides a source of credible information.
- It provides reassurance through connections and planning with WHO.

The key challenge was to ensure the appropriate use and handling of confidential information on EIS, which includes identifying what information can be shared, with whom it can be shared, and how to respond to media reports and inquiries.

A good balance has to be maintained for EIS between “alert” and regular day-to-day communications.

It is suggested that WHO and NFPs should further facilitate for better use of EIS for public health purposes.

*IHR core capacity monitoring questionnaire*

It was agreed by NFPs that Member States would submit their completed IHR monitoring questionnaires to the WHO Regional Office for the Western Pacific annually in June to allow for inclusion in the annual regional progress report.

To improve the design and usability of the IHR monitoring questionnaire, the following items were recommended for review:

- the length of the questionnaire;
- reorganization into core questions, with sub-question;
- the limitations of the tool be acknowledged when interpreting results; and
- provision of qualitative information in the annual regional progress report to supplement the results of IHR questionnaire.

*Indicator-based surveillance.*

Top-priority emerging diseases in the Region were identified as HFMD, dengue, influenza and multidrug-resistant tuberculosis (MDR-TB), while lesser priorities include malaria, zoonoses (including anthrax, plague and rabies), clusters of unknown disease, hepatitis B and hepatitis C, and measles elimination.

Most Member States conduct sentinel surveillance with laboratory confirmation for influenza-like illness (ILI), including Australia, China, Cambodia, Hong Kong (China), Japan, the Lao People's Democratic Republic, Malaysia, Mongolia, New Zealand, the Philippines, the Republic of Korea, Singapore and Viet Nam. Fewer Member States conduct sentinel surveillance for dengue, which includes Cambodia, the Philippines, Viet Nam and the Pacific island countries and areas (syndromic surveillance only).

The following advantages of establishing regional surveillance standards were identified by the session participants:

- development of standards and indicators at a regional level could allow Member States to adopt these standards to improve data quality, analysis and interpretation;
- enhanced information sharing between countries;
- systematic analysis of circulating disease types at a regional level;
- use as a basis for risk assessments; and
- a mechanism for early alert, monitoring and response to multinational events.

Challenges for establishing regional surveillance standards were identified as follows:

- need for consensus among Member States;
- merging country data with different case definitions, thresholds and indicators could be difficult and broad case definitions may be required;
- requiring Member States to adapt established systems; and
- cost of implementation and maintenance.

The following key advantages to establishing a platform for regional reporting of priority diseases were identified:

- improved information sharing and regional awareness;
- may be more manageable when focused on priority diseases only;
- provides early detection and response in multinational incidents; and
- allows analysis at the regional level, including trends.

Challenges for establishing a platform for regional reporting of priority diseases were identified as follows:

- additional cost and workload for reporting countries but also additional capacity at regional level needed;
- feasibility of adding additional systems and/or resources;
- possible need for higher-level approval for release of surveillance information;
- commonality (or harmonization at a minimum) in surveillance case definitions;
- comparability in data quality among countries;
- intellectual property of data; and
- may negatively impact the tourism sector.

#### Emergency Operations Centres.

The session objectives were to discuss the concept of EOCs and IMS, and identify the best way to gain commitment to adopt/strengthen EOCs and their associated IMSs.

Group discussion was guided by three key questions.

Q 1: How do you envisage commitment to be gained for the establishment/strengthening of an EOC, supported by a functional IMS, within the MOH?

- through the experience of crises and outbreaks (e.g. H1N1, SARS);
- better understanding of the value of EOCs among the staff working in infectious disease areas; and
- through compliance to and advocacy for the legal requirements of the IHR (2005).

Q2: What challenges do you foresee?

- coordination between existing EOCs of different ministries;

- differentiating the role of an EOC within a MOH from that of an existing one at national governmental level;
- identifying the best place for an EOC within a MOH;
- identifying clear steps for transitioning an emergency meeting room into a functional EOC, with a defined IMS structure;
- establishing clear activation triggers/levels;
- infrequently using EOC equipment leads to unfamiliarity and risk of malfunctions;
- having business continuity plans in place (availability of alternative locations for operations with proper infrastructure);
- building capacity for accurately analysing social media (Twitter) to remain responsive to the public perceptions of events;
- shortage of trained human resources to manage incidents within a functional EOC;
- ensuring the availability of skilled people for a long period of time during ongoing/prolonged emergencies; and
- sustaining preparedness programmes once built.

Q3: What are ways to overcome these challenges?

- STEPwise approach—build upon existing capacity/structure, demonstrate that improvements are not expensive;
- emergency management should become a culture—frequent use of incident management facilities/functions will instil familiarity with EOCs and IMSs;
- training should be used as a regular measure to build capacity;
- exchanging programme staff between countries builds capacity and disseminates best practices;
- using equipment regularly reduces the risk of malfunctions;
- including multiple agencies in exercises improves interoperability;
- establishing a strong response logistics structure (systems and staff);
- utilizing an all-hazards approach can enhance capacity (staff, systems);
- providing training to staff from different departments/divisions to be called upon can build resource pool; and
- using EOCs for all response support activities—not just large activations—develops the culture of using the EOC and supports justification for sustained funding.

#### Partners Forum

The Partners Forum, attended by the representatives from international partner and donor agencies, addressed three themes.

*Theme 1: Strategic approach for APSED (2010) resource mobilization.* The main objectives of this session were to seek clarity on funding gaps for meeting IHR (2005) core capacities through implementing APSED, and to identify key bottlenecks and solutions towards establishing a strategic approach for mobilizing adequate and sustainable financial resources to implement APSED at both country and regional levels.



The analysis of funding gaps for meeting IHR (2005) core capacities through APSED (2010) implementation was presented to the Forum. The funding gap analysis was based on the draft costing framework for IHR (Katz et al. 2012)<sup>1</sup> as well as country-cost estimates for implementing APSED/IHR workplans. The overall estimated funding gap was US\$ 188.5 million. Limitations include, but are not limited to, the exclusion of China's estimate as the biggest outlier and unknown contributions from some governments and partners.

All partners agreed that the funding gap estimate was useful, despite the limitations in the costing methodology. The partners agreed that strategic advocacy is needed for APSED (2010) resource mobilization, while ensuring the involvement of:

- partners and international assistance
- private sector, business communities and public-private partnerships (PPP) and
- Government.

*Theme 2: Partners coordination at the country level.* This session aimed to review p country experiences of partners in using the APSED M&E mechanism as a platform for partner coordination at the country level; to identify key challenges, including the prioritization of decision-making and country-level support; and to increase the need to demonstrate results and document progress.

Experiences from the Lao People's Democratic Republic and Mongolia were presented. Traditional donor partners shared their perspectives on partner coordination. The need for partners to demonstrate results was a recurrent message during the discussion, as was the role of M&E in APSED (2010). The following challenges were identified for partner coordination at the country level:

- prioritization;
- the need for quantitative and qualitative data (case studies/learning experience, more than hard "results");
- Diversity of tools to measure results and impact at the country level; and
- the need for harmonized indicators at the country level.

The session also provided opportunities for partners to present their achievements and share challenges and lessons learnt while implementing APSED (2010).

