REPORT

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

Convened by:

WORLD HEALTH ORGANIZATION
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NOTE

The views expressed in this report are those of the participants in the Regional Meeting of the Asia Pacific Technical Advisory Group on the Asia Pacific Strategy for Emerging Diseases (2010) 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 Regional Meeting of the Asia Pacific Strategy for Emerging Diseases (2010), held in Manila, Philippines from 15 to 17 July 2014.
## ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>APSED</td>
<td>Asia Pacific Strategy for Emerging Diseases</td>
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<tr>
<td>EBS</td>
<td>Event-based surveillance</td>
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<td>EID</td>
<td>Emerging infectious disease</td>
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<td>EIS</td>
<td>Event Information Site</td>
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<td>EOC</td>
<td>Emergency Operations Centre</td>
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<td>EQA</td>
<td>External quality assessment</td>
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<td>ERF</td>
<td>Emergency Response Framework</td>
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<td>FETP</td>
<td>Field Epidemiology Training Programme</td>
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<td>GBS</td>
<td>Guillain-Barre syndrome</td>
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<td>GOARN</td>
<td>Global Outbreak Alert and Response Network</td>
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<td>IBS</td>
<td>Indicator-based surveillance</td>
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<td>IHR</td>
<td>International health Regulations</td>
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<td>ILI</td>
<td>Influenza-like illness</td>
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<td>INFOSAN</td>
<td>International Food Safety Authorities Network</td>
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<td>IPC</td>
<td>Infection prevention and control</td>
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<td>M&amp;E</td>
<td>Monitoring and evaluation</td>
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<td>MERS-CoV</td>
<td>Middle East respiratory syndrome coronavirus</td>
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<td>MySED</td>
<td>Malaysia Strategy for Emerging Diseases</td>
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<td>NIC</td>
<td>National Influenza Centre</td>
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<td>NFP</td>
<td>National IHR Focal Point</td>
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<tr>
<td>PHEIC</td>
<td>Public Health Emergency of International Concern</td>
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<td>POE</td>
<td>Point of entry</td>
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<tr>
<td>PPE</td>
<td>Personal protective equipment</td>
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<tr>
<td>SARI</td>
<td>Severe acute respiratory infection</td>
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<td>SARS</td>
<td>Severe acute respiratory syndrome</td>
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<td>TAG</td>
<td>Technical Advisory Group</td>
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<td>WPSAR</td>
<td>Western Pacific Surveillance and Response Journal</td>
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SUMMARY

The Regional Meeting of the Asia Pacific Technical Advisory Group on the Asia Pacific Strategy for Emerging Diseases (2010) was held in Manila, Philippines from 15 to 17 July 2014. With Member States now past the mid-point of the five-year implementation of the Asia Pacific Strategy for Emerging Diseases (APSED) (2010), and with International Health Regulations (IHR) (2005) core capacities expected to be fully operational, review of the progress toward collective health security was timely.

The participants received an update on the emerging infectious disease (EID) situation across the Region and selected global public health events. The meeting also reviewed strategies for strengthening rapid response capacities and how monitoring and evaluation activities can support both service development and provide a basis for mobilizing resources and accountability. Development partners, including donors and technical and operational partners, discussed their experience of fostering regional health security.

The meeting was interrupted by the Category 3 Typhoon Rammasun (Glenda). However, flexibility and strong support from the participants enabled the meeting to achieve its objectives. The Region continues to face significant risks from many emerging, epidemic-prone diseases.

Progress has been made on many fronts. This includes the ongoing multi-level surveillance and control of avian influenza A(H7N9) in China and the timely detection and reporting to WHO by Malaysia of the first case of MERS-CoV in the Region. Progress with field epidemiology training programmes in the Region includes a practical “home-grown” programme in Papua New Guinea.

Nine countries in the Region have requested final two-year extensions until June 2016 to fulfil IHR core capacity requirements. Recent experience with serious cross-border emerging infectious diseases (EIDs) also show that capacities developed in Member States must be maintained, and vigilance and preparedness further strengthened both for familiar threats and unexpected events. Indicators suggest the need to further enhance generic public health emergency preparedness at the national and local levels, as well as at points of entry (POEs). While progress has been achieved in most of the eight APSED (2010) focus areas, it is important to strengthen integration and linkages among them. The value of integrating the focus areas is summarized in the country case studies in Asia Pacific Strategy for Emerging Diseases Progress Report 2014: Securing regional health.

To further develop and maintain IHR core capacities through APSED (2010), Member States that have sought second IHR extensions should accelerate implementation of their national workplans. Member States not seeking extensions should enhance their capacities and support other Member States where appropriate. Generic surveillance, risk assessment, response and reporting capacities are subject to periodic review and improvement. These generic capacities also should be scalable during times of heightened risk and response, coordinated when required by a proven public health emergency plan and a functional emergency operations centre (EOC). The National IHR Focal Point (NFP) can play a vital leadership and coordination role, in routine responses and emergencies, with established linkages and arrangements with sectors related to health security including animal health, environmental health, food safety and emergency management. Continued efforts in resource mobilization, utilization of the APSED planning and review process and the outcomes of the participatory evaluation of APSED scheduled in late 2014 will provide the way forward for sustainable capacity development beyond 2016.

The meeting made recommendations for the ongoing implementation of IHR (2005) using the APSED (2010) framework, including priorities for the coming 12 months.
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Key words:
Communicable diseases, Emerging/Disease outbreaks – prevention and control/Disaster
planning
1. INTRODUCTION

The Regional Meeting of the Technical Advisory Group on the Asia Pacific Strategy for Emerging Diseases (2010) was held in Manila, Philippines from 15 to 17 July 2014. The meeting reviewed progress in APSED (2010) implementation in the last 12 months. The first extension to the target date for developing IHR core capacity requirements ended in June 2014. Several Member States have applied for second extension until June 2016.

1.1 Objectives

The objectives of the meeting were:

1) to provide a regional and global update on emerging infectious diseases and other public health emergencies;
2) to review the progress in implementing the Asia Pacific Strategy for Emerging Diseases (2010), including the national status towards fulfilling the IHR core capacity requirements; and
3) to recommend common priority activities for the coming year before the next Technical Advisory Group meeting in 2015.

1.2 Welcome and opening remarks

Dr Takeshi Kasai, on behalf of Dr Shin Young-Soo, Regional Director, WHO Regional Office for the Western Pacific

On behalf of Dr Shin Young-soo, WHO Regional Director for the Western Pacific, Dr Kasai Takeshi, Director, Programme Management, WHO Regional Office for the Western Pacific welcomed participants to the meeting. Health security continues to be an area of focus and attention. Now past the mid-point of APSED (2010) implementation, Member States were encouraged to continue using the APSED (2010) and IHR (2005) as a framework to achieve collective public health security.

Five years on from the influenza pandemic and more than 10 years since the severe acute respiratory syndrome (SARS), the world and the Western Pacific Region are better prepared to detect and respond to public health threats. However, the ongoing management of endemic diseases as well as significant new disease threats remain a challenge for many countries. Across the Region, the umbrella of APSED (2010) has supported considerable development of country-level and regional readiness and response capabilities. Donors, partners and other stakeholders have contributed in this regard. This has made a positive difference “on the ground”, with field epidemiology training programmes (FETP) taking root across the region and emergency operations centres (EOCs) becoming operational and progressively more capable. The practical and expert advice of the Technical Advisory Group (TAG) has steered the process of implementation and strengthened the focus on monitoring and evaluation. Dr Kasai reminded participants of the need to take the shared lessons and recommendations from the meeting back to their countries. Participants would play a vital role in leading and supporting the implementation of the guidance and priorities identified in the context of the combined APSED and IHR framework for health security.

1.3 Organization of the meeting

The meeting comprised a series of presentations that updated 45 participants and partners on regional and selected global EID threats and country-level experience with APSED (2010) as a framework for implementation of IHR (2005). This included information on the second round of extensions to the deadline for IHR core capacities. Participants also reviewed the draft APSED Progress Report 2014:
Securing regional health, which provided summary updates on the eight focus areas and informative case studies of disease outbreaks and other public health emergency responses.

The meeting was disrupted on 16 July 2014 by Typhoon Glenda, but the programme was reorganized with most of the Day 2 presentations and activities rescheduled to an extended programme for Day 3. Three group breakout sessions were conducted to discuss monitoring and evaluation, strengthening preparedness and rapid response, and a partners’ forum on regional health security. Feedback from the group work was presented and discussed in plenary sessions.

Professor John Mackenzie was appointed Chair. Dr Haruo Watanabe was appointed Co-Chair for the meeting.

2. PROCEEDINGS

2.1 Plenary 1: Overall progress of IHR and APSED

2.1.1 IHR (2005) – Opportunities and challenges

Presenter: Dr Li Ailan, Director, Division of Health Security and Emergencies, WHO Regional Office for the Western Pacific

“Disaster scenario” disease threats have a place in popular culture. While popular culture is more about entertainment than accuracy, it can still influence and reflect public perceptions and concerns. In emergency responses there will be uncertainty and the situation will be dynamic, with potentially significant health consequences. There is no universal solution other than generic preparedness and equipping ourselves to manage risk. Major disease events, as well as causing mortality and morbidity, also have significant flow-on social and economic effects. Previous assessments of wider consequences suggest that a single EID case can give rise to a US$2 million cost in terms of wider economic impact. IHR (2005) provides a global framework to strengthen global health security while minimizing unnecessary disruption to travel and trade. APSED (2010) provides a roadmap to the ongoing implementation of IHR requirements that all countries in the Region have signed up to.

In 2012, 14 countries out of 27 in the Region sought IHR extensions until 2014. During 2014, nine countries requested further extensions. This shows that Member States take their IHR obligations seriously, and are using the transparent and formal structure of extensions to further strengthen their core capacities. A number of acute public health events have also tested IHR/APSED progress, including dengue in Fiji, the Lao People’s Democratic Republic and Solomon Islands, avian influenza A(H5N1) in Cambodia, MERS-CoV in Malaysia and an unknown event involving horse and human fatalities in a remote area of the Philippines. In terms of multi-region surveillance, IHR (2005) supports WHO with its global risk management function. WHO’s secure Event Information Site (EIS) allows Member States to access authoritative information and National IHR Focal Points (NFPs) are encouraged to make full use of the website for their situational awareness of emerging public health threats.

For Member States to implement their updated IHR implementation plans is both a challenge and an opportunity. The same applies to enhancing existing relationships with other agencies and technical partners. And finally, we must all seek to maintain momentum, even as we approach the final years of both the IHR (2005) and APSED (2010) timelines. They are not final destinations, but rather milestones on an ongoing journey towards regional health security.
2.1.2 Global progress on IHR (2005) implementation

Presenter: Dr Florence Janine Fuchs, Coordinator, IHR Capacity Assessment, Development and Maintenance, WHO headquarters

The IHR monitoring tool was launched in 2009, using 20 indicators and 256 attributes. It provides a valuable “moving picture” of progress at a global, regional and country level. From this information, the Western Pacific Region is performing above the global average on most indicators. WHO has a new website, the Global Health Observatory – http://www.who.int/gho/en/ – providing information on IHR (2005) programmes and topics, including year-by-year evolution. The website also allows retrieval of reports, by region and capacity on progress with implementation. In the Western Pacific Region, surveillance capacities are generally good but a more variable picture emerges for chemical and radiological response capacities. A flexible IHR costing tool is being developed, hopefully to be completed by the end of 2014, to assist with indicative cost estimates for capacities and functions. Across all six WHO regions as of 10 July:

1) 42 countries have stated that their core capacities were fully functional in 2012 and an additional 18 countries in 2014;
2) 69 countries have applied for a the second extension period (2014 to 2016);
3) It is of some concern that 60 countries have had no official communication with WHO about the second extension period.

More than half of the 69 countries requesting second extensions have submitted incomplete implementation plans, and 13 have not submitted an implementation plan. At the World Health Assembly in May 2014, 28 countries made interventions on the IHR (2005), including several from the Western Pacific Region. Some highlighted positive achievements and others identified specific needs for further capacity-building. Globally, radiological, chemical and points of entry (POE) capacities remain the weakest. Political support key to drive national implementation. WHO is also aware of the need for improved multisectoral collaboration and coordinated and cooperative implementation at the regional and subregional level. As we move into the second extension period, frameworks like APSED (2010) provide a good opportunity to share best practices and tailor implementation to regional conditions. The World Health Assembly has previously resolved to standardize and simplify the ongoing monitoring of IHR implementation as we move forward and start to prepare for the post-2016 environment.

