<table>
<thead>
<tr>
<th>CONTENTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgements</td>
<td>2</td>
</tr>
<tr>
<td>Executive summary</td>
<td>3</td>
</tr>
<tr>
<td>Introduction</td>
<td>7</td>
</tr>
<tr>
<td><strong>Focus Area 1</strong>: Surveillance, risk assessment and response</td>
<td>11</td>
</tr>
<tr>
<td><strong>Focus Area 2</strong>: Laboratories</td>
<td>19</td>
</tr>
<tr>
<td><strong>Focus Area 3</strong>: Zoonoses</td>
<td>27</td>
</tr>
<tr>
<td><strong>Focus Area 4</strong>: Infection prevention and control</td>
<td>33</td>
</tr>
<tr>
<td><strong>Focus Area 5</strong>: Risk communications</td>
<td>37</td>
</tr>
<tr>
<td><strong>Focus Area 6</strong>: Public health emergency preparedness</td>
<td>43</td>
</tr>
<tr>
<td><strong>Focus Area 7</strong>: Regional preparedness, alert and response</td>
<td>51</td>
</tr>
<tr>
<td><strong>Focus Area 8</strong>: Monitoring and evaluation</td>
<td>55</td>
</tr>
<tr>
<td>Mainstreaming gender</td>
<td>59</td>
</tr>
<tr>
<td>Challenges and outlook</td>
<td>65</td>
</tr>
<tr>
<td>Acronyms</td>
<td>66</td>
</tr>
<tr>
<td><strong>Annex 1</strong>: Status report on IHR</td>
<td>67</td>
</tr>
<tr>
<td><strong>Annex 2</strong>: Progress on TAG recommendations from 2012</td>
<td>70</td>
</tr>
<tr>
<td><strong>Annex 3</strong>: Conclusions and recommendations from TAG meeting 2013</td>
<td>81</td>
</tr>
<tr>
<td><strong>Annex 4</strong>: List of main APSED partners</td>
<td>85</td>
</tr>
</tbody>
</table>
ACKNOWLEDGEMENTS

We acknowledge the collective progress of the countries and areas of the Western Pacific Region in securing regional health through the implementation of the Asia Pacific Strategy for Emerging Diseases (2010). We would also like to thank the many organizations, partners and others who have supported the implementation of APSED (2010). A list of our main partners can be found in Annex 4.
The emergence of two new viruses this year – an avian influenza in China affecting people for the first time and a coronavirus in the Middle East – and the persistence of diseases such as dengue reaffirm why countries have signed up to the International Health Regulations (IHR). Under the regulations, countries have committed themselves to making changes in both policy and practice that will improve their ability to detect, assess, report and respond to public health threats. The Asia Pacific Strategy for Emerging Diseases (APSED) was designed to guide countries of the South-East Asia and Western Pacific Regions in making these changes.

In order to monitor their own progress, countries can make use of tools including the IHR self-monitoring tool, the supplementary indicators developed for APSED and the milestones developed in order to track progress against the APSED workplan. This report gathers the results that countries in the Western Pacific Region have reported using these tools, along with the progress made by WHO in supporting them in the reporting year July 2012 to June 2013.

APSED suggests a step-wise approach, where Member States first focus on building individual technical areas, then strengthen the capabilities that link these areas, then reinforce the system as a whole. In the Western Pacific, most countries have completed or are completing the first of these steps, and are working on the second.

The basics of surveillance systems are in place. In their responses to a questionnaire monitoring progress in meeting obligations under the International Health Regulations (IHR), 25 of the countries in the Region reported that they have designated specific units for surveillance of public health risks; 85% of these countries indicated timely reporting from at least 80% of their reporting units. (In 2013, 26 of the 27 countries in the Region submitted the IHR questionnaire.) They have strengthened indicator-based surveillance, which relies on data gathered from the field, and event-based surveillance where other sources of information such as the media are used. The documentation of these activities and risk assessments is being conducted more regularly. These approaches contribute to more efficient and effective responses to public health events.

Twenty-one laboratories in 15 countries are part of WHO’s Global Influenza Surveillance and Response System, a network that was built for influenza but the infrastructure and technical expertise of which can be applied towards other diseases. The focus over this past year has been on strengthening the quality of the public health laboratories in Member States while further building the system for rapid, accurate and safe detection of emerging infectious diseases.