*Theme 3: WHO financial accountability.* This session reviewed WHO's use of financial resources in implementing IHR (2005) and APSED (2010). It critically reviewed the ability of WHO to effectively and efficiently deliver results according to agreed priorities and for greater transparency and accountability for results and resources. This included a better funding balance across APSED focus areas, real concerns for financing APSED needs in 2014–2015 and sustaining IHR needs over the medium to long term.

#### *Next Steps*

- building a business case for funding for continual APSED implementation;

---

<sup>1</sup> Katz, R, Hate V, Kornblet S. and Fischer, JE (2012). Costing framework for International Health Regulations (2005). (Research Support, U.S. Gov't, Non-P.H.S.). *Emerg Infect Dis*, 18(7), 1121-1127. doi: 10.3201/eid1807.120191

- developing an advocacy strategy (three parties);
- aligning indicators as a step towards common reporting at the country level;
- integration with health systems strengthening; and
- a long-term sustained commitment by all parties.

## 2.6 Plenary 6 — Risk communications

The session Chairperson, Dr Kazunori Oishi, Director, Infectious Disease Surveillance Centre, National Institute of Infectious Diseases, Japan, and a TAG member, introduced the session.

### 2.6.1 Country experience – Viet Nam

*Dr Tran Thanh Duong, Deputy Director-General, General Department of Preventive Medicine, Ministry of Health, Viet Nam*

Viet Nam shared its experiences on risk communications during two significant public health events: the hand, foot and mouth disease outbreak in 2011 and a syndrome of unknown aetiology in 2012. Dr Tran Thanh Duong shared case stories on how risk communications strategies were applied and the lessons learnt from these experiences.

Although there were challenges in managing communications for HFMD, the timely and strong guidance from the Prime Minister, leaders of the Ministry of Health and local authorities helped in reaching vulnerable and at-risk groups through appropriate communication strategies. Mobilization and active involvement of relevant sectors and social organizations resulted in effective prevention and control of the disease. The most efficient and effective communications measures against HFMD were the direct dissemination of knowledge of the early symptoms of the disease and preventive and control measures for households, schools and kindergartens.

Viet Nam also had an outbreak of a syndrome with unknown aetiology (Inflammatory Palmoplantary Hyperkeratosis [IPPH]) in Ba To district in Quang Ngai province. This event posed challenges for communications because of its unknown cause or source of transmission and identifying the cause may take longer than anticipated or prove elusive. There was extreme pressure to identify the cause of the disease as the public obtained information from rumours and media. This outbreak highlighted the need for transparent and proactive information dissemination during events.

Based on these two experiences, Viet Nam highlighted the need for Member States to have communications strategies and standard operating procedures in place for public health emergencies and to build the capacity of the MOH for effective risk communications. This risk communications component should be an integral part of the risk management process and preparedness planning. It is highly recommended that the lessons learnt should be proactively collected to evaluate effectiveness of risk communications and to benefit future planning.

### 2.6.2 Health emergency communication

*Ms Joy Rivaca Caminade, WHO Regional Office for the Western Pacific*

There have been a number of key public health events in past years that have shown that public health emergencies place great demands and critical pressures on the communications skills of health staff, the communications practices and procedures of health systems, and existing

communications resources. In some contexts, the skill set, knowledge and competencies of communications staff might not be appropriate to meet the expectations needed during public health emergencies.

Within the framework of APSED (2010), the focus area on risk communications defines how health emergency communications, operational communications and behaviour change communications fit together and complement each other. It shows the inherent values of each component in the context of public health and clarifies the differences as well as the interface among these different components, and what capacity gaps currently exist. The five-year APSED (2010) workplan for risk communications envisages all Member States having institutionalized risk communications within the Ministry of Health for both health emergency response actions and routine prevention functions.

For Year 1 implementation, Member States have identified focal points/teams for health emergency communications and some have also developed their workplans. Although ad-hoc arrangements are in place for some countries and others may not have the skills required for health emergency communications, Member States are addressing these challenges. In line with meeting the core requirements under IHR, the WHO Regional Office for the Western Pacific worked with Member States to develop country workplans based on the regional risk communications framework and an operational framework for health emergency communications that can be adapted for various specific health emergencies.

In the coming years, risk communications will focus on proactive advocacy through communication exercises (using real-life events in the Region) and through professional networking and career advancement of communication professionals. Mechanisms to proactively and efficiently coordinate health emergency communications will be strengthened and the development/enhancement of appropriate feedback mechanisms will be integral parts of the communication strategies. Learning from and sharing lessons learnt on health emergency communications (case studies and conferences) will also be facilitated.

The Chairperson invited questions and comments:

- Ensuring transparency in information sharing without causing unnecessary panic remains a challenge. A whole-of-society approach is needed to overcome the limitations of local authorities in outbreak response and promote better awareness and improved communications across different sectors. There is an increasing need for risk communications training at the local level.

#### 2.7 Plenary 7 — Regional surveillance, alert and response

The session Chairperson, Dr Kazunori Oishi, Director, Infectious Disease Surveillance Center, National Institute of Infectious Diseases, Japan, and a TAG member, introduced the session.

##### 2.7.1 Overview of regional surveillance

*Dr Tamano Matsui, WHO Regional Office for the Western Pacific*

Threats to public health go beyond national borders. To fight these threats in a coordinated way, mechanisms to share information and experiences are required. At the same time, the uniqueness of each country should be respected. The Regional Office for the Western Pacific has been assisting countries to develop national programmes on field epidemiology training (FET) to provide qualified public health workers and to strengthen the public health system through on-the-

job training. In the Western Pacific Region, eight countries and one area have the conventional two-year field epidemiology training programme (FETP), with three countries having modified (FET).

Since 2009, the Regional Office for the Western Pacific has had annual forums for FET/FETP. The agenda in 2011 included a programme assessment for Cambodia, the Lao People's Democratic Republic and Mongolia and a coordinated action plan for system development through FET+ (plus). The Regional Office for the Western Pacific has also been running the Western Pacific Region FETP Fellowship Training Programme, whereby fellows from FETs, FETPs and MOH in the region are invited to work in the Regional Office on regional event-based surveillance (EBS), risk assessment and regional IBS. Fellows have been invited from 9 countries and one area from July 2011 to June 2012. During this time they have detected 294 events through regional EBS, including 114 infectious events among humans, 86 infectious events among animals, 69 disaster and humanitarian events, and eight food-related events. Several missions were also deployed for these detected events, including a trial for the enhanced surveillance protocol for leptospirosis (August–September 2011), surge capacity for flood response to support implementing a surveillance tool (December 2011), clinical management deployment for a cholera outbreak (July 2012) and epidemiologists for an undiagnosed syndrome event (July 2010).

As an information sharing platform, the Regional Office website has had weekly reports on avian influenza including global human cases and biregional animal case situation.

#### 2.7.2 Regional surveillance of priority diseases

*Dr Yuzo Arima, WHO Regional Office for the Western Pacific*

Dengue, influenza, and hand, foot and mouth disease (HFMD) are highly incident-endemic diseases in the Region. These EIDs are all caused by viral agents, with potential for rapid genetic change that translates to an ever-evolving and complex epidemiology. Thus, these diseases pose a considerable public health threat to the Region, and as regional priority diseases, require regional surveillance.