2.1.3 Regional progress on IHR (2005) through APSED (2010)

Presenter: Dr Chin Kei Lee, Team Leader, Emerging Disease Surveillance and Response, WHO Regional Office for the Western Pacific

Focus Area 1: Surveillance, risk assessment and response – this is central to APSED (2010). Event-based surveillance (EBS) and indicator-based surveillance (IBS) have been strengthened and tested with measles, dengue, chikungunya and Zika virus and other disease outbreaks across the Region. The surveillance capabilities of China and Malaysia were demonstrated respectively by the first reported cases of influenza A(H7N9) and the detection of the first case of MERS-CoV in the Region. It is pleasing that FETPs are progressing well in countries such as Mongolia, Papua New Guinea, the Philippines and Viet Nam, with graduates proving their worth in a number of field investigations. As FETPs support “frontline” surveillance, risk assessment and rapid response capacities, it is vital to ensure the sustainability of these programmes nationally and across the Region.

Focus Area 2: Laboratory – focusing on both national reference laboratories as well as subnational laboratory capacity. Laboratories contribute directly to both clinical management and surveillance activities. Collaboration networks are important for effective functionality, including referral procedures to national and international reference laboratories. China recently hosted a National Influenza Centres (NIC) meeting in Beijing. Participation in External Quality Assurance Programme (EQAP) activities for influenza laboratories has steadily improved between 2007 and 2013. Several
high-performing NICs also provided leadership to support the development of testing capability for MERS-CoV across the Region.

**Focus Area 3: Zoonoses** – the focus remains on improved communication and coordination with animal health surveillance, response and laboratory functions. This needs to occur at national and local levels. In addition to the agricultural and food safety sectors, collaboration may also need to extend to the wildlife sector. The benefits of strong cooperation have been shown in avian influenza responses in China and the Lao People’s Democratic Republic.

**Focus Area 4: Infection prevention and control (IPC)** – 96% of countries in the Western Pacific Region have national IPC policies and guidelines. IPC is critical for EIDs such as MERS-CoV (and previously SARS), where a significant number of secondary infections occur in health-care settings.

**Focus Area 5: Risk communications** – the focus is on health emergency communications, including development of risk communication plans. The WHO Regional Office for the Western Pacific has developed a framework to support countries. The framework has been tested in operational responses and in simulation exercises, for example in Cambodia. Working with social media continues to be challenging in some situations.

**Focus Area 6: Public health emergency preparedness** – the need for functional EOCs was reiterated. This is not only the facility (the rooms, computers and communications equipment) itself, but most critically staff with the training, expertise and confidence to operate in stressful situations. WHO Regional Office for the Western Pacific strengthens and maintains the functions of NFPs through the annual IHR event communication exercise “Crystal”, with 23 Member States participating in its fifth exercise held in December 2013. Most Member States in the Western Pacific Region are using WHO’s Event Information Site (EIS) and many are increasing their use of this website for risk assessment purposes. Points of entry emergency preparedness, building on core capacities for designated POE, has also been a priority area, with China’s Health Quarantine and Inspection Department of the General Administration of Quality Supervision Inspection and Quarantine, achieving status as a WHO Collaborating Centre for Points of Entry, only the second in the world. Another priority is the development of generic public health emergency plans, building on experience with pandemic influenza and POE public health emergency contingency plans.

**Focus Area 7: Regional preparedness, alert and response** – looks at collective capacities across the region and WHO’s capacity to integrate surveillance information and support responses with risk assessment and direct technical assistance in the Western Pacific Region. The Regional Office has also upgraded its own EOC facility, activating it to support the responses to avian influenza A(H7N9) in China, dengue in the Lao People’s Democratic Republic and Typhoon Haiyan in the Philippines. The Regional Office has run a regional FET Fellowship Training Programme, with more than 50 fellows from 13 Member States to date. The Regional Office has also been actively involved in Global Outbreak Alert and Response Network (GOARN) for the typhoon and other situations. The Western Pacific Surveillance and Response Journal (WPSAR) is used to share information regionally, for example, reporting on New Zealand’s experience with SARI surveillance. Gender and age analysis has helped with risk assessment and response to avian influenza A(H7N9) in China, including analysis of different trends between the two waves observed to date.

**Focus Area 8: Monitoring and evaluation (M&E)** – occurs at country and regional levels through the implementation of the planning and review process, including review and advice by the Technical Advisory Group at regional level. The TAG meeting takes place both in the South-East Asia Region and the Western Pacific Region, with the two regions combining the meeting every other year. A draft Monitoring and Evaluation Guide for APSED (2010) has been developed and adopted bi-regionally and an Outbreak Review Guide has been prepared to assist countries to learn from their own response experiences.

There is a need to build on the considerable progress on APSED. Member States should not conclude that the approaching deadlines for APSED (2010) and IHR (2005) mean that we can relax or in any way reduce our commitment. Rather, mindful of the continued risk of EIDs, we need to look to the
future, redouble our efforts and move to a model of continuous improvement on all core capacities and focus areas.

2.1.4 Discussion
The new WHO Emergency Response Framework (ERF) was explained. WHO now uses a simple three-tier classification for emergencies:

* **Grade 1** is for responses to acute events run largely by the country itself. Such events may involve the WHO country office, but with relatively minimal support needed from the regional office;

* **Grade 2** events require active regional coordination and support to affected country or countries;

* **Grade 3** is for major events which overwhelm the regional office and which require multiregional or global response, for example the response to Typhoon Haiyan in the Philippines in 2013.

As APSED (2010) ends, clarification was sought as to WHO’s priorities in the Region for the next period:

- With two more years to achieve IHR core capacities through APSED (2010), support to countries seeking final extensions and also the countries which have not communicated with WHO about the final deadline;

- Readiness for new EIDs such as multiple avian influenzas and MERS-CoV, for which generic public health emergency plans and functional EOCs will be vital;

- Monitoring and evaluation activities by countries— to review progress, to identify their own achievements, gaps and priorities and assist in maintaining and/or seeking resources.

Countries that have fully implemented the core capacities should seek to continue to improve and can consider assisting other countries. Management of public health events may also occupy staff time. For example, measles outbreak response in New Zealand has drawn on staff who contribute to generic health sector emergency preparedness. Countries that have the ability to support others could for example, assist extension countries to progress towards effective core capacities, contributing to collective health security. This would help all countries move beyond the IHR (2005) and APSED (2010) deadlines and focus on the ongoing maintenance and strengthening of capacities for surveillance, risk assessment, response and reporting (which must function locally, nationally, and at the border). In each crisis lies an opportunity— to gain experience, train new staff, learn, revise SOPs and refresh relationships with agencies and stakeholders. Singapore has a dedicated emergency planning and preparedness unit, which in peacetime also runs exercises.

The “yes”, “no” and “unknown” format of the IHR questionnaire was also raised, as it can mask practical realities. For example, where a negative answer is given, the Member State may still have a functional capability, while in other instances, a “yes” answer may be brushing over shortfalls. WHO acknowledged the need to include qualitative information with a focus on functionality, rather than purely quantitative assessment.

2.2 Plenary 2: Emerging Infectious Diseases (EIDs) – Ongoing health security threats

2.2.1 Overview of public health events in the Western Pacific Region
*Presenters: Dr Tomoe Shimada, Medical Officer (FETP), and Ms May Chiew, Technical Officer (Surveillance), Emerging Disease Surveillance and Response, WHO Regional Office for the Western Pacific*

The Asia Pacific region is a hot spot for EIDs including many strains of avian influenza. There are a wide range of other epidemic-prone diseases, food safety incidents and natural disasters (including a typhoon heading towards Manila). The WHO Regional Office for Western Pacific uses EBS and IBS to monitor emerging and re-emerging diseases and assesses the risk from a regional perspective.
The epidemic curve of the number of cases of human infection with avian influenza A(H7N9) virus has now shown two distinct waves. The large majority of cases have been reported in China, with the first case in Malaysia reported in February 2014. There is no evidence of sustained human-to-human transmission of avian influenza A(H7N9) virus and health care-associated clusters have not been reported to date. The Regional Office expects other countries to detect and report further human infection with avian influenza A(H7N9) virus in travellers from affected areas. Human infections with other avian influenza subtypes have also been reported by China, including H5N6, H9N2, and H10N8. Avian influenza A(H5N1) virus continues to remain an ongoing risk in the Western Pacific Region. In 2013, of all cases of human infections with avian influenza A(H5N1) with known exposure history, over 80% reported exposure to sick or dead poultry. The current risk assessment is that there remains a low risk of sustained human-to-human transmission of the virus.

In 2013, the Lao People’s Democratic Republic experienced its largest ever recorded outbreak of dengue, with over 44,000 cases reported. Chikungunya, Zika and dengue have also been reported in a number of Pacific island countries, including significant outbreaks in Cook Islands, Fiji and Tonga. The Philippines’ EBS system recently detected an alleged horse meat poisoning event. Field investigation identified 23 human cases of severe acute encephalitis, including nine deaths – a henipavirus is suspected. In early 2014, the Middle East reported an upsurge in the number of cases with MERS-CoV infection and in April 2014 Malaysia reported the first case of MERS-CoV in the Western Pacific Region. The Regional Office expects there to be a moderate to high risk of further cases of MERS-CoV being imported into the Region. The risk of Ebola cases being detected in the Region is considered low.

2.2.2 Human infection with avian influenza A(H7N9) virus in China

Presenter: Dr Ni Daxin, Assistant Director, Public Health Emergency Centre, Chinese Centre for Disease Control and Prevention, China

China detected a new avian influenza virus, A(H7N9) in early 2013 and it is now known to be present in 15 provinces. H7N9 has shown a second, longer wave in early 2014, with more cases in a greater number of locations than the initial wave. The majority of cases are occurring in southern and eastern mainland China. The first case has now been reported outside of China by Malaysia. There is still no evidence of sustained human-to-human transmission and the large majority of cases reported exposure to live bird markets. There were four family clusters in the first wave and 10 family clusters in the second wave. Control measures include:

1) enhanced surveillance to detect cases (influenza-like illness, aetiology unknown pneumonia and SARI surveillance) with standard syndromic definitions across all provinces;
2) rapid steps to support case diagnosis and treatment;
3) live poultry management and transport control varying from province to province, including closure of some live bird markets and a “1110” policy in others, i.e. active cleaning and disinfection daily, clean up weekly, closure once a month and no live birds kept in the market overnight; and
4) active use of risk communication to support all these measures.

China has also provided frequent updates to WHO on the evolution of H7N9 and its response measures. As of June 2014, 6262 contacts of the 433 confirmed cases have been followed up. Serological studies show that the infection rate among contacts remains very low. All viruses tested are homologous, with no change in infectivity or pathogenicity. China expects low incidence during summer and a further wave next winter, possibly with a lower peak than the second wave, China also anticipates that cases will be detected in currently unaffected provinces. Close collaboration between human and animal health sectors, microbiological surveillance and risk communication will continue to be central features of the response to H7N9.
2.2.3 Middle East Respiratory Syndrome Coronavirus in the Eastern Mediterranean Region

Presenter: Dr SK MD Mamunur Malik, Regional Advisor, Surveillance, Forecasting and Response, WHO Regional Office for the Eastern Mediterranean

The Middle East respiratory syndrome coronavirus (MERS-CoV) emerged in the Eastern Mediterranean Region in 2012. First detected in a Saudi national in September 2012 who had died of acute respiratory illness in June, a patient from Qatar in London in October 2012 was soon confirmed with a similar illness. In November, two cases were confirmed retrospectively by diagnosis of stored respiratory and serum specimens of two deceased patients in Jordan with date of occurrence in March and April 2012 from a cluster of health-care workers whose initial diagnosis was inconclusive.

There has been a recent upsurge in cases of MERS-CoV primarily in the Kingdom of Saudi Arabia and the United Arab Emirates. While cases primarily acquiring infection in the community increased considerably during March and April 2014 compared to previous months, the majority of infections reported during this period from these two countries were hospital-acquired owing to lack of systematic application of infection control measures. Although seasonality is being presumed, the main reason for this upsurge is being investigated. WHO’s mission to these countries to investigate these hospital outbreaks did not find any evidence of change in the transmissibility of the virus. The key questions that remain unanswered are: what was the underlying reason for this upsurge in both primary and secondary cases? and can the virus be easily transmitted for efficient and sustained human-to-human transmission?