Most countries in the Western Pacific Region now have in place the basics of infection prevention and control, such as an oversight structure and a national strategy.
Basic coordination between the human and animal health sectors exists for addressing diseases of animal origin in most countries, and many have also decided on priority zoonotic diseases in order to better focus their work.

Most Member States have developed mechanisms for conducting risk communication during a public health emergency, and health emergency communications plans have been put in place in the majority of the countries in the Region.

In terms of public health emergency planning, the focus in 2012–2013 has been on helping priority countries with the initial steps towards establishing functional emergency operations centres (EOCs) in ministries of health. With WHO support, all four of the priority countries are moving forward with their plans.

WHO’s Regional Office for the Western Pacific has upgraded its EOC to better serve Member States during emergencies, and it is being used in quiet times to monitor disease in the Region and share information through mechanisms such as the Western Pacific Surveillance and Response (WPSAR) journal and routine situation updates, and in support to specific needs, such as guidelines on dengue management, H7N9 and Middle East respiratory syndrome coronavirus.

As APSED moves forward, Member States in the Region are becoming increasingly results-focused, with the majority having now aligned their emerging infectious disease workplans with APSED.

Gender, an issue that cuts across the APSED focus areas, is fundamental to understanding and responding to any particular disease. WHO’s Regional Office for the Western Pacific and WHO Country Offices, working together with Member States, have made considerable strides integrating gender into routine work, particularly in terms of raising awareness of the importance of considering gender during epidemiological investigations.

**CHALLENGES**

The challenges across focus areas are to make better use of the tools at hand, be it analysing information from surveillance in more depth, communicating the results of risk assessments more widely, evaluating the impact of communications strategies, or ensuring that EOCs are not mothballed awaiting emergencies but rather continue to be used on a routine basis.

Although the laboratory systems are growing stronger, they are not yet universally capable of detecting emerging, re-emerging or novel pathogens quickly and accurately.
Despite a good foundation, it is important to continue to improve and further expand the coordination and collaboration systems between human and animal health organizations at the national and regional levels. This type of cooperation plays an important role in response to outbreaks.

Health-care workers need support to be able to quickly put in place infection control and prevention measures during outbreaks.

Evaluating communications strategies after a health emergency is a key challenge due to limited capacity and staff time to conduct such evaluations.

As linkages across functional areas become increasingly important, the gaps in expertise needed to develop EOCs – which serve a vital coordination role – will become increasingly evident. WHO will encourage the process of EOC development by sharing the lessons it learns as it upgrades the regional EOC. Another coordination mechanism, the National IHR Focal Points (NFPs), will need support to strengthen their positions and their ability to communicate quickly and effectively during public health events.

Despite good progress made by many Member States, the establishment of the national planning and review process as country-led mechanism remains a challenging task.

As mentioned at the top of this section, there is a challenge in ensuring that data at hand, including information on gender, are fully analysed and used to inform actions.

**NEXT STEPS**

The direction for the next year and beyond is to continue to build the basic capabilities, upgrade where possible, and start to focus on linkages and the system as a whole.

To further strengthen public health surveillance, assessment and response capacity, the emphasis will be on helping countries to strengthen their risk assessment abilities through training workshops and other mechanisms, continuing to provide guidance on surveillance, and working with field epidemiology trainees to form “champions” of a good response.

Although a wider laboratory network is now in place, the focus will be on continuing to improve the capacity of national public health laboratories to detect pathogens rapidly, accurately and safely, and as part of a larger regional and international network. Note that ensuring quality improvement is never “done” but always a work in progress.

WHO should continue to encourage the development and expansion of close and sustainable collaboration between the human and animal health sectors both at the national and regional level.

WHO will continue to disseminate its practical guide for establishing EOCs, and advocate for the empowerment of NFPs in Member States. In its own EOC, the Regional Office will continue to incorporate new functions such as expanding the reach of its event-based surveillance information and relevant networks like the Global Outbreak Alert and
Response Network. Lessons learnt will be shared with Member States to support the establishment of national EOCs.

Guidelines on infection prevention will be distributed, especially as part of the response to outbreaks when this information is urgently needed.

At the regional level, lessons learnt and best practices on health emergency communications will be shared and used as the basis for reviewing communications strategies in countries.

Member States will be encouraged to strengthen and maintain the national planning and review process for APSED/IHR as part of a simple and practical country-owned monitoring system.