Through regional surveillance, information shared by Member States is documented, analysed and assessed for evidence-based decision-making. Examples include the collaboration with the Association of Southeast Asian Nations (ASEAN) for the creation of ASEAN Dengue Day and the development of *A Guide to Clinical Management and Public Health Response for Hand, Foot and Mouth Disease*. The latest action, also based on an assessment of regional surveillance data, is the decision to incorporate gender into surveillance activities. The consistent excess of adolescent and young adult male cases in dengue surveillance data has highlighted the need to report sex data by age to detect these important gender-associated patterns. The Regional Office for the Western Pacific has further followed up with in-depth investigations, noting that such distributions may likely be attributed to true disease risk rather than health-care accessibility.

In addition, since 2011, Regional Office for the Western Pacific has been providing timely regional surveillance data in the form of a situation updates web page, where Member States and the general public can obtain the latest numbers of reported cases of priority diseases. This information is updated every two weeks, with regional and country-specific information. Such timely regional surveillance data allows Member States to be better prepared, as they can use the regional information for their own assessments and evidence-based actions. Travellers may also benefit by knowing the latest situation in the country of destination. And, most recently, provision of timely regional surveillance information has been used in the assessment of the ongoing HFMD outbreak in Cambodia.

### 2.7.3 Field epidemiology training — FET+ (plus)

*Dr Tamano Matsui, WHO Regional Office for the Western Pacific*

The concept of FET+ (plus) is to link FET to the country's public health system. It may include training of FET supervisors, the strategic selection of trainees and subsequent assignment of programme graduates to positions where they can train other health professionals. This concept will be discussed in the annual FET forum in November 2012 for programme directors and partners.

### 2.7.4 Regional risk assessment

*Dr Ruth Foxwell, WHO Regional Office for the Western Pacific*

Information has been gathered through EBS and IBS in all Member States of the Western Pacific Region over the last few years. Both have been used to protect and improve the health of people in the community. Systematic risk assessment is now a critical step in the day-to-day practice of the Regional Office to underpin evidence-based decisions, share the decision-making process and responsibility for action, and ensure actions are proportional to the level of risk posed by a potential or real public health event. There are two key places where systematic risk assessment occurs: firstly as events are presented through ad hoc or formal information channels; and secondly, when deciding priorities and whether a change in day-to-day management of a situation is required.

The outcome from a systematic risk assessment can be rapid and consists of forming a team, setting the scope, documenting information from the event and from available literature, reaching a level of technical risk with the aid of an algorithm, discussing community and political perceptions of the risk, deciding on and sharing the responsibility for action, and writing a brief statement about the level of risk and evidence supporting that finding.

Challenges for the coming 12 months include further embedding systematic risk assessment into day-to-day practice, refining the approach and linking with Member States to undertake risk assessment with them.

### 2.7.5 Western Pacific Surveillance and Response (WPSAR)

*Ms Michelle McPherson, WHO Regional Office for the Western Pacific*

*Western Pacific Surveillance and Response (WPSAR)* is an open-access journal established to encourage countries of the Western Pacific Region to share information on the surveillance of and response to public health events in this Region. The goal of WPSAR is to create a platform for timely information sharing both within our Region and globally to enhance surveillance and response activities. All articles, apart from editorials and letters to the editor, are peer-reviewed and published online as soon as they have completed the review and editing process. Since its launch in 2010, WPSAR has published seven issues and a total of 43 articles.

Another component of APSED 2010—and one that also is part of the WPSAR workplan—is the development and delivery of the scientific writing workshops. The facilitator's guide and workshop were developed in 2011 and a pilot workshop was conducted in Mongolia in July 2011 with 10 participants. A second workshop was held in July 2012 in Viet Nam, with 14 core participants and two train-the-trainers participants. There are plans to conduct the workshop again in Mongolia in August 2013 and in the Lao People's Democratic Republic later in the year.

The Chairperson invited questions and comments:

- The systematic risk assessment is conducted by the Regional Office for the Western Pacific for the events occurring in countries in a number of situations, e.g. event screening, rapid risk assessment to determine the actions to be taken, and risk assessment for longer-term public health planning. This systematic approach to risk assessment could be adopted in countries where it is currently conducted on an ad-hoc basis. A practical guide to rapid risk assessment for EBS will be finalized by the Regional Office for the Western Pacific to be used by surveillance teams in ministries of health.
- The regional-level risk assessment allows WHO to provide technical assistance and timely coordination of resources to countries. Division of Health Security and Emergencies at the Regional Office for the Western Pacific aims to engage other technical units in regional-level risk assessments in a more systematic manner and to provide greater support in country-level capacity development.
- It was suggested that WPSAR include an announcement on upcoming publications.

## 2.9 Closing remarks

Dr Li Ailan, WHO Regional Office for the Western Pacific, revisited the three objectives of the meeting and concluded that they have been achieved through the active participations of TAG members and representatives from Member States and partner agencies in the discussions held in a variety of formats over the past three days. With strong commitments from Member States, the Region is ready to move forward with the implementation of the meeting recommendations.

Dr Li asserted that the coming two years would be a critical period in the Region's IHR core capacity development, both for countries granted a two-year extension and countries not requiring an extension. It is envisaged that future TAG meetings will provide the opportunity to reaffirm commitments by all stakeholders to continue working towards regional security and go beyond meeting the minimum requirements of the IHR (2005).

## 3. CONCLUSIONS AND RECOMMENDATIONS

### 3.1 Conclusions

The general conclusions of the meeting were:

3.1.1 IHR (2005) has been in force since 15 June 2007, and aims to ensure that national, regional and international capacities and systems are in place to manage public health events and emergencies in a collective and effective manner. IHR (2005) set out the obligations for Member States to meet IHR core capacity requirements by 15 June 2012, with a mechanism in place for an extension for countries that needed more time to fulfil the requirements.

3.1.2 Encouraging progress has been made in meeting IHR core capacity requirements in the Western Pacific Region over the past five years through the collective implementation of the *Asia Pacific Strategy for Emerging Diseases* (APSED). This is supported by the data collected from the IHR monitoring tool and by progress reports.

3.1.3 It is vital that APSED continues to be implemented in a manner that prioritizes effective resource allocation and respects and builds on existing systems, structures and relationships within Member States and the Region.

3.1.4 Despite commendable achievements, significant challenges remain. As of June 2012, more than one-half of countries in the Region (14 of 27) requested two-year extensions to meet IHR core capacity requirements. The main factors in not meeting the initial deadline include low baseline capacities in a number of resource-limited countries and inadequate financial and technical resource allocation for national core capacity development.

3.1.5 Requests for two-year extensions indicate that additional time, as well as technical and financial resources and political commitment, is required to meet IHR core capacity requirements. Participants are fully aware that further extensions to the next deadline can only be granted by the WHO IHR Review Committee in 2014 in exceptional situations,.