The emergence of this virus is presumed to be of zoonotic origin. Recent scientific evidence has shown that the virus might have been circulating in dromedary camels found in the Middle East for at least 20 years. However, how this virus jumps from animals to infect humans is unknown. The most critical question that remains to be answered is the type of human exposures that result in infection.

Lessons learnt include that EIDs are unexpected and unpredictable events. Any disease outbreak today could be a global problem tomorrow. These novel diseases will continue to confront and challenge national health authorities’ resilience and ability to respond in a timely manner. Likewise, the capacity of regional and global communities to cooperate to control these diseases that cross national boundaries will be a real test for global health security.

It is important not to lower our guard and continue to assess the risk of global threats associated with emergence of this novel virus. This will involve close regional collaboration between the countries where cases have either occurred primarily or imported through international travel, WHO and the other bodies responsible for global health. While the global efforts should continue to fill gaps in knowledge associated with the emergence and origin of the virus, much greater international cooperation is needed to protect people from the threat of this novel virus.

2.2.4 Lessons learnt from the detection of MERS-CoV and avian influenza cases in Malaysia

Presenter: Dr Norhayati Binti Rusli, Deputy Director of Disease Control (Surveillance), Ministry of Health, Malaysia

Malaysia has developed a specific Strategy for Emerging Diseases (Malaysia Strategy for Emerging Diseases: MySED (2012–2015) with a supporting workplan. This approach was designed to align closely with APSED (2010). Seven technical working groups were established with associated terms of reference. Indicators based on the IHR indicators were developed and monitored. The working groups were overseen by a national TAG chaired by the Deputy Director-General of Health (who also functions as the IHR NFP). Avian influenza and MERS-CoV had led Malaysia to strengthen its preparedness for EIDs, including making MERS-CoV a notifiable disease. SARI surveillance and increasing laboratory capacity also support the national surveillance system. EID preparedness included providing a briefing to the medical team accompanying Hajj pilgrims, as well as to the Hajj pilgrims themselves and to some 200 000 people performing Umrah annually through
their travel agents. The Ministry of Health also provided briefings for travel agents, related ministries and agencies and distributed pamphlets. Strategic risk communication to the health sector and the public was also a central feature of preparedness. On 9 April 2014 a man presented for diabetes and was admitted to an emergency department. He had travelled to Saudi Arabia for Umrah, where he had visited a camel farm and consumed unpasteurized camel milk. He was treated for pneumonia but died. Diagnosis for MERS-CoV was confirmed by polymerase chain reaction. Contact tracing was immediately implemented for 199 individuals, including fellow pilgrims, family members and airline passengers. No contacts developed symptoms. The Minister of Health announced the case and the NFP reported the event to WHO. This generated significant media interest. Malaysia had also increased preparedness for avian influenza A(H7N9), including development of case definitions and enhanced surveillance. A key element is strengthened inter-agency cooperation for zoonoses, focusing on shared surveillance, response coordination, risk communication and preparedness of laboratories to detect and confirm the specimens. On 7 February 2014, a female with a travel history to China was admitted to hospital with ILI symptoms. On 11 February she tested positive for avian influenza A(H7N9). Malaysia made an IHR Notification on 12 February 2014. She recovered and was discharged on 13 February. Inter-agency simulations and table-top exercises are performed regularly at all levels including PoEs, the latest in June 2014, to further enhance Malaysia's preparedness and response.

2.2.5 Discussion

Discussion included that there is no evidence or reports of MERS-CoV infection in Bactrian camels; it has only been found in dromedary camels. No historical serology samples for SARI have been retained in the Region, although Jordan was able to provide some samples. No serological surveys for MERS-CoV have been conducted in the affected communities or in camels. However, WHO is promoting a sero-survey and Qatar has started on this, targeting slaughterhouse workers in the first instance as a high-risk group. Most primary MERS-CoV cases have camel exposure and are high-income males who have multiple exposure pathways. During the WHO mission there were 128 reported cases and information was very incomplete. Many cases were detected by chance rather than systematic investigation. To date there is no evidence that asymptomatic cases have transmitted the infection. There is some cultural resistance to attributing the disease to camels. However, publication of findings in the international literature has helped to address this. Those with chronic health conditions are more at risk of contracting MERS-CoV and tend to progress to more severe symptoms. The recently observed reduction in median age is largely because of more reports of asymptomatic cases who have usually been younger.

For avian influenza in China, syndromic surveillance for pneumonia of unknown aetiology has proved to be a better indicator than ILI surveillance. Vaccines for influenza H7N9 are a topic of much discussion in China. However, the virus is undergoing continuous reassortment, making this more challenging.

The Chair praised Malaysia's MySED Workplan 2012–2015 for multisectoral collaboration. In relation to MERS-CoV as a precautionary measure, Umrah and Hajj pilgrims and travellers were advised to avoid close contact with camels, not drink unpasteurised camel milk and not to visit animal farms, especially camel farms. Travel agents were advised not to promote visits to camel farms.

2.2.6 Ebola virus disease outbreak in West Africa

**Presenter: Dr Pierre Formenty, Scientist, Control of Epidemic Diseases, WHO headquarters**

Five distinct Ebola strains are known (two for Marburg). Symptoms have rapid onset and there is no specific treatment available, so isolation and symptomatic relief is the only option. Human-to-human transmission is familial and nosocomial, including direct or indirect skin contact or body fluids. In addition to health-care facilities, amplification in community settings has been observed, for example, when caring for the ill at home and at funerals. Virus shedding increases as symptoms progress.
Fruit bats act as a reservoir species and can transmit the virus to primates. Humans can contract Ebola from both bats and primates, with hunters at especially high risk. Fruit bats are also endemic in some areas of South-East Asia and the Western Pacific regions. Historically, Central Africa has been the epicentre of Ebola outbreaks and more recently, West Africa. A minimum a national response is needed, requiring strong ministry of health leadership, to stop the transmission chain. Key response elements include human and animal surveillance and active investigation of all new cases, contacts and deaths. Isolation of cases is critical, as is strict IPC – experience shows it is insufficient to just rely on the distribution of personal protective equipment (PPE). Risk communication using culturally acceptable practices is also important.

The outbreak in West Africa is linked to the Zaire Ebola virus, initially thought to be cholera. A second wave occurred in May–July 2014, which at 615 cases is one of the largest Ebola outbreaks ever recorded. The second wave suggests that many cases remained undetected. The area has also recently experienced armed conflict and the aftermath of this has complicated the response, along with poor roads and lack of electricity. In total, 964 cases over three countries, including 599 deaths have been reported. The outbreak is not under control. Further cases are expected and spread to neighbouring countries is possible. The South-East Asia and Western Pacific regions should not assume they are safe from this disease.

2.2.7 Investigation of a potential zoonotic emerging infectious disease event in the Philippines

*Presenter: Dr Vikki Carr D de los Reyes, Medical Specialist III, Public Health Division, National Epidemiology Centre, Department of Health, Philippines*

The National Epidemiology Centre functions as the NFP for the Philippines and oversees national surveillance systems. On 1 April 2014, EBS detected reports from a remote rural location on Mindanao of an event involving “horse meat poisoning”, with up to five patients, all of whom had died. By 4 April, a preliminary investigation suggested that 3% of the residents who had consumed horse meat had developed fever, vomiting and neurological symptoms and had died (N=4). Further horse and human deaths were subsequently identified. Socioeconomic conditions meant that slaughtering and eating ill horses is not an uncommon practice in such provinces. All the deceased were males and had some form of exposure to horses, or had cared for a sick person. While dengue or chikungunya could not be excluded, Japanese encephalitis was suspected and mosquito control measures were implemented. In May, WHO provided a multidisciplinary team to assist with the ongoing investigation. Case definitions were developed, a wide range of animal samples taken and gene sequencing initiated. Laboratory analysis suggested henipavirus. Risk communication was used to inform the local communities of the likely cause of the event, and of the precautions to prevent recurrence.

2.2.8 Dengue and other arboviral disease outbreaks in the Pacific

*Presenter: Dr Eric Nilles, Medical Officer, Emerging Disease Surveillance and Response, WHO Division of Pacific Technical Support*

Twenty-one Pacific island countries and areas cover an area approximately 11 000 km wide, with a total population of 3.2 million. This poses major logistical challenges. Dengue serotypes 2 and 3 have recently re-emerged after almost two decades. This has meant large susceptible populations. Multiple outbreaks occurred in seven countries involving many thousands of cases. The outbreaks in Fiji and Solomon Islands were the largest ever recorded in those countries. Australia and New Zealand provided response support in some instances. Historical analysis suggests cyclic Pacific-wide serotype-specific dengue epidemics approximately every 10–15 years. Risk assessment, noting wide variation in PIC resilience, suggests moderate disease severity with a high risk of further outbreaks. The first Pacific outbreak of chikungunya occurred in New Caledonia in 2011. This was followed by outbreaks in Papua New Guinea and Yap State in the Federated States of Micronesia, before a major outbreak in Tonga in March 2014, with approximately 10 000 cases. In 2007 the mosquito-borne arbovirus Zika virus emerged in the Pacific, causing a large outbreak in Yap State. This was the first outbreak ever reported globally. Prior to 2007, only sporadic cases have been reported in Africa and
Asia. Fortunately, symptoms are generally milder than for dengue. Mosquito vectors include species of Aedes. Four countries have now experienced Zika outbreaks. Subsequent analysis of the largest outbreak, in French Polynesia, suggests a possible, but not yet confirmed, association with Guillain-Barre syndrome (GBS). Further investigation of the possible link between Zika and GBS is ongoing. WHO has provided practical technical support to Pacific island countries and areas for arboviral diseases, including vector control and workshops on clinical management.

2.2.9 Discussion

Discussion included that molecular studies on chikungunya indicate it is the Asian strain, not the East/Central/South African strain, responsible for the explosive outbreaks in the Indian Ocean. Virus isolates from the dengue serotype 3 outbreaks have undergone molecular sequencing. The virus in French Polynesia was found to be dengue serotype 3 genotype 3 and in the remainder of the South Pacific, it was dengue serotype 3 genotype 1, indicating disparate introductions of the same serotype at the same time after an absence of almost 20 years. For chikungunya vector control, WHO advised that there is no magic bullet, but noted the need for community-based measures. Genetically modified mosquitoes are being tested in French Polynesia and in Australia, Viet Nam and Brazil, but are still in trial stage. The Zika virus outbreak in Yap, Federated States of Micronesia in July 2007 was the very first notification under the IHR (2005), which entered into force on 15 June 2007. Even relatively well-resourced Pacific island countries and areas have experienced major outbreaks. Environmental vector control and strong clinical management are essential.

The Ebola situation in West Africa was discussed at GOARN recently and observers commented on the massive scale of the event that it is likely to continue for months and that many response agencies and partners are approaching the limits of their ability to sustain their support.

Consumption of undercooked horse meat and handling was a risk factor in the henipa outbreak. Five of 17 cases had no record of contact with horses. The initial report was picked up from media monitoring by EBS and verified by health workers. The event occurred in a remote location where it is common practice to slaughter ill animals or butcher those that have died. The event was not detected by animal health surveillance. Horse deaths are not usually detected by animal health surveillance. The importance of sharing animal health and human health surveillance and combining the initial investigation, risk assessment and response is vital for the management of zoonoses. Bat surveillance has also been initiated to help understand the epidemiology of the event. Measures to reduce exposure to bats were recommended as well as not consuming meat from sick animals. The event was discussed with the NFP in terms of possible IHR Notification. However, it was not a clear-cut case for notification, given the specific circumstances involved and the lack of potential for international spread. Information sharing via the Event Information Site is a valid purpose for reporting to WHO. The event is still under investigation, the case is not yet closed and a final decision on Notification (Article 6) or Consultation (Article 8) under IHR (2005) has not been ruled out.