Gender will continue to be integrated into the work of the Regional Office, in the training sessions it conducts for field epidemiology fellows, in the guidance it shares with Member States, and in the information it disseminates through WPSAR.

In 2012, 14 of the 27 countries in the Western Pacific Region requested a two-year extension to their deadline for implementation of IHR core capacities. Some of them continue to struggle to meet their goals, while others have flagged that sustaining capacities will be a challenge. Many will have to decide if they need to request an extension beyond 2014. As countries move to implement the IHR core requirements, the path forward is increasingly clear with guidance from APSED and other strategies. What remains is to ensure that their will to continue is supported by the means to advance along this path.
The Asia Pacific Strategy for Emerging Diseases is an important strategic framework for building sustainable national and regional capacities in the Asia Pacific region for risk reduction, preparedness, detection, risk assessment and response to emerging diseases.

While significant achievements were made in the first phase of APSED (from 2005 to 2010), the experience of the past year has further demonstrated that emerging diseases and other public health events will continue to occur in the Asia Pacific region on a regular basis. The past year has seen the emergence of two diseases that serve to remind countries why it is important to invest in their public health systems. Firstly, in the Middle East, a new coronavirus, known as MERS-CoV, emerged in Jordan, Qatar, Saudi Arabia and the United Arab Emirates, and was exported to several countries in Europe and North Africa. Next, avian influenza A(H7N9), which had never before affected humans, emerged as a human infection in China. Although the former pathogen travelled widely and the latter seemed not to, both diseases were reminders of global interconnectivity and the need to be prepared. The swift and effective actions taken in China also served to demonstrate that effective preparedness can ensure a rapid public health emergency response and minimize negative health, economic and social consequences.

These events embody the kind of threats that the International Health Regulations were devised to combat. The regulations, which came into effect in 2007, require countries to strengthen their ability to detect, report and respond to the spread of emerging diseases and other public health threats.

There are a number of tools countries can use to measure their progress towards implementing APSED and IHR obligations. These include the IHR self-monitoring tool, the supplementary indicators developed for APSED and the milestones developed in order to track progress against the APSED workplan. This report gathers results that countries have submitted, along with the progress made by WHO in supporting them.

With respect to the IHR self-monitoring tool, it should be noted that throughout this report, percentage values relate to responding countries only. There are 27 Member States in WHO’s Western Pacific Region, out of which 26 submitted the survey in 2013. Analysis is based on these 26 countries.

This report looks at the progress that countries and WHO have made since the formulation of APSED (2010), in particular in the reporting year July 2012 to June 2013. Each APSED focus area, as well as the issue of gender mainstreaming, is discussed, beginning with a description of the area, followed by an overview of progress, activities at the regional level and in countries, challenges and next steps.

This report provides an overview of progress and activities carried out under the auspices of APSED. It is important to note that it is not meant to be comprehensive and that countries may have engaged in further activities not noted herein. Lastly, we acknowledge that APSED is a broad strategy and other programmes are working towards similar goals, often in partnership with APSED. Where relevant, we have noted the progress led by other partners.
On 31 March 2013, China’s National Health and Family Planning Commission (NHFPC) notified WHO of cases of human infection with the avian influenza A(H7N9) virus in Shanghai and Anhui. The process had begun on 26 February 2013 when public health authorities in Shanghai were alerted to two cases of an unidentifiable illness. Four weeks later, the Chinese Center for Disease Control and Prevention (China CDC) laboratory – the WHO collaborating centre for influenza in Beijing – confirmed that this was a new flu strain, never before seen in humans.

There was immediate concern because this was a new avian virus in humans, causing serious disease, and which was soon identified as having genetic characteristics that suggested an enhanced capacity for mammalian infection.

The Government of China recognized the event was of highest priority and established a multisectoral taskforce of 16 ministries led by the NHFPC on 3 April. China CDC published the genomic sequences of viruses from the first three human cases on the Global Initiative on Sharing Avian Influenza Data (GISAID) as of 31 March. China CDC also shared the virus isolates with the other WHO collaborating centres for influenza surveillance and laboratories on 10 April. This led to identification of the virus’ mutations, tracing its origins and developing probes and primers for molecular-based diagnostic tests. On 3 April, diagnostic kits were distributed to National Veterinary Services, provincial CDC laboratories and major hospitals’ clinical pathology laboratories.