3.1.6 All countries that requested an extension have now developed or updated their national workplans for emerging diseases and public health emergencies. This presents continuing government commitment to meet IHR core capacity requirements. APSED (2010) has been used as a tool to develop these national plans, aiming to prioritize activities, facilitate stakeholder planning and collaboration, coordinate support from donors and partners, and enable lesson sharing among countries.

3.1.7 Effective implementation of national workplans is the key to successful achievement of IHR core capacities and requires prioritization, identification of funding gaps, sustainable technical and financial investment from domestic and external sources, high-level advocacy, lesson sharing about successes and challenges, and greater collaboration within and among countries.

3.1.8 Pacific island countries and areas face unique national and local capacity-development challenges due to small populations, geographical isolation, and limited infrastructure and resources. Specific consideration and a tailored approach are needed to meet IHR core capacity requirements in the Pacific.

## 3.2 Recommendations

### 3.2.1 General

(1) Member States that have sought extensions should make every effort to implement their national workplans through increased allocation of national resources and maximizing the use of external technical and financial resources.

(2) Countries that have not requested an extension should continue their efforts to sustain and/or strengthen IHR core capacities and provide support to those countries that most need external assistance.

(3) Prioritization of national action is essential. The priority technical areas for further capacity strengthening in 2011–2015 include monitoring and evaluation, event- and indicator-based surveillance, risk assessment, public health laboratory capacity, national public health emergency preparedness, and health emergency communications. Efforts should be made to strengthen operational links and intersectoral collaboration among technical programmes and ministries in IHR implementation.

(4) WHO, donors and partners should continue to provide technical and financial assistance to support implementation of national and regional workplans, as well as technical assistance to enhance monitoring efforts and promote stakeholder coordination. A comprehensive evaluation

of APSED should be conducted that includes and involves countries in the Region after completion of APSED (2010).

(5) A multi-faceted advocacy campaign needs to be developed to mobilize long-term sustained funding from existing and new sources for building and maintaining core capacities.

(6) A subregional Pacific approach should be used to ensure that national core capacities required under IHR (2005) are in place, including application of the global IHR core capacity monitoring tool, in the Pacific setting and the strengthening of the Pacific-wide Syndromic Surveillance System. Pacific representation at future TAG meetings is recommended.

(7) WHO should continue to work closely with Food and Agricultural Organization of the United Nations (FAO) and the World Organization for Animal Health (OIE) to maintain and enhance coordination between human and animal health for zoonoses prevention and control and to facilitate early detection of emerging infectious diseases at the animal–human interface.

### 3.2.2 Priority activities for the coming year (July 2012–June 2013)

(1) Member States should enhance and sustain their monitoring and evaluation capacity through further establishing and maintaining integrated national and regional planning and review processes, including:

- conducting regular country-level stakeholder planning and review meetings to review implementation of national workplans and document results against workplan milestones, review lessons learnt, and monitor progress using the IHR monitoring tools and APSED performance indicators;
- providing annual country progress updates that highlight national status towards meeting the IHR core capacity requirements, major challenges, solutions and lessons learnt;
- reviewing and sharing lessons learnt from past public health events at both the country and regional levels at future APSED meetings to identify common issues; and
- participating in annual regional TAG meetings which serve as regional stakeholder meetings for IHR implementation to review regional progress, identify critical issues and recommend priority activities.

(2) WHO should convene the next TAG meeting (or its equivalent) as a biregional meeting with the Regional Office for South-East Asia to facilitate biregional progress monitoring, technical advice on priority actions and resource mobilization.

(3) WHO should clarify its role in monitoring and evaluation (M&E) at the regional level, including formalized M&E capacity-building at the national level.

(4) Member States should enhance their surveillance, risk assessment and response systems through:

- participation in the development of a standardized approach for indicator-based surveillance in the Region which aims to enhance and harmonize case identification, laboratory confirmation and reporting of priority infectious diseases such as HFMD, dengue and influenza;
- establishment of a systematic and continuing process for detecting, assessing risk and responding to actual or potential acute public health events;



- participation in the development of the concept of Field Epidemiology Training (FET) Plus as a mechanism to utilize FET to strengthen capacity within public health systems; and
  - implementation of an integrated public health laboratory network by establishing national laboratory steering committees (where possible), strengthening quality assurance and biosafety, and establishing an efficient specimen referral system from the subnational to national and international levels, as required. Collaboration and linkage with technical partners among the laboratories should be considered to support its development, particularly in the resource-poor countries, and using existing systems where available.
- (5) WHO should facilitate development of regional guidance on upgrading indicator-based surveillance and should also develop the concept for FET Plus. WHO should provide technical support to countries in enhancing their national risk assessment capacity, public health laboratory network and FET.
- (6) WHO should continue to enhance information sharing on regional surveillance and response through the journal *Western Pacific Surveillance and Response* (WPSAR), and preparedness and response through the Global Outbreak Alert and Response Network (GOARN).
- (7) Member States should enhance public health emergency operations capacity through establishing or strengthening their emergency operations centres (EOCs), associated with an incident management system (IMS) and supported by a response logistics system, within the Ministry of Health. The EOC should be used to support all public health operations.
- (8) WHO should work to finalize and facilitate the implementation of a practical guide for establishing an EOC and an associated IMS, with a specific focus on response logistics, in ministries of health. Where required, WHO should also provide in-country technical support to enhance public health emergency response operations. Such technical support may include conducting and evaluating public health emergency exercises.
- (9) WHO and the IHR National Focal Points should advocate for and facilitate:
- better use of the event information site (EIS) for public health purposes, and
  - improved preparedness at designated points of entry.
- (10) Health emergency communications should be viewed as a high priority for establishing a functional risk communications system within ministries of health:
- Member States should establish or enhance a functional health emergency communications structure or mechanism, coordinated by an appropriate focal point. The focal point should coordinate the development and testing of standard operating procedures (SOPs) and guidelines for health emergency communications and should ensure implementation of the SOPs during public health events.
  - WHO should facilitate the development of the health emergency communications framework or practical guide and assist Member States in the development of their operational systems and SOPs and in the conduct of health emergency communications exercises.
- (11) WHO should consider developing guidance for Member States on best practice criteria for internal self-assessments against the IHR core capacities.