2.3 Plenary 3: Strengthening effective preparedness and rapid response

2.3.1 A framework for action – MERS-CoV and other EIDs

Presenter: Dr Angela Merianos, Medical Officer (Influenza), Emerging Disease Surveillance and Response, WHO Regional Office for the Western Pacific

The APSED (2010) focus areas provide a platform for translating IHR core capacities into operational planning and readiness to respond to emerging infectious diseases and other acute public health events. The goal is to reduce the likelihood of EID spread and the adverse health and socioeconomic consequences associated with outbreaks through preparedness planning, early detection, rapid response, safe clinical management and infection prevention and control. The framework for action is a package of materials to support effective response activities. It includes checklists for key roles and the focus areas:
1) leadership and coordination (e.g. a national all-hazards incident management system and a functional EOC);
2) surveillance and response (e.g. establishing and maintaining relationships between clinicians, public health staff and laboratory personnel);
3) laboratory (e.g. biosafety and both in-country and offshore referral capabilities);
4) zoonoses (e.g. cross-sectoral coordination, risk reduction and research);
5) infection prevention and control (vital to retain a functioning health sector, starting with handwashing and the application of transmission-based precautions and sharps disposal);
6) risk communication (e.g. gaining trust and being mindful of different audiences);
7) public health emergency preparedness (e.g. POEs, including systems to support contact tracing of travellers, often post-arrival), and
8) monitoring and evaluation (e.g. exercises and outbreak reviews).

The overall focus is on adaptive responses, drawing on a range of components and working across different disciplines and sectors at the local and national level, and linking into regional and global health security partners and resources.

2.3.2 Preparedness for EID threats in Viet Nam

Presenter: Dr Tran Nhu Duong, Deputy Director, National Institute of Hygiene and Epidemiology, Viet Nam

Viet Nam maintains a communicable disease surveillance system at the national and subnational levels, including both IBS (28 notifiable diseases) and EBS. This system consists of three main components including preventive medicine, curative medicine and a quarantine network and is based on extensive experience with SARS, avian influenza A(H5N1) virus, cholera, dengue and hand, foot and mouth disease. Viet Nam is closely monitoring avian influenza A(H7N9) virus and other avian influenzas in neighbouring China, as well as all developments with MERS-CoV. Surveillance and response activities are supported by the Infectious Disease Prevention and Control Law enacted in 2007. Viet Nam is continuing to enhance its surveillance systems for priority EIDs. The Ministry of Health established a Steering Committee for EID Prevention and Control, with five sub-committees. An EOC was established and tested by exercise drills in September 2013. Viet Nam is collaborating with US CDC and WHO to further strengthen the centre’s functionality. There is a strong focus on laboratories at provincial and national levels, including two national influenza centres. Recent laboratory drills were supported by the Pasteur Institute and US CDC. Technical training has been provided to all rapid response teams. The Ministry has also developed a national plan to support risk communications for prevention and control of EIDs. Infection prevention and control has been promoted in hospitals, including upgraded PPE. Following China’s notification of avian influenza A(H7N9) virus, Viet Nam increased its vigilance and prepared for novel avian influenza and is working actively to go beyond the minimum core capacity requirements.

2.3.3 Public health laboratory system for EID surveillance and response

Presenter: Dr Frank Konings, Technical Officer (Laboratory), Emerging Disease Surveillance and Response, WHO Regional Office for the Western Pacific

APSED (2010) Focus Area 2, laboratories, supports surveillance and response capabilities for EIDs and therefore is closely linked with Focus Areas 1 and 3 (surveillance and zoonoses). National workplans are encouraged to promote engagement with subnational laboratories and, at a later stage, exercises are recommended to test the systems. Referral capabilities, either to national laboratories or to international reference laboratories, are vital for a fully-functional laboratory system. Reference laboratories can also support provincial facilities with technical assistance and external quality assessment (EQA) activities. The Region has 21 national influenza centres in 15 countries, with three world-class WHO collaborating centres for influenza reference and research (in Australia, China and Japan). These collaborating centres are also able to provide support across the Region for testing capability for MERS-CoV. WHO has facilitated EQA of laboratories across the region, including “blind” serology and molecular testing for dengue. The results from this assessment were good, with
more than 80% of the 19 laboratories participating generating 100% accurate results. The next round will focus on other pathogens in addition to dengue.

2.3.4 Field Epidemiology Training Programme in Papua New Guinea

Presenter: Mr Berry Ropa, Programme Manager, Communicable Disease and Surveillance and Emergency Response, National Department of Health, Papua New Guinea

Papua New Guinea has identified a need to increase human resources in epidemiology to support public health surveillance and response activities. The new Papua New Guinea Field Epidemiology Training Programme, inaugurated in 2013, focuses on applied knowledge, mentoring and long-term support to graduates. The six-month programme has a strong provincial focus, with capacity-building at the national level. Students start with a two-week intensive orientation, followed by field placements with two further sessions each of one week duration. There are approximately 15–20 participants per cohort and an expectation that graduates will serve as trainers upon return to their provincial locations. WHO and US CDC funded the first cohort and to ensure sustainability, the National Department of Health has committed to future funding of the programme. The focus is on practical application of analytical skills and the generation of realistic and actionable recommendations. Experience suggests that careful selection of candidates is important, so Papua New Guinea uses strict criteria and a competitive application process. Graduates receive follow-up mentoring and are encouraged to publish outbreak investigations. One graduate is studying in Thailand on a two-year programme, with a view to becoming the Papua New Guinea National Coordinator for FETP upon return. Other top graduates will receive further training to serve as mentors at local level. The second cohort is now in training, including an animal health fellow and other applicants selected from different locations from the first cohort.

2.3.5 Risk communications

Presenter: Ms Joy Caminade, Technical Officer (Risk Communications), Emerging Disease Surveillance and Response, WHO Regional Office for the Western Pacific

The fifth APSED (2010) focus area is risk communications, which comprises three main components: operations communications; behaviour change communications; and health emergency communications. Health emergency communications is the main area of activity. WHO guidance encourages Member States to establish a dedicated structure, team or other mechanism within the Ministry of Health. This team should receive training and develop an all-hazards, health emergency communication plan. The plan should be tested in actual emergency responses and/or in exercises or drills. China has use health emergency communications for avian influenza and the Philippines and Malaysia for MERS-CoV – all have found it to be a valuable investment. Brunei Darussalam, Mongolia, Singapore and Solomon Islands are reviewing and upgrading their communications plans. Cambodia, the Lao People’s Democratic Republic and Viet Nam have conducted exercises based on H7N9 scenarios. Countries are encouraged to document lessons learnt, particularly during responses and to also consider the challenges and opportunities raised by social media.

2.3.6 Zoonoses coordination mechanism in Mongolia

Presenter: Dr Evlegsuren Ser-Od, Officer-in-charge, Coordination and Implementation of Communicable Disease Control and Prevention Policy, Division of Public Health, Ministry of Health, Mongolia

Active efforts have been made to establish and maintain partnerships between human, animal health, environment and laboratory sectors. This collaboration operates at national and subnational levels. To test their systems, they recently conducted a cross-border exercise with Russia and China. Mongolia has maintained a strong focus on developing risk reduction strategies for priority diseases. The Ministry of Health has a high priority for strengthening public health emergency preparedness through operationalization of an EOC. The national surveillance system includes IBS, EBS and laboratories. Coordinated research is conducted to address and provide the evidence base for cross-cutting issues, including antibiotic resistance, heavy metals in meat products, pesticide contamination, food additive
evaluation of the school lunch programme and impacts of climate change on emerging diseases. These studies require close collaboration among ministries of health and agriculture, inspectors, food and environmental laboratories, universities and technical institutes. The national plan for EIDs recognizes the importance of post-outbreak reviews to capture lessons learnt. FETP is in place, and serves as the secretariat for the newly-established intersectoral coordination committee. The FETP is now open to human and animal health students and will be the hub to link national experts to global institutes. Collaboration with Massey University, New Zealand is an initial effort to pursue the hub model. Service development priorities are to revise their risk assessment guidelines, update the EBS system and apply an all-hazards approach to the management of public health emergencies.

2.3.7 Discussion

Discussion included effective border measures such as provision of information to travellers on exit. For example the Kingdom of Saudi Arabia routinely does this for pilgrims returning home. Where two or more countries have close relationships and there may be high-risk diseases at issue, then health information at points of entry and departure, for example, about symptoms and encouraging travellers to disclose travel history to clinicians if they become ill, are useful. Being able to quickly retrieve passenger locator cards for contact tracing, should it be required, is also important. In-flight cabin announcements can also be useful reminders.

Social media can create challenges for risk communication. In the early stages of an acute public health event, social media are likely to be very active, often with inaccurate or misleading information. Even with significant resources it is very difficult to monitor and supply appropriate information. One strategy is to refer social media users to authoritative sources of information, for example ministry of health websites.

While the IHR (2005) place considerable emphasis on public health capacities at POE, we also need to keep a clear focus on post-border surveillance and detection, for example with primary care, general practitioners or even hospital emergency departments, who may be the first to encounter a novel disease. Health professionals should always be encouraged to take travel histories from presenting patients and primary care facilities. Hospitals should always and routinely maintain good IPC practice, to minimize the risk that any novel infection might spread.

The Philippines is focusing on FETP and this includes collaboration with human and animal health and also exchanging experience and trainees with other countries’ FETPs in the Region.

2.4 Plenary 4: Monitoring and evaluation (M&E)

2.4.1 APSED (2010) M&E guide and outbreak review guide

Presenter: Dr Chin Kei Lee, Team Leader, Emerging Disease Surveillance and Response, WHO Regional Office for the Western Pacific

Monitoring and evaluation is a focus areas introduced in APSED (2010), included to assist countries take direct ownership of their own capacity-building activities, as well as the more traditional focus of supporting resource mobilization and accountability. The Regional Office for the Western Pacific is developing an M&E guide to promote good practice and to help embed an M&E culture at national and regional levels. Performance indicators reflect IHR and APSED components. The guide places particular emphasis on outbreak reviews as valuable learning opportunities to support strengthening of core capacities based on a country’s own immediate experience. For example, the Lao People’s Democratic Republic reviewed its response to its biggest recorded dengue epidemic and identified a number of strengths to build on and weaknesses to address.
2.4.2 Cambodia’s experience of the national planning and review process

Presenter: Dr Ly Sovann, Director, Department of Communicable Disease Control, Ministry of Health, Cambodia

Cambodia adopted the planning and review process of APSED, and was one of the 14 countries in the Region to obtain an extension for the IHR core capacity development in 2012. Earlier this year, Cambodia conducted a two-week exercise and national review workshop and as a result of this process decided to submit a further request for an extension until June 2016. The Government established thematic technical working groups for communicable diseases, zoonoses, food safety and IPC. Cambodia’s surveillance system performed well, but other capacities, such as emergency preparedness, require strengthening. An implementation plan for 2014–2016 has been developed, informed by M&E activities and 2014 IHR monitoring questionnaire responses. The plan prioritizes capacity-building in specific areas and for accountability purposes assigns responsibility for leading progress. The plan also addresses resource mobilization. Beneficiaries of M&E are the Ministry of Health, the wider health sector and other government agencies in sectors such as commerce and defence. M&E has also proven useful to development partners, for example helping to facilitate donor support. M&E reports have also helped with advocacy to senior ministry management as well as promoting the importance of core capacities under IHR (2005).

2.4.3 The Lao People’s Democratic Republic’s experience of outbreak review

Presenter: Dr Bounlay Phommasack, Director General, Department of Communicable Disease Control, Ministry of Health, Lao People’s Democratic Republic

The dengue epidemic in 2013 was the largest ever recorded in the Lao People's Democratic Republic with 44 017 cases reported, including 95 deaths. Age and gender analysis showed that all population groups were affected, especially young adults. A national outbreak response was activated, including the national EOC, which reviewed surveillance data daily, usually with the Minister or Deputy Minister attending. The Prime Minister issued decrees to ensure the highest level of priority and compliance. Surveillance and response activities were actively supported by laboratories. The Ministry of Health, supported by WHO, conducted a technical review of the outbreak in late 2013. Response activities were evaluated to identify strengths and weaknesses and disseminate lessons for future preparedness. High-level political commitment and leadership was critical for an effective and sustained whole-of-government response. The EOC proved to be an essential mechanism for command functions and national coordination. Other important elements of the response included mosquito control activities and planning and delivery of surge capacity for the clinical management of unprecedented numbers of cases. The review concluded that EIDs remain a serious threat, and that IHR (2005) and APSED (2010) and the associated guidance documents were useful tools for surveillance, response and capacity building. The review also found that previous investment in core capacities meant the country was better prepared to respond to a major outbreak.