On 1 April, the NHFPC enhanced surveillance for pneumonia and influenza-like illnesses across the country. Within four days of the initial IHR notification, guidelines regarding infection control, medical clinical management and surveillance were updated and issued. Epidemiological investigations in Shanghai quickly identified live poultry markets as the potential main source of infection to humans. On 6 April, all such markets in Shanghai were closed.

As the number of cases continued to increase, China CDC conducted a series of rapid risk assessments. In week 2, China CDC participated in two teleconferences with the WHO Western Pacific Regional Office in Manila, WHO Headquarters in Geneva, and the Global Outbreak Alert and Response Network (GOARN) partners.

Chinese authorities provided timely information to the public on the number of confirmed human cases, positive animal samples and affected locations through web sites and social media so the world could follow the epidemic situation. The Chinese Government’s commitment to timely reporting meant that new cases were frequently published on provincial government web sites before the centrally-coordinated IHR notification was received by WHO. Health authorities were open in sharing important risk assessment findings and hypotheses with national and international media during regular press conferences. Detailed virological and epidemiological results of the investigations and updates were published in scientific journals on 11 and 24 April.

Health workers collect samples from participants acting as patients during a drill against H7N9 in Anhui province, China, in April 2013.
Case study - Investments pay off: H7N9 in China (cont.)

China's response was exemplary because it had learnt from experience. In response to lessons from the SARS outbreak in 2003, China devoted funds to building a new public health infrastructure. Major administrative levels of government from county to central level have their own Centers for Disease Control and Prevention with well-trained staff and fully-equipped public health laboratories, using modern information technologies. The influenza surveillance network in China expanded several-fold from 63 laboratories and 197 sentinel hospitals in 2005 to 441 laboratories and 556 sentinel hospitals in 2009. China has had a new WHO collaborating centre for influenza surveillance and research since October 2010. Field epidemiology training programmes, which were established at national and provincial levels, played a central role in strengthening epidemiology capacity in human and animal health, and response capacities. A web-based nationwide reporting system of 39 notifiable infectious diseases was built in 2004. Event-based surveillance (i.e. reports of outbreaks) and an early warning system based on automated analysis of large volume of data were put in place. Other sentinel surveillance systems were implemented, namely monitoring for pneumonia of unknown etiology, salmonella infection and mortality.

Right from the beginning of the outbreak, WHO collaborated with China CDC and the NHFPC on risk assessments and communication, such as holding joint press conferences. This support included a forum where key Chinese clinicians have been in close discussion with internationally recognized influenza experts to improve the clinical management of severely ill patients and to conduct research on clinical virology and treatment regimens. WHO and NHFPC jointly coordinated a mission of international influenza scientists who visited Beijing and Shanghai between 18 and 25 April to assess the H7N9 situation. This collaboration allowed top scientists to share expert opinions on the level of the H7N9 threat and encouraged investigators to close major gaps in critical knowledge and understanding.

As of 11 August 2013, 135 cases had been reported, including 44 deaths.

Although the animal reservoir of infection had not been identified at the time of writing, the main vehicle of transmission to humans is likely domestic poultry, particularly via live poultry markets. Investigations of patients and over 3000 close contacts did not reveal evidence of sustained human-to-human transmission.

China's timely and transparent communication and close collaboration with WHO in assessing and responding to the new virus in humans is a result of sound planning, and close and continuing international collaboration. Above all, the effective national and international response can be seen as one of the major returns on the investments and efforts made by China and WHO in recent years.
Asia Pacific Strategy for Emerging Diseases
Progress Report 2013
Securing regional health
WHO
Surveillance, risk assessment and response are essential public health activities to minimize the impact of public health events. These functions work together: timely and appropriate surveillance data gathering leads to prompt and accurate risk assessments which consequently inform a proportionate and timely response.

APSED outlines the key components that should be in place at the national and local level in order to achieve this response. It supports implementing, maintaining and improving surveillance systems for both indicator-based surveillance (IBS) and event-based surveillance (EBS), strengthening risk assessment capacity, and introducing or maintaining sustainable field epidemiology training programmes to teach effective public health practices.

**Indicator-based surveillance (IBS)** is the routine reporting of cases of disease that are collected and analysed against trends and predefined thresholds that may trigger further public health action.

**Event-based surveillance (EBS)** is the organized and rapid capture of information about events that pose a potential risk to public health. This information may be in the form of rumours or other ad hoc reports transmitted through formal channels (e.g. routine reporting systems) or informal channels (e.g. media, health workers).