PROGRAMME OF ACTIVITIES  
TENTATIVE

**Day 1 – 10 July 2012 (Tuesday)**

**08:30 – 09:00**      **Registration**

**09:00 – 10:00**      **Opening session**

Opening remarks

Self introduction

Objectives and agenda  
- *Dr Chin Kei Lee*

Nomination of Chairs

Administrative announcements

Group photo

*10:00 – 10:30*      *Coffee break*

**10:30 – 12:00**      **Plenary 1: International Health Regulations (2005) implementation status**

10:30 – 11:00      Global IHR (2005) status  
- *Dr Stella Chungong*

11:00 – 11:30      Regional IHR (2005) status  
- *Dr Li Ailan*

11:30 – 12:00      Questions and clarifications

12:00 – 13:00      *Lunch break*

**13:00 – 14:00**      **Plenary 2: National workplan development and implementation (*continued*)**

13:00 – 13:30      APSED (2010) progress  
- *Dr Gabit Ismailov*

13:30 – 13:50      Establishing an integrated national and regional planning and review process  
- *Dr Chin Kei Lee*

13:50 – 14:00      Questions and clarifications

14:00 – 14:30      *Coffee break*

- 14:30 – 17:00      **Plenary 2: National workplan development and implementation** (*continued*)
- 14:30 – 16:00      Country presentations
- Lao People's Democratic Republic
  - Malaysia
  - Mongolia
  - Philippines
- 16:00 – 17:00      Plenary discussion  
*Facilitator: Mr Graham Rady*
- 17:30                Welcome reception

**Day 2 – 11 July 2012 (Wednesday)**

- 08:30 – 08:40      Recap of Day 1**
- 08:40 – 10:00      Plenary 3: Enhancing surveillance system**
- 08:40 – 08:55      Indicator based surveillance (IBS)  
*- Dr Jeffrey Partridge*
- 08:55 – 09:10      Roles of public health laboratories in surveillance and response  
*- Dr Frank Konings*
- 09:10 – 09:25      Influenza surveillance: an example of IBS  
*- Dr Jeffrey Partridge*
- 09:25 – 09:40      Country experience  
*- Cambodia*
- 09:40 – 10:00      Questions and clarifications
- 10:00 – 10:30      Coffee break*
- 10:30 – 12:00      Plenary 4: Public health emergency preparedness**
- 10:30 – 10:45      Public health emergency planning  
*- Dr Chin Kei Lee*
- 10:45 – 11:15      Establishing emergency operation centres and response logistics systems  
*- Mr Peter Rzeszotarski*
- 11:15 – 11:30      Regional stockpile for rapid containment  
*- Mr Remy Prohom*
- 11:30 – 11:45      National IHR Focal Points and points of entry  
*- Dr Li Ailan*
- 11:45 – 12:00      Questions and clarifications

- 12:00 – 13:00      *Lunch break*
- 13:00 – 18:00      Breakout session**
- 13:00 – 14:30      Introduction to breakout session  
                          - *Dr Jeffrey Partridge*
- Group A: Indicator based surveillance  
                          - Group B: Emergency operations centre  
                          - Partner's forum
- 14:30 – 15:00      *Coffee break*
- Breakout session (continued)**
- 15:00 – 16:30      - Group A: Emergency operations centre  
                          - Group B: Indicator based surveillance  
                          - Partner's forum
- 16:30 – 18:00      - IHR National Focal Points functions  
                          - TAG member's meeting

**Day 3 – 12 July 2012 (Thursday)**

- 08:30 – 08:40      Recap of Day 2**
- 08:40 – 09:30      Plenary 5: Group feedback**
- IHR National Focal Points functions  
                          - Indicator based surveillance  
                          - Emergency operations centre  
                          - Partner's forum
- Questions and discussions
- 09:30 – 10:00      Plenary 6: Risk communications**
- Country experience  
                          - Viet Nam
- Health emergency communications  
                          - *Ms Joy Rivaca Caminade*
- Questions and clarifications
- 10:00 – 10:30      *Coffee break*
- 10:30 – 12:00      Plenary 7: Regional surveillance, alert and response**
- 10:30 – 10:45      Overview of regional surveillance  
                          - *Dr Tamano Matsui*

10:45 – 11:00	Regional surveillance of priority diseases <i>- Dr Yuzo Arima</i>
11:00 – 11:15	Field epidemiology training (FET) Plus <i>- Dr Tamano Matsui</i>
11:15 – 11:30	Regional risk assessment <i>- Dr Ruth Foxwell</i>
11:30 – 11:45	Western Pacific Surveillance and Response (WPSAR) <i>- Ms Michelle McPherson</i>
11:45 – 12:00	Questions and clarifications
<i>12:00 – 13:30</i>	<i>Lunch</i>
<b>13:30 – 15:00</b>	<b>Plenary 8: Conclusions and recommendations</b>
<i>15:00 – 15:30</i>	<i>Coffee break</i>
<b>15:30</b>	<b>Closing session</b>

LIST OF TAG MEMBERS, TEMPORARY ADVISERS,  
PARTICIPANTS, CONSULTANT, OBSERVERS/REPRESENTATIVES  
AND SECRETARIAT

1. TECHNICAL ADVISORY GROUP MEMBER

Dr Jeffery Lawrence CUTTER, Communicable Disease Division, Ministry of Health, 16 College Road, College of Medicine Building, Singapore 169854, Singapore. Tel. No.: (65) 6325 9018, Fax No.: (65) 6325 1168, E-mail: Jeffery\_cutter@moh.gov.sg

Professor John MACKENZIE, Research Associate/Professor of Tropical Infectious Diseases, Curtin University, 20A Silver Street, Malvern, Victoria 3144, Australia. Tel. No.: (614) 3987 5697/(613) 9822 6223, E-mail : J.MacKenzie@curtin.edu.au

Dr Kazunori OISHI, Director, Infectious Disease Surveillance Center, National Institute of Infectious Diseases, 1-23-1 Tomoya, Shinjuku-ku, Tokyo 162-8640, Japan. Tel. No.: (813) 4582 2786, Fax No.: (813) 5285 1129, E-mail: oishik@nih.go.jp

2. TEMPORARY ADVISERS

Mr Graham RADY, Performance and Quality Adviser, East Asia Division, Australian Agency for International Development, PO Box 887, Canberra ACT 2601, Australia. Tel. No. : (612) 6206 4826, Fax No. : (612) 6206 4036, E-mail : Graham.Rady@ausaid.gov.au

Mr Peter RZESZOTARSKI, Operations Branch Chief, Office of Public Health Preparedness and Response, Division of Emergency Operations, Centers for Disease Control and Prevention, 1600 Clifton Road, NE, Mail Stop A-27, Atlanta, GA 30333, United States of America. Tel. No.: +1 (404) 533 7772, Fax No.: +1 (404) 533 7509, E-mail : peter.rzeszotarski@cdc.hhs.gov BQQB@cdc.gov