2.4.4 An introduction to evaluation

Presenter: Mr Graham Rady, Monitoring and Evaluation Consultant, Australia

Mr Rady encouraged the participants to reflect on three simple questions:

1) **Why evaluate?** Firstly, for accountability. For example, to demonstrate that a programme is worth supporting to senior managers, ministers, the Ministry of Finance or donors. Secondly, for learning to improve programmes. Regular in-house reviews improve the effectiveness and efficiency of our services and programmes. Better services mean better health outcomes.
2) *What to evaluate?* Consider the evaluation criteria developed by the OECD Development Assistance Committee that have been applied for over 25 years. These criteria include:

*Relevance* – are we focusing on the most important issues; have we got our priorities right? This is important when available resources are inadequate to fully meet programme needs – the first challenge is often to prioritize.

*Effectiveness* – have we achieved our objectives? Were our objectives clear, appropriate and measurable? Have we got the right objectives? Considering the answers to these questions can involve qualitative information and quantitative evidence. Ask yourself whether the outcomes achieved are attributable to the services delivered i.e. did what we delivered make a significant difference, or were other factors at play as well? In answering this question we will need to confirm that the change process is adequately understood.

*Impact* – are there any observed long-term beneficial health changes? If so, who will experience what kinds of benefits? Were the observed changes planned or unplanned, positive or negative, direct or indirect?

*Sustainability* – changes should be ongoing and last after our programme support stops. This raises issues of ownership, leadership and sustained human and financial resourcing.

*Management efficiency* – including governance mechanisms and cost effectiveness.

*Lessons learnt* – consider what went well, what could have gone better and implications for the future.

3) *How to evaluate?* M&E should be impartial, identifying positives and the negatives. The process and the findings need to be based on evidence, and able to withstand critical independent scrutiny. This balanced presentation of defensible findings, supported by transparent and consultative processes contributes to the credibility of the findings and hence promotes ownership and uptake of the findings for quality improvement. A consultative and inclusive approach is important with a range of stakeholders, some of whom may have different perspectives, expectations and priorities. Finally, there are twin goals of internal learning and external accountability.

### 2.4.5 Preparing for APSED (2010) evaluation

*Presenter: Dr Li Ailan, Director, Division of Health Security and Emergencies, WHO Regional Office for the Western Pacific*

At the end of the APSED (2005), the strategy was subject to an independent evaluation and consultation with Member States, review by TAG and technical meetings, to help develop APSED (2010). The revised and expanded APSED (2010) will also be evaluated, to assess what we have achieved, what we have learnt and how best to move forward. The planned evaluation will inform Member States, development partners and donors of progress across the Region on core capacities, focus areas and their sustainability. The evaluation will be important for accountability and organizational learning. The evaluation is proposed to take the form of a high-level review, rather than analysing the numerous activities in detail. The twin goals of accountability and learning will shape the evaluation process for APSED (2010), which will include both qualitative and quantitative information. Review material will be gathered and analysed this year, and a draft evaluation report will be prepared in May 2015 for review by TAG in mid-2015. The Regional Office for the Western Pacific is hopeful that outbreak reviews will also be undertaken by Member States and that these will be helpful for countries and providing another indicator of the effectiveness of APSED (2010).
2.5 Brown bag session

2.5.1 Global health security agenda

Presenter: Mr Peter Rzeszotarski, Operations Branch Chief, Office of Public Health Preparedness and Response, Division of Emergency Operations, United States Centers for Disease Control and Prevention,

Dr Peter Rzeszotarski introduced the concept of Global Health Security, citing the World Health Report 2007: “… the activities required, both proactive and reactive, to minimize vulnerability to acute public health events that endanger the collective health of populations living across geographical regions and international boundaries”. The three mains risks to Global Health Security were emerging organisms, drug resistance and intentional creation.

The Global Health Security Agenda was launched in February 2014. It is an effort between the Government of the United States of America, other nations, international organizations and public and private stakeholders to accelerate progress towards a world secure from infectious disease threats. The initiative pursues three goals: to prevent avoidable epidemics; to detect threats early and to respond rapidly and effectively. The Global Health Security Agenda does not duplicate, but commitments such as the animal health codes and the Codex Alimentarius.

The Global Health Security Agenda has started with demonstration projects in selected countries to show meaningful results in specific areas of focus. In 2013, work was undertaken in setting up EOCs, information systems and national laboratory systems. In 2014, demonstration projects have included additional countries. In the Western Pacific Region, Viet Nam is involved in a demonstration project. The Philippines has been identified as a country for engagement from 2015 and beyond.

2.5.2 Regional stockpile

Presenter: Ms Naoko Ochiai, Assistant Project Manager, International Organization Division, Third Management Department, Japan International Cooperation System

With funding of US$ 18 million from the Government of Japan to the Asia-Europe Foundation (ASEF) through the Japan Trust Fund, a regional stockpile of antiviral drugs and PPE has been in place since 2010. The stockpile is located in Singapore and consists of Tamiflu, Relenza, particulate respirators, isolation coverall suits, surgical masks, examination gloves, isolation gowns, safety goggles and alcohol hand rub. The stockpile is available to prepare for an outbreak of influenza with pandemic potential; the stockpile is to be mobilized and used in a rapid containment operation with the aim of stopping or slowing down the further spread of such disease if it actually occurs.

The quantity of the regional stockpile is sufficient to cover 500 000 people for rapid containment. The target groups are the partner countries of the Asia-Europe Meeting (49 Asian and European countries as of July 2014) with particular priority on the ASEAN member countries and their neighbours including Mongolia and Pakistan. In the event that a rapid containment operation is conducted in any of those countries, Japan International Cooperation System (JICS), which is responsible for management of the stockpile, will urgently airlift stockpiled antiviral drugs and PPE from Singapore to the target country upon instruction from the Regional Office for the Western Pacific. For emergency transportation of the stockpile to be utilized for rapid containment, the target country’s cooperation and readiness to receive the incoming stockpile are crucial.
2.6 Plenary 5: Breakout session group feedback

The three breakout sessions comprised:

- **Group A**: monitoring and evaluation, for which the draft M&E Guide including programmatic outbreak review guide and draft concept note for the proposed evaluation of APSED were distributed.
- **Group B**: preparedness and response – a scenario-based session, centring on the arrival of an EID.
- **Group C**: the partners forum focused on shared experiences and understandings of regional health security and APSED/IHR partnerships.

**Group A: Monitoring and evaluation**

The group considered seven questions:

1) *Do Member States benefit from M&E?* The group consensus was that M&E activities can and do help to secure political commitment for capacity-building, as well as informing senior management and other sectors of the nature and importance of the work. M&E also identifies specific strengths and weaknesses in services and programmes, helps coordinate funding from donors and allows the country to set its own development agenda.

2) *Are outbreak reviews conducted?* There were variable answers to this question, with some using different protocols, for example, technical “in-house” reviews versus those intended for publication. Some are very structured and some more informal. Maintaining documentation during an outbreak can be a challenge, but is vital for any subsequent review. FETPs enhance the quality of data management and outbreak review reports. The WHO outbreak review guidance will be useful.

3) *How can Member States sustain M&E?* Commitment is important at senior management and political levels, including a requirement to conduct M&E at least annually, for example, aligned with the regular IHR monitoring. Access other dedicated M&E resources/personnel located elsewhere in the Ministry of Health may be useful.

4) *How can WHO support M&E?* Feedback to countries on IHR questionnaire results is useful. WHO could advocate M&E at a senior level within the Ministry of Health. WHO should continue to collaborate with countries on M&E activities and finalize the draft M&E guide.

5) *Is the scope of the proposed APSED evaluation relevant to Member States?* As APSED has been a key framework for planning and implementation, evaluation will be important. The review will help to show progress with core capacities and should inform capacity-building beyond 2016.

6) *What are the views on the proposed evaluation method and timeline?* Further discussion with Member States on how and when evaluation field work will be conducted would be helpful. Member States and WHO will both want to minimize any unnecessary additional reporting burden. To this end, WHO will carefully review data sources (e.g. IHR monitoring information, APSED baseline studies, previous APSED progress reports and case studies) to ensure information that is already available is included in the evaluation.

7) *What level of engagement do Member States wish to have in the proposed evaluation?* Several countries indicated a willingness to be involved. It was suggested to involve senior government officials and technical staff. The final report should be presented to high-level officials and even ministers, to support accountability and for advocacy and resource allocation purposes.
**Group B: Strengthening effective preparedness and rapid response**

The group discussed a scenario of two ill travellers arriving in Asia on a flight from the Middle East with general symptoms. Upon arrival, the sick travellers are taken to hospital where they are later diagnosed with Ebola virus disease and MERS-CoV infections. The scenario raised issues on point of entry (POE) preparedness, IPC, case management, laboratory preparedness and risk communication. The objective was to identify progress in emergency preparedness and gaps in IHR core capacities.

In terms of (POE) preparedness, Member States were asked to describe their mechanism of advanced notification of inbound sick passengers and the arrangements to receive ill travellers at POEs. Participating countries demonstrated fairly well-established processes for identification of ill passengers and linkages with health authorities after identification of such travellers. Measures at POEs included health check forms, home assessment tools, and communication between airline crews and local quarantine stations at airports.

However, it was acknowledged that ill passengers are often initially recognized at hospitals with subsequent reporting to airport authorities. Participants agreed that for the benefit of health-care workers, other patients, and the wider public, IPC measures should be routine in health-care settings. Cases may need to be isolated in hospital and public health measures such as contact tracing may be implemented before laboratory confirmation. If a particularly serious disease is suspected, IHR notification to WHO should be considered. Timely and reliable laboratory results were recognized as central to both clinical and public health preparedness. Those Member States without testing capacity for EIDs had established international referral mechanisms.

Finally, the group discussed the importance of risk communication to allay fear and disseminate personal health guidance. The importance of consistent messaging and communicating what is known about the situation rather than what is not known was emphasized. Fear among clinicians can lead to hospital closures during a public health emergency, thus communication with clinicians is paramount. Clear guidelines on how to sensitize physicians during a public health emergency are often lacking, especially in the private sector.

**Partners’ Forum: Regional health security**

Development partners provided updates on their work towards regional health security, including in the Lao People’s Democratic Republic and Viet Nam, which have both been recipients of constructive support. In both cases one key to success was to ensure that assistance was managed in conjunction with strong government involvement and leadership. There was discussion about the coordination mechanisms that development partners use at the country and regional levels. These make use of the Food and Agricultural Organization of the United Nations (FAO) and World Organisation for Animal Health (OIE) regional coordination mechanism for zoonoses and other strategic frameworks that can be applied in conjunction with IHR/APSED-based approaches. Development partners also provide technical and operational support. Partners sharing a common understanding of health security threats and capacity-building priorities are better placed to deliver more effective and appropriately targeted support. It is important to put the country at the centre of the process. The process of establishing functional EOCs can act as a catalyst to bring together government agencies and sectors.

**2.6.1 Discussion**

Discussion included the trigger for activating an incident management system. Group B had not discussed that issue in detail, though some countries indicated that routine arrangements such as pratique and POE “at all times” capacities would assist with detection and reporting of incidents. In Malaysia, POE surveillance includes zero reporting to verify that silence still means vigilance. Group B also noted that post-border detection is generally the most likely way an arriving case would be identified. Hence the importance of good practice in primary care and hospitals to detect and report such cases, even informally, without waiting for laboratory confirmation, and to routinely practise IPC and seek a travel history.
2.7 Plenary 6: Strengthening partnerships through cross-programme collaboration

2.7.1 Surveillance of foodborne disease - Opportunities for cross-programme collaboration

Presenter: Ms Joy Gregory, Technical Officer (WPSAR), Emerging Disease Surveillance and Response, WHO Regional Office for the Western Pacific

IBS and EBS systems aimed at detecting public health events have been widely implemented in the Western Pacific Region. For suspected foodborne illness, rapid detection is essential to help prevent further cases. Capacities needed for response to food safety events and EIDs are similar, including rapid response teams, field epidemiology skills and risk communication. The IHR core capacities therefore directly support food safety objectives. WHO is developing guidance document for countries to upgrade surveillance systems to have the capacity to detect foodborne disease events and monitor foodborne diseases. The guide will allow Member States to identify their surveillance system stage of development, identify the priorities for developing the surveillance system, and assess the next steps for creating a sustainable and functional system. The guidance will also assist Member States to facilitate the coordination of investments in surveillance and response and facilitate cross-programme collaboration. The International Food Safety Authorities Network (INFOSAN), a voluntary collaboration of Member State food safety agencies, is a joint programme between the FAO and WHO. INFOSAN operates in accordance with IHR (2005) and requires participating countries to designate national food safety focal points. The key activity of INFOSAN is to facilitate information exchange, for example, food recalls associated with an imported or exported food product with or without associated human illness, and cases of human illness associated with a food product. The structure of INFOSAN seeks to promote intersectoral collaboration and strengthen relationships, trust and mutual understanding among all the players to ensure consistent and rapid information sharing and coordination across sectors nationally and internationally.