**Risk assessment** is a systematic process for gathering, assessing and documenting information to assign a level of risk and proportionate response to manage public health events.

The Field Epidemiology Training Programme (FETP) has been developed to ensure that enough people have the knowledge and abilities to engage in these functions. The programme provides on-the-job mentorship and training in applied epidemiology. A two-year FETP is considered the standard. However, it is time-consuming and requires the participation of many support people, which is not always feasible in resource-limited settings. Therefore, shorter, modified field epidemiology training, known as FET, has been introduced in Cambodia, the Lao People’s Democratic Republic, Mongolia and recently Papua New Guinea as a feasible and sustainable training model.

<< Mongolian health officials participate in a risk assessment exercise in December 2012.>>
REGIONAL OVERVIEW

Overall, the knowledge, capacity and enabling environment for surveillance, risk assessment and response continue to be strengthened in both developed and developing countries in the Region. For example, Singapore carries out daily “horizontal scanning” to determine if any hazards have been identified and to verify the information. Member States have sustained and strengthened IBS, while EBS continues to be enhanced with systematic documentation of events and risk assessments. This contributes to more efficient and effective responses to public health events. As IBS plays a crucial role in risk assessment of outbreaks detected by EBS, an effective response relies on all three functions.

The 2013 IHR monitoring questionnaire results confirm these advances. Twenty-five of the 26 countries that submitted the IHR questionnaire have designated specific units for surveillance of public health risks, 85% of these indicated timely reporting from at least 80% of their reporting units.

As the vehicles and the “glue” for these three functions, rapid response teams (RRTs) and FET/FETP students and graduates continue to actively respond to acute events, contributing to capacity-building in public health systems. The majority of Member States (21/26 or 81%) has developed standard operating procedures (SOPs) for deployment of RRTs. In the past year, FET trainees and graduates conducted field investigations as members of RRTs or jointly with them, as well as in collaboration with other partners, such as the animal health sector.

Overall as a Region, the respondents to the Questionnaire for Monitoring Progress in the Implementation of IHR Core Capacities in States Parties noted the following achievements:

- Surveillance data on epidemic-prone and priority diseases are analysed at least weekly at national and subnational level in all 26 countries.

- SOPs and guidelines for EBS are available in 21 (81%) countries. Twenty-four or 92% of countries have designated unit(s) for EBS that may be part of an existing routine surveillance system.

- In 2013, 19 (73%) of the countries reported that they have conducted a national risk assessment to identify potential urgent public health events and the most likely sources of these events. This is an increase from 2012 when 50% of countries reported doing this.
Facing an old foe: dengue in Solomon Islands

In 2013, Solomon Islands faced its largest dengue outbreak since the Second World War. Clinicians at the National Referral Hospital in the capital, Honiara, began noticing patients presenting with dengue-like symptoms in January. By the time the outbreak waned in July, there had been over 6000 cases and eight deaths, having severely taxed the health-care system and the staff who worked diligently on the response.

Dr Aaron Oritaimae is the chair of the Hospital Emergency Operation Committee which was responsible for the overall management of the dengue outbreak response in Honiara. He said, “The staff worked tirelessly at the National Referral Hospital to control the dengue. The Hospital Emergency Operation Centre was activated early during the outbreak, and took control of the situation. The Committee immediately activated the hospital mass casualty incident plan, which led to the mobilization of resources to meet the surge in demand.”

The country was able to benefit from lessons learnt in other emergencies. “Solomon Islands has never responded to any major outbreaks in the past. However, it has responded to natural disasters. The most recent one was the earthquake and tsunami on the island of Santa Cruz. There were lessons learnt from these past experiences that made our response more coordinated and well-focused.”

As the outbreak unfolded, WHO, partners and government counterparts worked together to determine where to provide support. “There were many patients with severe symptoms requiring hospitalization. This pointed to the need for more training for local medical staff on how to treat these cases,” says Dr Eric Nilles, Medical Officer, at WHO’s South Pacific office. “Clinical management is often forgotten during dengue outbreaks, but it should always be a priority because good clinical management saves lives.” Two specialists from Malaysia spent a total of four weeks in the country, conducting training for doctors and nurses to assure high quality patient care based on WHO clinical management guidelines.

Other key partners also supported the response: Australia and New Zealand sent medical teams to work with the National Referral Hospital, offering relief to local medical staff and allowing routine medical services to resume. The Secretariat of the Pacific Community (SPC) also assisted with coordinating epidemiological support.