3. PARTICIPANTS  
WESTERN PACIFIC REGION

- AUSTRALIA Ms Teresa MORAHAN, Director, Border Health Section.  
Health Protection and Surveillance Branch, Department of Health  
and Ageing, MDP 14, GPO Box 9848, ACT 2601,  
Tel. No.: (612) 6289 2624, Fax No.: (612) 6289 9072  
E-mail : Teresa.Morahan@health.gov.au
- CAMBODIA Dr LY Sovann, Deputy Director, Department of  
Communicable Diseases Control, Ministry of Health,  
#151-153, Kampuchea Krom Avenue, Khan 7 Makara,  
Phnom Penh. Tel. No.: (855) 1282 5424,  
Fax No.: (855) 2388 0441, E-mail: sovann\_ly@online.com.kh
- Dr SENG Heng, Chief of Disease Surveillance Bureau,  
Department of Communicable Disease Control,  
Ministry of Health, #151-153, Kampuchea Krom Avenue,  
Khan 7 Makara, Phnom Penh. Tel. No.: (855) 1285 2782,  
Fax No.: (855) 2388 0441, E-mail: hengcdc@gmail.com
- CHINA Dr MI Yanping, Director, Division of General Coordination  
Office of Health Emergency, Ministry of Health,  
No. 1 Nanlu Xizhimenwi, Beijing 100044,  
Tel. No.: (8610) 6879 2350, Fax No.: (8610) 6879 2590,  
E-mail: xiagang@moh.gov.cn
- Ms XU Min, Vice Director, Division of Precaution,  
Office of Health Emergency, Ministry of Health,  
No 1 Nanlu Xizhimenwai, Beijing 100044.  
Tel. No.: (8610) 6879 2976, Fax No.: (8610) 6879 2646  
E-mail: xumin@moh.gov.cn
- HONG KONG (CHINA) Dr TSUI Lok Kin Edwin, Chief Port Health Officer,  
Department of Health, Suite 1101, 11<sup>th</sup> Floor Two Landmark  
East 100 How Ming Street, Kwun Tong. Tel. No.: (852) 3904 9300,  
Fax No.: (852) 2833 0132, E-mail: edwintsui@dh.gov.hk
- JAPAN Dr Tomoya SAITO, Coordinator for International Health Crisis  
Management, Office of Health Emergency Preparedness and Response,  
Health Science Division, Ministry of Health, Labour and Welfare,  
1-2-2- Chiyodaku, Kasumigaseki, Tokyo 100-8916.  
Tel. No.: (81) 2932 3094, Fax No.: (81) 3595 2192,  
E-mail: saitou-tomoya@mhlw.go.jp; kikiranre@docomo.ne.jp



LAO PEOPLE'S  
DEMOCRATIC  
REPUBLIC

Dr Bounlay PHOMMASACK, Director of National EID  
Coordination Office (NEIDCO), Hygiene and Prevention  
Department, Ministry of Health, Simoung Road, Sisatanak District,  
Vientiane Capital. Tel. No.: (856) 2126 4324-25,  
Fax No.: (856) 2126 4326, E-mail : bphommasack@gmail.com

Dr Phengta VONGPHRACHANH, Director, National Centre for  
Laboratory and Epidemiology, Ministry of Health,  
Km 3 Thadeua Road, Vientiane Capital. Tel. No.: (856) 2131 5858  
Fax No.: (856) 2135 1006, E-mail: v.phengta@gmail.com

MALAYSIA

Dr Husna Maizura Ahmad MAHIR, Senior Principal Assistant Director,  
Surveillance Section, Disease Control Division,  
Ministry of Health Malaysia, Level 3, Block E10, Complex E  
Federal Government Administrative Centre, 62590 Putrajaya.  
Tel. No.: (603) 8883 4508, Fax No.: (603) 8888 1013,  
E-mail: drhusna\_maizura@moh.gov.my

Ms ONG Chia Ching, Environment Health Officer,  
Disease Control Division, Ministry of Health Malaysia,  
Level 3, Block E10, Complex E, Federal Government  
Administrative Centre, 62590 Putrajaya.  
Tel. No.: (603) 8883 4537, Fax No.: (603) 8888 1013,  
E-mail: chia@moh.gov.my

MONGOLIA

Dr Narangerel DORJ, Senior Officer, Communicable Diseases Control,  
Ministry of Health, Government Building VIII,  
Olympic Street 2, Sukhbaatar District, Ulaanbaatar 51.  
Tel. No.: (976) 9916 4451, Fax No.: (976) 1126 3631,  
E-mail: naraa61us@yahoo.com

Dr SURENKHAND Gungaa, Deputy Director,  
National Center for Communicable Diseases, Ministry of Health,  
Bldg 1-a, NCCD Campus, Nam Yan Ju Street, Bayanzurkh District,  
Ulaanbaatar 240648. Tel. No.: (976) 9988 1381,  
Fax No.: (976) 1145 0492, E-mail: surenkhand51@yahoo.com

NEW ZEALAND

Dr Darren HUNT, Deputy Director of Public Health,  
Ministry of Health, No. 1 The Terrace, P.O. Box 5013, Wellington.  
Tel. No.: (644) 816 4366/816 2000, Fax No.: (644) 816 2191/  
496 2191, E-mail: darren\_hunt@moh.govt.nz

PHILIPPINES

Dr Vito ROQUE, JR, Medical Specialist IV and Surveillance Unit Head,  
Public Health Surveillance and Informatics Division,  
Department of Health, Building 14, San Lazaro Compound,  
Rizal Avenue, Sta Cruz, 1003 Manila

Mr Aldrin REYES, Supervising Health Programme Officer,  
National Center for Disease Prevention and Control,  
Department of Health, Building 14, San Lazaro Compound,  
Rizal Avenue, Sta Cruz,  
1003 Manila. Tel. No. : (632) 633 2866,  
E-mail: buboyjed@yahoo.com

REPUBLIC OF KOREA Dr Jun-wook KWON, Director-General, Center for Infectious Surveillance and Response, Disease Control Korea Center for Disease Control, 187 Osongsaengmyeong 2(i)-ro, Osong-eup, Chungcheongbuk-Do 363-951, Tel. No.: (82) 43719 7100, Fax No.: (82) 43719 7102, E-mail : jwk9925@hanmail.net

SINGAPORE Ms TAN Bok Huay, Assistant Director, Surveillance and Response Communicable Diseases Division, Ministry of Health, 16 College Road, Singapore 169854. Tel No.: (65) 6325 9090, Fax No.: (65) 6221 5538, E-mail: foong-buk-huay@moh.gov.sg

VIET NAM Dr TRAN Thanh Duong, Deputy Director-General, General Department of Preventive Medicine, Ministry of Health 138A Giangvo, Badinh, Hanoi. Tel. No.: (844) 845 6255, Fax No.: (844) 736 6241, E-mail: Tranthanhduong@hotmail.com

#### 5. OBSERVERS/REPRESENTATIVES

ASIAN DEVELOPMENT BANK Ms Patricia MOSER, Lead Health Specialist Poverty Reduction, Gender and Social, Development Division, Regional and Sustainable Development Department, 6 ADB Avenue, Mandaluyong City, Philippines. Tel. No.: (632) 632 6329, Fax No.: (632) 636 2200, E-mail: pmoser@adb.org

AUSTRALIAN AGENCY FOR INTERNATIONAL Ms Renee MARTIN, Policy Officer, Education and Health Branch, GPO. Box 887, Canberra ACT 2601, Australia. Tel. No.: (612) 6178 5761, Fax No.: (612) 6178 4242 E-mail: Renee.Martin@ausaid.gov.au

EMBASSY OF JAPAN Dr Junichi NITTA, Health Attaché, Embassy of Japan, 2627 Roxas Boulevard, Pasay City, Philippines. Tel No.: (632) 551 5710 ext 2118, Fax No.: (632) 551 5783 E-mail: junichi.nitta@mofa.go.jp

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS Ms Carolyn BENIGNO, Animal Health Officer, Regional Office for Asia and the Pacific, 39 Phra Athit Road, Bangkok 20100, Thailand. Tel No.: (662) 697 4330, Fax No.: (662) 697 4445, E-mail: Carolyn.Benigno@fao.or