2.7.2 International and regional arrangements for response to chemical and radiological emergencies

Presenter: Mr Alexander Von Hildebrand, Technical Officer, Health and the Environment, WHO Regional Office for the Western Pacific

Many chemical hazards are of potential public health concern. WHO supports implementation of:

1) the Basel Convention on the transboundary movement and disposal of hazardous wastes (180 parties);
2) the Stockholm Convention on persistent organic pollutants (179 parties); and
3) the Rotterdam Convention on prior informed consent for importation (152 parties).

WHO provides training for Member State poisons centres and shares technical information and support. Radiation hazards require specialist response capacities, and the International Atomic Energy Agency (IAEA) is the primary international body. The IAEA’s Joint Radiation Emergency Management Plan of the International Organizations (2013) (J Plan) describes WHO’s role in radiological events. This includes the Radiation Emergency Medical Preparedness and Assistance Network, which provides stand-by mode support, risk assessment and emergency response capability. In 2011, the Fukushima nuclear disaster tested these systems. A survey in May 2014 found specialist expertise and response capacities for both chemical and radiological emergencies available in the Region. Intersectoral coordination and risk communication are often major challenges with chemical and radiological events, as different countries place responsibilities in different agencies. Pacific island countries and areas are seeking guidance as to the minimal capacities they need in light of their circumstances. In general terms, further development of chemical and radiological capacities is required, as they often feature at the bottom of IHR (2005) indicators based on Member State IHR monitoring questionnaire responses. The Regional Office for the Western Pacific maintains a list of regional experts, but it is a challenge to keep this up to date given high rates of staff turnover.
2.7.3 Polio as a Public Health Emergency of International Concern (PHEIC) under IHR (2005)

Presenter: Dr Sergey Dioditsa, Team Leader, Expanded Programme on Immunization, WHO Regional Office for the Western Pacific

The human and financial consequences of failing to complete the final eradication of polio would be immense. The global eradication programme started in 1988 when 125 countries had endemic polio. In a coordinated, costly and sustained international effort, significant progress was made by many countries. India alone spent US$ 50 million on one round of elimination activity and just this year achieved polio-free status. The Western Pacific Region was certified polio-free in 2000. In 2011 a cluster of 21 cases in China took four months to control, and the Region retained its polio-free certification. By 2012, polio was being reported in just three countries and the goal of global eradication was close.

Over the last two years progress has faltered, and additional countries started reporting cases. Of the nine countries reporting cases in 2014, Pakistan accounts for more cases than the other eight countries combined. There are also complications associated with vaccine-derived polio cases, which like wild polio virus can spread to neighbouring countries. In 2013 the World Health Assembly endorsed the Polio Eradication and Endgame Strategic Plan. This plan focuses on detecting and interrupting transmission, strengthening immunization programmes and the withdrawal of the oral vaccine. In April 2014 the WHO Director-General determined that the continued circulation and spread of polio constituted a PHEIC under the IHR (2005). This is the second ever PHEIC, the first being for influenza A(H1N1) 2009. This step empowers the Director-General to issue Temporary Recommendations (effectively emergency recommendations) under Article 15. The Director-General made a number of recommendations to countries with polio but not known to be “exporting” the virus, and further recommendations for those with polio circulating and which are exporting the virus.

2.7.4 Discussion

Discussion included that a sewage sample in Brazil recently tested positive for polio. This serves to remind us that environmental surveillance as well as human surveillance is an important element of the eradication programme.

GOARN recently discussed chemical and radiation response capacities. This may require new partners, but is being explored carefully and will be mindful of existing response networks and arrangements.

With polio, the dangerous security situations in some of the affected countries have significantly compounded the challenge of surveillance and control. This remains very difficult and the governments of the Member States concerned must take some responsibility for supporting continued eradication efforts, for example, the protection of polio vaccinators.

In terms of actions countries should take for travellers arriving from polio-affected countries, WHO advised that polio-affected Member States should vaccinate and issue certificates to all departing travellers (in case of exporting wild poliovirus countries) or be encouraged to vaccinate them (in the case of only infected countries). But it is up to receiving countries to assess the risk and make their own decisions about what, if any, measures to apply, for example, requesting certificates at points of entry or as part of the visa process.

2.8 Closing remarks

Professor John Mackenzie noted the significant progress in recent years, including this meeting. He congratulated the participants and encouraged them to continue with their efforts.

Dr Takeshi Kasai praised the high quality presentations and workshop discussions. Dr Kasai thanked the participants and TAG members for their flexibility in accommodating the disruption to the
scheduled programme and their strong commitment to seeing the meeting through to a successful conclusion.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

1) Member States in the Western Pacific Region have progressed well in the implementation of APSED as demonstrated in investigations of, and responses to, outbreaks and other public health emergencies. It is heartening that progress towards achieving an integrated system of IHR core capacities/APSED focus areas has continued.

2) Given the challenging time frame for meeting IHR core capacity requirements, nine out of 27 countries in the Region have sought a second extension until 15 June 2016. The commitment to meet the requirements is reaffirmed to achieve these core capacities.

3) With Member States now past the mid-point of the five-year APSED (2010) work programme, it is time to review progress towards collective objectives for health security and prepare for the ongoing development and maintenance of core capacities to enhance health security beyond 2016.

4) Recognizing the experience with emerging and re-emerging diseases in the Western Pacific Region such as SARS, avian influenza, hand, foot and mouth disease, dengue, measles, MERS-CoV and other acute public health emergencies, participants reaffirmed the importance of strengthening vigilance, preparedness and response through APSED implementation.

5) Although substantial progress has been made over the past year, a number of focus areas require strengthening. These include public health emergency preparedness for non-EID events such as chemical and radiological emergencies, and capacity-building at points of entry.

6) Participants have recognized the significant efforts and collaboration among governments and development partners (including WHO and other technical, operational and development partners) to enhance cross-cutting capacity and foster cross-sectoral collaboration under IHR (2005) through APSED implementation. The importance of strengthening partnerships and building new partnerships is recognized.

7) Member States have recognized that continuous improvement and maintenance of core capacities is crucial. Systematic outbreak reviews by Member States provide an opportunity to share best practices and lessons learnt, and improve national and regional preparedness.

8) APSED continues to provide a useful collective framework for addressing public health threats across the Region, and serves as a key tool for mobilizing resources.

3.2 Recommendations

3.2.1 For Member States:

1) In light of the June 2016 deadline to achieve IHR core capacities, Member States that have sought IHR (2005) extensions should accelerate implementation of their national workplans towards meeting these capacities, including specific plans to address identified gaps.

2) Member States that have not sought extensions should:

   i. maintain and, as possible, enhance their capacities; and
ii. where possible, and upon request, directly support Member States that have sought extensions to meet their capacity requirements.

3) Member States are strongly encouraged to review their response plans in line with the WHO frameworks for action on avian influenza A(H7N9) and MERS-CoV, and to keep themselves, their health services and the public informed about other potential health security threats such as Ebola virus disease. Specific areas of focus are recommended:

i. strengthening public health emergency preparedness, including development of all-hazards public health emergency plans, building on pandemic influenza and other plans;
ii. strengthening infection prevention and control, clinical management and health service awareness, preparedness and response, in light of the potential for EIDs to cause nosocomial infections and amplify their transmission in health-care settings;
iii. strengthening and maintaining IHR capacities at points of entry, and ensuring that points of entry are part of national and local systems for public health emergency event detection and response.

4) Member States should ensure that EID managers and/or National IHR Focal Points have established arrangements with sectors that contribute to health security, including animal health, environmental health (including chemical and radiological safety), food safety, and emergency management (to address the public health consequences of natural and technological disasters). This should include multisectoral emergency preparedness plans and exercises as appropriate.

5) To demonstrate effectiveness and promote learning, Member States are encouraged to implement the APSED monitoring and evaluation guide, with its emphasis on:

i. using the APSED annual planning and review process;
ii. conducting outbreak reviews as a key tool to illustrate the successful functioning of the integrated system; and
iii. participating in the upcoming APSED evaluation.

6) Member States should continue to mobilize resources internally and with partners to sustain core capacity obligations and achievements.

3.2.2 To WHO

1) To effectively support Member States in workplan implementation, WHO should strengthen support to countries, particularly those that have requested extensions, to implement IHR core capacity development through APSED (2010). Specific areas of support include:

i. finalizing and distributing its emergency operations centres (EOC) guide, and supporting Member State requests to assess progress in EOC capacity development where possible;
ii. continuing to conduct the annual IHR communication exercise "Crystal" to test and improve NFP functionality and intersectoral collaboration;
iii. assisting with the annual IHR/APSED review process at country level; and
iv. assisting with preparation and conduct of outbreak reviews to demonstrate the effectiveness of the integrated system.

2) WHO should conduct a participatory evaluation with Member States, and utilize the outcomes to strengthen IHR core capacities.

3) WHO should enhance its readiness to perform alert and response functions, in particular to the ongoing threats of avian influenza, MERS-CoV, and Ebola virus disease; and be prepared to fulfil its WHO Emergency Response Framework requirements.

4) WHO should strengthen interregional collaboration to improve vigilance, information exchange and coordination for emerging threats.
5) WHO should encourage investment partners to reaffirm their commitment to supporting regional health security.
ANNEXES

Annex 1. Meeting Programme

Day 1 – Tuesday, 15 July 2014

08:30 – 09:00    Registration

09:00 – 10:00    Opening session

Welcome and opening remarks
- Dr Takeshi Kasai, Director, Programme Management

Self-introductions
Overview of objectives and agenda
Nomination of Chairs
Administrative announcements
Group photo

10:00 – 10:30    Coffee break

10:30 – 12:00    Plenary 1: Overall progress of the International Health Regulations (IHR) (2005) and the Asia Pacific Strategy for Emerging Diseases (APSED) (2010)

10:30 – 10:40 IHR (2005) – Opportunities and challenges
- Dr Li Ailan, WHO/WPRO

10:40 – 11:00 Global progress on IHR (2005) implementation
- Dr Florence Janine Fuchs, WHO Headquarters (WHO/HQ)

11:00 – 11:30 Regional progress on IHR (2005) through APSED (2010)
- Dr Chin Kei Lee, WHO/WPRO

11:30 – 12:00    Questions and clarifications

12:00 – 13:00    Lunch break

13:00 – 15:00    Plenary 2: Emerging Infectious Diseases (EIDs) – Ongoing health security threats

13:00 – 13:20 Overview of public health events in the Western Pacific Region
- Dr Tomoe Shimada and Ms May Chiew, WHO/WPRO

13:20 – 13:40 Human infection with avian influenza A(H7N9) virus in China
- China

13:40 – 14:10 Middle East Respiratory Syndrome Coronavirus (MERS-CoV)
- Dr SK MD Mamunur Malik, WHO Regional Office for the Eastern Mediterranean (WHO/EMRO)

14:10 – 14:30 Lessons learnt from the detection of MERS-CoV and avian influenza cases in Malaysia
- Malaysia
14:30 – 15:00  Questions and clarifications

15:00 – 15:30  Coffee break

15:30 – 17:00  Plenary 2: Emerging Infectious Diseases (EIDs) – Ongoing health security threats (continued)

15:30 – 16:00  Ebola virus disease outbreak in West Africa
-  Dr Pierre Formenty, WHO/HQ

16:00 – 16:20  Investigation of a potential zoonotic emerging infectious disease event in the Philippines
-  Philippines

16:20 – 16:40  Dengue and other arboviral disease outbreaks in the Pacific
-  Dr Eric Nilles, WHO South Pacific (WHO/SP)

16:40 – 17:00  Questions and clarifications

17:00 – 17:30  Break

17:30 – 18:30  Welcome reception

Day 2 – Wednesday, 16 July 2014  Sessions cancelled due to Typhoon “Glenda”

Day 3 – Thursday, 17 July 2014

08:30 – 08:40  Recap of day 1

08:40 – 10:00  Plenary 3: Strengthening effective preparedness and rapid response