JAPAN INTERNATIONAL COOPERATION AGENCY Dr Mitsuhiro USHIO, Executive Technical Advisor to the Director-General, Human Development Department, Nibancho Center Building, 5-25, Niban-cho Chiyoda-ku, Tokyo 162-0067, Japan. Tel. No.: (813) 5369 7445, Fax No.: (813) 5369 7434, E-mail: ochiai.naoko@jics.or.jp

JAPAN INTERNATIONAL  
COOPERATION  
SYSTEM

Ms Naoko OCHIAI, International Organization Division,  
Third Management Department, Third Floor Shinjuku East Building,  
10-5 Tomohisacho, Shinjuku-ku, Tokyo 162-0067, Japan.  
Tel. No.: (813) 5369 7445, Fax No.: (813) 5369 7434,  
E-mail: [ochiai\\_naoko@jics.or.jp](mailto:ochiai_naoko@jics.or.jp)

Ms Sayuri YAMAMOTO, International Organization Division,  
Third Management Department, Japan International Cooperation System  
Third Floor Shinjuku East Building, 10-5 Tomohisacho, Shinjuku-ku,  
Tokyo 162-0067, Japan. Tel No.: (813) 5369 7453,  
Fax No.: (813) 5369 7434, E-mail: [yamamoto\\_sayuri@jics.or.jp](mailto:yamamoto_sayuri@jics.or.jp)

JAPAN NATIONAL  
CENTER FOR GLOBAL  
HEALTH AND MEDICINE

Dr Masahiko HACHIYA, Medical Officer, Head of Infectious Disease  
Control Group, Bureau of International Medicine Cooperation,  
1-21-1, Tomaya, Shinjuku-ku, Tokyo 162-8655, Japan.  
Tel. No.: (813) 3202 7181, Fax No.: (813) 3205 7860,  
E-mail: [m-hachiya@it.ncgm.go.jp](mailto:m-hachiya@it.ncgm.go.jp)

KOREA CENTERS FOR  
DISEASE CONTROL  
AND PREVENTION

Dr HONG Gi-Sung, Deputy Director, Division of Infectious  
Disease Control, Center for Infectious Disease Surveillance  
and Response, Ministry of Health and Welfare, Osong Health  
Technology Administration Complex, 187 Osongsaengmyeong 2(i)-ro,  
Osong-eup, Cheonwon-gun, Chuncheongbuk-do 363-700,  
Republic of Korea. Tel. No.: (8243) 719 7128,  
Fax No.:(8243) 719 7139, E-mail: [hgshg1121@hanmail.net](mailto:hgshg1121@hanmail.net)

Dr CHU Chaeshin, Managing Editor, The Osong Public Health and  
Research Perspective, The Osong Public Health and Research  
Perspective, Ministry of Health and Welfare, Osong Health Technology  
Administration Complex, 187 Osongsaengmyeong 2(i)-ro,  
Osong-eup, Cheonwon-gun, Chuncheongbuk-do 363-700,  
Republic of Korea. Tel. No.: (8243) 719 7197,  
Fax No.:(8243) 719 7219, E-mail: [sammidori@empal.com](mailto:sammidori@empal.com).

MEKONG BASIN  
DISEASE  
SURVEILLANCE AND  
COORDINATING  
OFFICE

Dr Moe Ko OO, Regional Coordinator, Mekong Basin Disease  
Surveillance Coordinating Office c/o Ministry of Health,  
Department of Disease Control, Bldg 8, Fourth Floor, Tiwanond Road,  
Nonthaburi 11000, Thailand. Tel. No.: (662) 590 3343,  
Fax No.: (662) 590 3323, E-mail: [moekooo2003@yahoo.com](mailto:moekooo2003@yahoo.com)

REGIONAL EMERGING  
DISEASES  
INTERVENTION  
CENTRE

Dr Rodney HOFF, Executive Director, Regional Emerging Diseases  
Intervention (REDI) Centre, 10 Biopolis Road, #02-01 Chromos,  
Singapore 138670, Republic of Singapore. Tel. No.: (65) 6874 7030,  
Fax No.: (65) 8228 3594, E-mail: [RHoff@redi.org.sg](mailto:RHoff@redi.org.sg)

UNITED NATIONS  
CHILDREN'S FUND

Dr Paulo FROES, Immunization Specialist, Child Survival and  
Health Section, UNICEF East Asia and Pacific Regional Office,  
19 Phra Atit Road, Chanasongkram, Phra Nakorn, Bangkok 10200,  
Thailand. Tel. No.: (662) 356 9499, Fax No.: (662) 280 3563,  
E-mail: [pfroes@unicef.org](mailto:pfroes@unicef.org)

UNITED STATES  
AGENCY FOR  
INTERNATIONAL  
DEVELOPMENT

Dr Yolanda E. OLIVEROS, Development Assistance Specialist,  
Office of Health, United States Agency for International,  
Development, 8/F PNB Financial Center, Diosdado Macapagal  
Boulevard, Pasay City, Philippines. Tel. No.: (632) 552 9867,  
Fax No.: (632) 552-9999, E-mail: yoliveros@usaid.gov

UNITED STATES  
CENTERS FOR  
DISEASE CONTROL

Dr Goldie MACDONALD, Health Scientist Office of the  
Director Center for Global Health, United States Centers for Disease  
Control and Prevention, 1600 Clifton Road, Mailstop D-69, Atlanta,  
GA 30333, United States of America. Tel. No.: (1404) 409 6203,  
Fax No.: (1404) 409 4001, E-mail: gim2@cdc.gov

Dr Andrew CORWIN, In-Country Coordinaton, CDC–WHO  
Collaboration, United States Centers for Disease Control and Prevention,  
United States Embassy, Vientiane Capital, Lao People's Democratic  
Republic. Tel. No. : (856) 2126 7059, Mobile No.: (856) 5552 1249,  
E-mail: CorwinAL@state.gov, CorwinAL2E@yahoo.com

UNITED STATES  
DEPARTMENT  
OF HUMAN HEALTH

Dr Anne YU, Acting Deputy Director, and Senior International  
Health Analyst, International Influenza Unit, Office of Global Affairs,  
Department of Health and Human Services,  
200 Independence Avenue SW, Washington, DC 20201,  
United States of America. Tel. No.: (1202) (1202) 205 5534,  
E-mail: anne.yu@hhs.gov

UNITED STATES  
DEPARTMENT  
OF STATE

Dr Brett GOODE, Program Officer, Biosecurity Engagement Program,  
Office of Cooperative Threat Reduction, Bureau of  
International Security and Nonproliferation, United States Department  
of State, 2201 C Street NW, Washington, DC 20520, United States of  
America. Tel No.: (1202) 304 8051, E-mail: GoodeBE@state.gov

WORLD  
ORGANISATION  
FOR ANIMAL HEALTH

Dr Ronello ABILA, OIE Sub-regional Representative,  
for South-East Asia, c/o Department of Livestock Development,  
69/1 Phaya thai Road, Rachathewi 10400, Bangkok, Thailand.  
Tel. No. : (66) 2653 48 64, Fax No.: (66) 2653 4904,  
E-mail : r.abila@oie.int

## 6. SECRETARIAT

### WHO/WESTERN PACIFIC REGIONAL OFFICE

Dr LI Ailan, Acting Director, Division of Health Security and Emergencies, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines.  
Tel. No.: (632) 528 9784, Fax No.: (632) 521 1036, E-mail: [lia@wpro.who.int](mailto:lia@wpro.who.int)

Dr Chin Kei LEE, Medical Officer and Team Leader, Emerging Disease Surveillance and Response, Division of Health Security and Emergencies, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines.  
Tel. No.: (632) 528 9944, Fax No.: (632) 521 1036, E-mail: [leec@wpro.who.int](mailto:leec@wpro.who.int)

Dr Gabit ISMAILOV, Programme Management Officer, Division of Health Security and Emergencies, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines. Tel. No.: (632) 528 9950,  
Fax No.: (632) 521 1036, E-mail: [ismailovg@wpro.who.int](mailto:ismailovg@wpro.who.int)

Dr Jeffrey PARTRIDGE, Epidemiologist, Emerging Disease Surveillance and Response, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines. Tel. No.: (632) 528 9732, Fax No.: (632) 521 1036,  
E-mail: [partridgej@wpro.who.int](mailto:partridgej@wpro.who.int)

Dr Tamano MATSUI, Medical Officer, FETP Coordinator, Emerging Disease Surveillance and Response, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines. Tel. No.: (632) 528 9828, Fax No.: (632) 521 1036,  
E-mail: [matsuit@wpro.who.int](mailto:matsuit@wpro.who.int)

Dr Ruth FOXWELL, Technical Officer (Risk Assessment) Emerging Disease Surveillance and Response, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines. Tel. No.: (632) 528 9916, Fax No.: (632) 521 1036,  
E-mail : [foxwella@wpro.who.int](mailto:foxwella@wpro.who.int)

Dr Frank KONINGS, Technical Officer (Laboratory), Emerging Disease Surveillance and Response, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines. Tel. No.: (632) 528 9948, Fax No.: (632) 521 1036,  
E-mail: [koningsf@wpro.who.int](mailto:koningsf@wpro.who.int)

Dr Yuzo ARIMA, Surveillance Officer, Emerging Disease Surveillance and Response, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines. Tel. No.: (632) 528 9783, Fax No.: (632) 521 1036,  
E-mail: [arimay@wpro.who.int](mailto:arimay@wpro.who.int)

Ms Michelle MCPHERSON, Technical Officer (Communicable Diseases), Emerging Disease Surveillance and Response, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines. Tel. No.: (632) 528 9920, Fax No.: (632) 521 1036,  
E-mail: [mcpersonm@wpro.who.int](mailto:mcpersonm@wpro.who.int)

Ms Joy Rivaca CAMINADE, Technical officer, (Risk Communication), Emerging Disease Surveillance and Response, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines. Tel. No.: (632) 528 9986. Fax No.: (632) 521 1036, E-mail: [caminadej@wpro.who.int](mailto:caminadej@wpro.who.int)

Mr Remy PROHOM, Technical officer, (Logistics), Emerging Disease Surveillance and Response, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines. Tel. No.: (632) 528 9915. Fax No.: (632) 521 1036, E-mail: [prohomr@wpro.who.int](mailto:prohomr@wpro.who.int)

Dr Satoko KIYOTA, Consultant, Emerging Disease Surveillance and Response, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines. Tel. No.: (632) 528 9915. Fax No.: (632) 521 1036, E-mail: [kiyotas@wpro.who.int](mailto:kiyotas@wpro.who.int)

Ms Ellen DONAN, Consultant, Emerging Disease Surveillance and Response, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines. Tel. No.: (632) 528 9949. Fax No.: (632) 521 1036, E-mail: [donnane@wpro.who.int](mailto:donnane@wpro.who.int)

Ms Baktygul AKKAZIEVA, Consultant, Emerging Disease Surveillance and Response, World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines. Tel. No.: (632) 528 8001. Fax No.: (632) 521 1036, E-mail: [apsed2010@wpro.who.int](mailto:apsed2010@wpro.who.int)

Dr ZHANG Xiadong, National Professional Officer, Emerging Disease Surveillance and Response, World Health Organization, 401 Dongwai Diplomatic Office Building, 23, Dongzhimenwai Dajie, Chaoyang District, Beijing 1000600, People's Republic of China. Tel. No.: (8610) 6532 7189, Fax No.: (8610) 6532 2359, E-mail: [zhangxia@wpro.who.int](mailto:zhangxia@wpro.who.int)

Dr Reiko TSUYUOKA, Scientist and Team Leader, Emerging Disease Surveillance and Response, Neglected Tropical Diseases, World Health Organization, 125 Saphanthong Road, Unit 5, Ban Saphangthongtai, Sisattanak District, Vientiane Capital, Lao People's Democratic Republic. Tel. No.: (856) 21 353 902 904, Fax No.: (856) 2135 3905, E-mail: [tsuyuokar@wpro.who.int](mailto:tsuyuokar@wpro.who.int)

Dr LUO Dapeng, Medical Officer and Team Leader, Emerging Disease Surveillance and Response, World Health Organization, Ministry of Health, Government Building 8, Ulaanbaatar, Mongolia, Tel. No.: (976) 11 327 870, Fax No.: (976) 11 324 683, E-mail: [LuoD@wpro.who.int](mailto:LuoD@wpro.who.int)

Dr Nerissa DOMINGUEZ, National Professional Officer, Emerging Disease Surveillance and Response, World Health Organization, National Tuberculosis Centre Building, Second Floor Building 9, Department of Health, San Lazaro Hospital Compound, Sta Cruz, Manila, Philippines. Tel. No.: (632) 528 9766, Fax No.: (632) 731 3914, E-mail: [dominguezn@wpro.who.int](mailto:dominguezn@wpro.who.int)

Dr Babatunde OLOWOKURE, Medical Epidemiologist, Emerging Disease Surveillance and Response, World Health Organization, 63 Tran Hung Dao Street, Hoan Kiem District, Ha Noi, Socialist Republic of Viet Nam. Tel. No.: (844) 943 3734 / 3735 / 3736, Fax No.: (844) 3943 3740, E-mail: [olowokureb@wpro.who.int](mailto:olowokureb@wpro.who.int)

WHO SOUTH-EAST ASIA REGIONAL OFFICE

Dr Gyanendra GONGAL, Scientist, Veterinary Public Health, Communicable Disease Surveillance and Response, World Health Organization, South-East Asia Regional Office, Indraprastha Estate, Mahatma Gandhi Marg, New Delhi/110002, India.  
Tel. No.: (9111) 2337 0804 Ext. 26647 Fax No.: (9111) 2337 0197,  
E-mail: [gongalg@searo.who.int](mailto:gongalg@searo.who.int)

WHO/HEADQUARTERS

Dr Stella CHUNGONG, Coordinator, International Health Regulations Monitoring Procedures and Information, Health Security and Environment, World Health Organization, 20, Avenue Appia CH-1211, Geneva, Switzerland, Tel No.:: (4122) 2791 2377,  
Fax No.: (4122) 791 4667, E-mail: [chungongs@who.int](mailto:chungongs@who.int)