08:40 – 08:55  A framework for action – MERS-CoV and other EIDs
-  Dr Angela Merianos, WHO/WPRO

08:55 – 09:05  Preparedness for EID threats in Viet Nam
-  Viet Nam

09:05 – 09:15  Public health laboratory system for EID surveillance and response
-  Dr Frank Konings, WHO/WPRO

09:15 – 09:25  Field epidemiology training in Papua New Guinea (FETPNG)
-  Papua New Guinea

09:25 – 09:35  Risk communications
-  Ms Joy Caminade, WHO/WPRO

09:35 – 09:45  Zoonoses coordination mechanism in Mongolia
-  Mongolia

09:45 – 10:00  Questions and clarifications

10:00 – 10:30  Coffee break

10:30 – 11:30  Plenary 4: Monitoring and evaluation (M&E)

-  Dr Chin Kei Lee, WHO/WPRO
10:40 – 10:50 Country experience on national planning and review process in Cambodia
  - Cambodia

10:50 – 11:00 Country experience on outbreak review in the
Lao People's Democratic Republic
  - Lao People's Democratic Republic

11:00 – 11:10 An introduction to evaluation
  - Mr Graham Rady, Australia

11:10 – 11:20 APSED (2010) evaluation
  - Dr Li Ailan, WHO/WPRO

11:20 – 11:30 Questions and clarifications

11:30 – 11:40 Introduction to breakout session
  - Dr Frank Konings, WHO/WPRO

11:40 – 12:40 Lunch session (light lunch will be served)
  Presentations: Global health security agenda (Mr Peter Rzeszotarski,
  Centers for Disease Control and Prevention)
  Regional stockpile (Ms Naoko Ochiai, Japan International
  Cooperation System)

12:40 – 14:40 Breakout session

12:40 – 14:40 Group A: Monitoring and evaluation, Group B: Strengthening
  effective preparedness and rapid response, Partners' Forum: Regional health
  security

14:40 – 15:10 Coffee break

15:10 – 16:10 Plenary 5: Breakout session group feedback

Group A: Monitoring and evaluation, Group B: Strengthening effective
  preparedness and rapid response, Partners' Forum: Regional health security

Questions and discussion

16:10 – 16:50 Plenary 6: Strengthening partnerships through cross-programme
  collaboration

16:10 – 16:20 Surveillance of foodborne disease - Opportunities for
  cross-programme collaboration
  - Ms Joy Gregory, WHO/WPRO

16:20 – 16:30 International and regional arrangements for response to chemical
  and radiological emergencies
  - Mr Alexander Von Hildebrand, WHO/WPRO

16:30 – 16:50 Questions and clarifications

16:50 – 18:20 Supper (at Cafeteria)

18:20 – 19:50 Plenary 7: Conclusions and recommendations

Closing session
Annex 2. List of participants

LIST OF PARTICIPANTS, TECHNICAL ADVISORY GROUP MEMBERS, RESOURCE PERSONS, CONSULTANT, OBSERVERS/PARTNERS AND SECRETARIAT MEMBERS

1. PARTICIPANTS

AUSTRALIA
Ms Margaret Anne Curran, Director, Zoonoses, Foodborne and Emerging Infectious Diseases Section, Department of Health, GPO Box 9848, Canberra, ACT 2601, Tel: (612) 6289 2726, E-mail: margaret.curran@health.gov.au

BRUNEI DARUSSALAM
Dr Haji Ahmad Fakhri Dato Paduka Haji Junaidi, Senior Medical Officer, Disease Control Division, Department of Health Services, Ministry of Health, Jalan Menteri Besar, Bandar Seri Begawan BB3910, Tel: (673) 238 2023, E-mail: fakhri.junaidi@moh.gov.bn
Dr Ak Muhd Khairulhazman Pg Dato Paduka Hj Othman, Medical Officer, Disease Control Division, Department of Health Services, Ministry of Health, Jalan Menteri Besar, Bandar Seri Begawan BB3910, Tel: (673) 238 2023, E-mail: khairulhazman.othman@moh.gov.bn

CAMBODIA
Dr Ly Sovann, Director, Department of Communicable Disease Control, Ministry of Health, No. 151-153 Kampuchea Krom Avenue, Phnom Penh, Tel: (855) 1282 5424, E-mail: sovann_ly@online.com.kh / sovann_ly@yahoo.com
Dr Seng Heng, Chief, Surveillance Bureau, Department of Communicable Disease Control, Ministry of Health, No. 151-153 Kampuchea Krom Avenue, Phnom Penh, Tel: (855) 1285 2782, Fax: (855) 2388 0441, E-mail: senghengmoh@gmail.com

CHINA
Dr Liu Bin, Section Chief, Office of Health Emergency, National Health and Family Planning Commission, No. 1, Xizhimenwai Nanlu, Xicheng District, Beijing 100044, Tel: (86 10) 6879 2713, Fax: (86 10) 6879 2590, E-mail: liubin@nhfpc.gov.cn
Dr Ni Daxin, Assistant Director, Public Health Emergency Center, Chinese Center for Disease Control and Prevention, No. 155, Changbailu, Changping District, Beijing 102206, Tel: (86 10) 5890 0501, E-mail: ndx@chinacdc.cn

HONG KONG (CHINA)
Dr Tsang Chiu-yin, Senior Medical and Health Officer, Emergency Response and Information Branch, Centre for Health Protection, Department of Health, G/F Centre for Health Protection, Argyle Street, Wan Chai, Tel: (852) 2125 2883, E-mail: smo_erib@dh.gov.hk
JAPAN
Dr Yui Sekitani, Coordinator for International Health Crisis Management, Office of Public Health Emergency Preparedness and Response, Health Sciences Division, Ministry of Health, Labour and Welfare, 1-2-2 Kasumigaseki, Chiyoda-ku, Tokyo 100-8916, Tel: (813) 3595 2172, E-mail: sekitani-yui@mhlw.go.jp

LAO PEOPLE’S DEMOCRATIC REPUBLIC
Dr Bounlay Phommasack, Director General, Department of Communicable Diseases Control, Ministry of Health, Ban thatkhao, Sisattanack District, Rue Simeuang, Vientiane Capital, Tel: (856) 2126 3980, E-mail: bphommasack@gmail.com

Dr Phengta Vongphrachan, Director, National Center for Laboratory and Epidemiology, Km 3, Thadeua Road, Sisattanack District, Vientiane Capital, Tel: (856) 2131 2351, E-mail: v.phengta@gmail.com

MALAYSIA
Dr Norhayati Binti Rusli, Deputy Director of Disease Control (Surveillance), Disease Control Division, Ministry of Health Malaysia, Level 6, Block E10, Complex E, Federal Government Administrative Complex, 62590 Putrajaya, Tel: (603) 8883 4118, E-mail: dr_norhayati@moh.gov.my

Dr Khebir Bin Verasahib, Head of Zoonosis Sector, Disease Control Division, Ministry of Health Malaysia, Level 3, Block E10, Complex E, Federal Government Administrative Complex, 62590 Putrajaya, Tel: (603) 8883 4412, E-mail: drkhebir@moh.gov.my

MONGOLIA
Dr Evlegsuren Ser-Od, Officer-in-charge, Coordination and Implementation of Communicable Disease Control and Prevention Policy, Division of Public Health, Ministry of Health, Olympic Street 2, Government Building VIII, Sukhbaatar District, Ulaanbaatar, E-mail: evlegsuren@moh.mn / evlegee@yahoo.com

Dr Nyamkhuu Dulmaa, Director-General, National Centre for Communicable Diseases, Director, National Influenza Center, Ministry of Health, Nam Yan Ju Street, Bayanzurkh District, Ulaanbaatar 210648, Tel: (976) 9910 0155, E-mail: dnyamkhuu_hanui@yahoo.com

NEW ZEALAND
Dr Darren Hunt, Director of Public Health, Ministry of Health, No. 1 The Terrace, PO Box 5013, Wellington, Tel: (644) 816 4366 / 816 2000, E-mail: darren_hunt@moh.govt.nz

PAPUA NEW GUINEA
Mr Berry Ropa, Programme Manager, Communicable Disease Surveillance and Emergency Response, Department of Health, Level 3, Aopi Centre, Waigani Drive, PO Box 807, Waigani, TelNo: (675) 301 3841, E-mail: bropa2013@gmail.com

PHILIPPINES
Dr Lyndon Lee Suy, National Program Manager, Dengue and Emerging Infectious Diseases, Department of Health, San Lazaro Compound, Tayuman, Sta. Cruz, Manila, Tel: (632) 651 7800 loc 2354, E-mail: donleesuymd@yahoo.com
PHILIPPINES

Dr Vikki Carr D de los Reyes, Medical Specialist III, Public Health Division, National Epidemiology Center, Department of Health, San Lazaro Compound, Tayuman, Sta. Cruz, Manila, Tel: (632) 651 7800 loc 2929, E-mail: vcdelosreyesmd@gmail.com

REPUBLIC OF KOREA

Ms Jia Lee, Technical Officer, Division of Infectious Disease Control, Korea Centers for Disease Control and Prevention, Ministry of Health and Welfare, 187 Osongsaengmyoung 2(i)-ro, Osong-eup, Cheongwon-gun, Chungcheongbuk-do 363-951, Tel: (82 43) 719 7124, E-mail: leejia81@gmail.com

Ms Ju Eun Park, Technical Officer, Division of Infectious Disease Control, Korea Centers for Disease Control and Prevention, Ministry of Health and Welfare, 187 Osongsaengmyoung 2(i)-ro, Osong-eup, Cheongwon-gun, Chungcheongbuk-do 363-951, Tel: (82 43) 719 7133, Fax : (82 43) 719 7139, E-mail: pje982@gmail.com

SINGAPORE

Ms See Wanhan, Public Health Officer, Epidemiology and Disease Control Division, Public Health Group, Ministry of Health, College of Medicine Building, 16 College Road, Singapore 169854, Tel: (65) 6325 1216, Fax : (65) 6221 7554, E-mail: see_wanhan@moh.gov.sg

VIET NAM

Dr Ha Huy Toan, Deputy Head, Department of Border Health Quarantine, General Department of Preventive Medicine, 135/1 Nui Truc Alley, Ba Dinh District, Hanoi, Tel: (844) 3846 4415, Fax : (844) 3736 7853, E-mail: toanydpvn@gmail.com

Dr Tran Nhu Duong, Deputy Director, National Institute of Hygiene and Epidemiology, No. 1 Yersin Street, Hanoi, Tel: (844) 3971 5679, Fax : (844) 3971 6497, E-mail: tranhuduong@gmail.com

2. TECHNICAL ADVISORY GROUP

Dr Jeffery Cutter, Director, Communicable Diseases Division, Ministry of Health, College of Medicine Building, 16 College Road, Singapore 169854, Singapore, Tel: (65) 6325 9018, E-mail: jeffery_cutter@moh.gov.sg

Prof John Mackenzie, Research Associate and Professor of Tropical Infectious Diseases, Faculty of Health Sciences, Curtin University, GPO Box U1987, Perth WA 6845, Australia, TelNo: (614) 3987 5697, E-mail: j.mackenzie@curtin.edu.au

Dr Haruo Watanabe, Director General, National Institute of Infectious Diseases, 1-23-1 Toyama, Shinjuku-ku, Tokyo 162-8640, Japan, Tel: (813) 5285 1337, Fax : (813) 5285 1193, E-mail: haruwata@nih.go.jp
3. RESOURCE PERSONS

Mr Graham Rady, Monitoring and Evaluation Consultant, 9 Wadham Place, Florey, Canberra, ACT 2615, Australia, Tel: (612) 6259 7468, E-mail: grahamrady@gmail.com

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 MS G-16, Atlanta, GA 30333, United States of America, Tel: (1 404) 553 7772, E-mail: bqq3@cdc.gov

Dr Su Haijun, Director, Division of Communicable Disease Prevention and Control, Bureau of Disease Prevention and Control, National Health and Family Planning Commission, No. 1, Xi Zhi Men Wai Nan Lu, Xicheng District, Beijing 100044, China, Tel: (86 10) 6879 2335, E-mail: suhj@nhfpc.gov.cn

4 CONSULTANT

Mr Andrew Forsyth, Consultant, Team Leader, Public Health Legislation, Public Health Group, Ministry of Health, No. 1 The Terrace, PO Box 5013, Wellington, New Zealand, Tel: (644) 816 4429, E-mail: andrew_forsyth@moh.govt.nz

5. OBSERVERS/PARTNERS

<table>
<thead>
<tr>
<th>ASIA-EUROPE FOUNDATION</th>
<th>Ms Sunkyoung Lee, Project Manager, ASEF Public Health Network, Asia-Europe Foundation (ASEF), 31 Heng Mui Keng Terrace, Singapore 119595, Singapore, Tel: (65) 6874 9753, E-mail: <a href="mailto:sunkyoung.lee@asef.org">sunkyoung.lee@asef.org</a></th>
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<tr>
<td>CARIBBEAN PUBLIC HEALTH AGENCY</td>
<td>Dr Babatunde Olowokure, Director, Surveillance, Disease Prevention and Control Division, Caribbean Public Health Agency (CARPHA), 16-18 Jamaica Boulevard, Federation Park, Port of Spain, Trinidad and Tobago, Te (1 868) 622 4261, E-mail: <a href="mailto:olowokba@carpha.org">olowokba@carpha.org</a></td>
</tr>
<tr>
<td>EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL</td>
<td>Dr Isabelle Devaux, Senior Expert, Epidemiological Method Section, Surveillance and Response Support Unit, European Centre for Disease Prevention and Control, Tomtebodavägen 11a, 171 83 Stockholm, Sweden, Tel: (468) 5860 1634, E-mail: <a href="mailto:isabelle.devaux@ecdc.europa.eu">isabelle.devaux@ecdc.europa.eu</a> / <a href="mailto:idevaux11@gmail.com">idevaux11@gmail.com</a></td>
</tr>
<tr>
<td>FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS</td>
<td>Dr David Castellan, Senior Veterinary Epidemiologist, Emergency Centre for Transboundary Animal Diseases, Regional Office for Asia and the Pacific, Food and Agriculture Organization of the United Nations, Bangkok, Thailand, E-mail: <a href="mailto:david.castellan@fao.org">david.castellan@fao.org</a></td>
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<tr>
<td>INTERNATIONAL FEDERATION OF RED CROSS AND RED CRESCENT SOCIETIES</td>
<td>Dr Bhanu Pratap, Emergency Health Coordinator, International Federation of Red Cross and Red Crescent Societies, Philippines, E-mail: <a href="mailto:bhanu.pratap@ifrc.org">bhanu.pratap@ifrc.org</a></td>
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<td>Mr Ryan Jay Jopia, Health Services Manager, Philippine Red Cross, E-mail: <a href="mailto:ryanjay.jopia@redcross.org.ph">ryanjay.jopia@redcross.org.ph</a></td>
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<td>Country</td>
<td>Name</td>
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<td>Japan International Cooperation Agency</td>
<td>Dr. Shinichi Takenaka</td>
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<td>Japan International Cooperation System</td>
<td>Ms Naoko Ochiai</td>
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<tr>
<td>Mekong Basin Disease Surveillance Foundation</td>
<td>Dr Moe Ko Oo</td>
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<tr>
<td>National Centre for Global Health</td>
<td>Dr. Shuzo Kanagawa</td>
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<tr>
<td>National Institute of Infectious Diseases</td>
<td>Dr Kazunori Oishi</td>
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<tr>
<td>Public Health Agency of Canada</td>
<td>Dr Felix Li</td>
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<tr>
<td>United States Agency for International Development</td>
<td>Dr Milton Amayun</td>
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<tr>
<td>United States Centers for Disease Control and Prevention</td>
<td>Dr. Andrew Corwin</td>
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<td>United States Centers for Disease Control and Prevention</td>
<td>Dr Christopher Gregory</td>
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<tr>
<td>United States Centers for Disease Control and Prevention</td>
<td>Ms Lauren Polansky</td>
</tr>
</tbody>
</table>
### UNITED STATES
#### DEPARTMENT OF DEFENSE
Mr Andrew Hollands, International Project Manager,
Cooperative Biological Engagement, Defense Threat Reduction Agency, United States Department of Defense, 8725 John J Kingman Road, Fort Belvoir, VA 22060-6201, United States of America,
Tel: (1 703) 767 1626, E-mail: andrew.hollands@dtra.mil

### UNITED STATES
#### DEPARTMENT OF HEALTH AND HUMAN SERVICES
Ms Anne Yu, Deputy Director, Office of Pandemics and Emerging Threats,
Office of the Secretary, United States Department of Health and Human Services, 200 Independence Avenue SW,
Washington, DC 20201, United States of America
Tel: (1 202) 205 5534 / 603 2280, E-mail: anne.yu@hhs.gov

### WORLD ORGANISATION FOR ANIMAL HEALTH
Dr Hnin Thidar Myint, Regional Project Coordinator, Regional Representation for Asia and the Pacific,
World Organisation for Animal Health, 5/F Food Science Building, The University of Tokyo, 1-1-1 Yayoi, Bunkyo-ku, Tokyo 113-8657, Japan
Tel: (813) 5805 1931, E-mail: hnin.thidar@oie.int

Dr Mary Joy Gordoncillo, Science and One Health Coordinator, Sub-Regional Representation for South-East Asia,
World Organisation for Animal Health, c/o DLD, 69/1 Phaya Thai Road, Ratchathewi 10400, Bangkok, Thailand
Tel: (66 2) 653 4864, E-mail: m.gordoncillo@oie.int

### 6. SECRETARIAT

#### WHO REGIONAL OFFICE FOR THE WESTERN PACIFIC
Dr Li Ailan, Director, Health Security and Emergencies,
World Health Organization, Regional Office for the Western Pacific, P.O. Box 2932, 1000 Manila, Philippines,
Tel: (632) 528 8001, E-mail: lia@wpro.who.int

Dr Chin Kei Lee, Team Leader, Emerging Disease Surveillance and Response, E-mail: lecc@wpro.who.int

Dr Jun Nakagawa, Programme Management Officer, Health Security and Emergencies, E-mail: nakagawaj@wpro.who.int

Dr Tomoe Shimada, Medical Officer (FETP), Emerging Disease Surveillance and Response, E-mail: shimadat@wpro.who.int

Dr Angela Merianos, Medical Officer (Influenza), Emerging Disease Surveillance and Response, E-mail: merianosa@wpro.who.int

Dr Frank Konings, Technical Officer (Laboratory), Emerging Disease Surveillance and Response, E-mail: koningsf@wpro.who.int

Dr Xu Zhen, Epidemiologist (Zoonotic Disease), Emerging Disease Surveillance and Response, E-mail: xuz@wpro.who.int

Dr Dubravka Selenic Minet, Epidemiologist (Risk Assessment), Emerging Disease Surveillance and Response, E-mail: selenicminetd@wpro.who.int

Ms Joy Gregory, Technical Officer (WPSAR), Emerging Disease Surveillance and Response, E-mail: gregoryj@wpro.who.int

Ms Joy Caminade, Technical Officer (Risk Communications), Emerging Disease Surveillance and Response, E-mail: caminadej@wpro.who.int
WHO REGIONAL OFFICE FOR THE WESTERN PACIFIC

Ms May Chiew, Technical Officer (Surveillance), Emerging Disease Surveillance and Response, E-mail: chiewm@wpro.who.int

Ms Satoko Kiyota, Emerging Disease Surveillance and Response, E-mail: kiyotas@wpro.who.int

Ms Sarah Hamid, Emerging Disease Surveillance and Response, E-mail: hamids@wpro.who.int

Mr Jang Hwan Bae, Food Safety, E-mail: baej@wpro.who.int

Ms Yoo Mi Kim, Food Safety, E-mail: kimyoo@wpro.who.int

WHO CAMBODIA
Dr Reiko Tsuyuoka, Team Leader, Emerging Disease Surveillance and Response, Office of the WHO Representative in Cambodia, WHO, No. 177-179 corner Streets Pasteur (51) and 254, P.O. Box 1217, Sangkat Chaktomouk, Khan Daun Penh, Phnom Penh, Cambodia, Tel: (855) 2321 6610, E-mail: tsuyuokar@wpro.who.int

WHO CHINA
Dr Zhang Lan, National Professional Officer, Office of the WHO Representative in China, WHO, 401 Dongwai Diplomatic Office Building 23, Dongzhimenwai Dajie, Chaoyang District, 100600 Beijing, China, Tel: (86 10) 6532 7189, E-mail: zhangl@wpro.who.int

WHO LAO PEOPLE’S DEMOCRATIC REPUBLIC
Dr Luo Dapeng, Epidemiologist, Emerging Disease Surveillance and Response, Office of the WHO Representative in the Lao People's Democratic Republic, WHO, 125 Saphanthong Road, Unit 5, Ban Saphangthongtai, Sisattanak District, Vientiane, Lao People's Democratic Republic, Tel: (856) 2135 3902, E-mail: luod@wpro.who.int

WHO MONGOLIA
Dr Ariuntuya Ochirpurev, Technical Officer, National Professional Officer, Emerging Disease Surveillance and Response, Office of the WHO Representative in Mongolia, WHO, Ministry of Health, Government Building No. 8, Ulaanbaatar, Mongolia, Tel: (976) 1132 7870, E-mail: ochirpureva@wpro.who.int

WHO PAPUA NEW GUINEA
Dr Boris Pavlin, Epidemiologist, Emerging Disease Surveillance and Response, Office of the WHO Representative in Papua New Guinea, WHO, 4th Floor, AOPI CENTRE, Waigani Drive, Port Moresby, Papua New Guinea, Tel: (675) 325 7827, E-mail: pavlinb@wpro.who.int

WHO PHILIPPINES
Dr Gerardo Medina, Technical Officer (Emergency and Humanitarian Action), Office of the WHO Representative in the Philippines, WHO, Bldg. 3, G/F Department of Health, San Lazaro Compound, Tayuman, Sta. Cruz, Manila, Philippines, Tel: (632) 310 6370, Fax : (632) 310 6550, E-mail: medinag@wpro.who.int

Dr Ruth Foxwell, Office of the WHO Representative in the Philippines, WHO, Bldg. 3, G/F Department of Health, San Lazaro Compound, Tayuman, Sta. Cruz, Manila, Philippines, Tel: (632) 310 6370, E-mail: foxwella@wpro.who.int
WHO SOUTH PACIFIC
Dr Eric Nilles, Medical Officer, Emerging Disease Surveillance and Response, Office of the WHO Representative in the South Pacific, WHO, Level 4 Provident Plaza One, Downtown Boulevard, 33 Ellery Street, Suva, Fiji, Tel: (679) 330 4600, E-mail: nillese@wpro.who.int

WHO VIET NAM
Dr Masaya Kato, Medical Officer, Communicable Disease Group Coordination, Office of the WHO Representative in the Socialist Republic of Viet Nam, WHO, 63 Tran Hung Dao Street, Hoan Kiem District, Hanoi, Socialist Republic of Viet Nam, Tel: (844) 3943 3734, E-mail: katom@wpro.who.int

Dr Nguyen Thi Phuc, Technical Officer (Avian and Pandemic Influenza), Emerging Disease Surveillance and Response, Office of the WHO Representative in the Socialist Republic of Viet Nam, WHO, 63 Tran Hung Dao Street, Hoan Kiem District, Hanoi, Socialist Republic of Viet Nam, Tel: (844) 3943 3734, E-mail: phucn@wpro.who.int

WHO REGIONAL OFFICE FOR THE EASTERN MEDITERRANEAN
Dr SK MD Mamunur Rahman Malik, Regional Adviser, Surveillance, Forecasting and Responses, WHO, Regional Office for the Eastern Mediterranean, Monazamet El Seha El Alamia Str, Extension of Abdel Razak El Sanhouri Street, P.O. Box 7608, Nasr City, Cairo 11371, Egypt, Tel: (202) 2276 5583, E-mail: malikm@who.int

WHO HEADQUARTERS
Dr Florence Janine Fuchs, Coordinator, IHR Capacity Assessment, Development and Maintenance, WHO, Avenue Appia 20, CH-1211 Geneva 27, Switzerland, Tel: (41 22) 791 2111, E-mail: fuchsf@who.int

Dr Pierre Formenty, Scientist, Control of Epidemic Diseases, WHO, Avenue Appia 20, CH-1211 Geneva 27, Switzerland, Tel: (41 22) 791 2111, E-mail: formentyp@who.int
Regional Meeting of the Asia Pacific Technical Advisory Group on the Asia Pacific Strategy for Emerging Diseases (2010)

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