A plan was developed that included implementing enhanced surveillance for dengue, developing a database and protocol for collating, analysing and distributing surveillance information, and ensuring that laboratories in the country had the ability and the necessary materials to test for dengue.

A Pacific-wide early warning system already in place, with five sentinel sites in Solomon Islands, helped in the roll-out of the enhanced dengue surveillance.

Other measures implemented by the Ministry of Health and Medical Services with WHO support included mosquito control measures and a public information campaign on the prevention of mosquito bites, the signs and symptoms of dengue, and encouraging the public to seek medical attention at the earliest sign of illness.

As the number of cases plateaued in the capital, the emphasis shifted to ensuring that the provinces would also be ready to handle more patients. “The country is using dengue as an entry point to strengthen overall response capacity,” says Dr Nilles. “The groundwork that is laid now will support future emergency responses.”

Local clinicians and WHO documented the response in a paper that was published in the WPSAR journal in July 2013. “It is very important to document these outbreaks to make sure information is publically available,” says Dr Nilles. “It helps us understand the movement of dengue in the Pacific and what factors are influencing it. It is not the answer, but it is a small piece of the puzzle.”
ACTIVITIES

At the regional level

A timely regional information-sharing mechanism developed by WHO’s Regional Office for both IBS and EBS (and risk assessment, when necessary) keeps Member States informed about developing issues, leading to rapid, coordinated responses where necessary. In addition to the Regional Office activities, WHO Country Offices and Member States have continued to build on their earlier activities and achievements in surveillance, risk assessment and response. The rapid responses by FET/FETP students and graduates and RRTs to major events detected during the past year demonstrate the value of these investments made over recent years.

In countries

Member States have enhanced timely sharing of IBS information through the implementation of web-based systems (in China, Malaysia and Viet Nam), e-mail list groups (the Pacific Public Health Surveillance Network), and surveillance web sites (Mongolia). Importantly, these enhancements are occurring through the use of existing systems, rather than by building new systems – for instance, the Lao People’s Democratic Republic established dengue sentinel sites in August 2012 at existing influenza-like illness (ILI)/severe acute respiratory infection (SARI) sites, maximizing the use of existing surveillance and laboratory networks (see Focus area 2 for more details on laboratory activities). In a similar spirit, the Pacific community uses the Pacific Syndromic Surveillance System under which surveillance data are shared weekly.

Where appropriate, training and guidance have been provided, and WHO has supported surveillance training in a number of Pacific island countries, including Fiji, Kiribati, the Marshall Islands, Nauru, Palau, Samoa, Solomon Islands, Tonga and Tuvalu. For discussing and exploring future IBS upgrade options, an IBS mission to the Lao People’s Democratic Republic was jointly conducted by WHO’s Regional Office for the Western Pacific and country counterparts in December 2012, which indicated the importance of sustainability and the linking of laboratory and clinical networks to surveillance.

Reporting of regional IBS data through biweekly updates on regional priority diseases (i.e. influenza, dengue, and hand, foot and mouth disease) via WHO’s regional web site, not only demonstrates the public health burden of these diseases, but has also been essential for timely assessments. These regional surveillance data assist rapid response by providing timely background and historic baseline data, allowing for evidence-based risk assessments. This regional IBS has only been possible because of the effectiveness of national IBS. For example, after H7N9 emerged, the current and historic ILI data from China (and surrounding Member States) proved vital to assessing the possibility of ongoing human-to-human transmission and undetected mild cases.

All countries now have a designated EBS unit, and several have initiated systematic documentation of events and risk assessment...
“Developing capacity” is one of those frequently used phrases that can be hard to visualize. For example, field epidemiologist training is one of the main ways to develop surveillance and response capacity. But what does this represent on the ground? In the Lao People’s Democratic Republic, it has meant creating a programme that is tailored to the needs of the country, and whose graduates are of immediate use to the country.

In 2009, the Ministry of Health in the Lao People’s Democratic Republic launched a FET programme with support from the United States Centers for Disease Control and Prevention (US CDC) and WHO. It developed an innovative one-year programme tailored to the Lao context, where the standard two-year programme would be too long. Eight trainees from the national and provincial level are selected annually from both the human and animal health sectors to participate in the programme, thereby facilitating the “One Health” initiative, which aims to unite human and veterinary medicine.

In 2012, an alumni network was established. Graduates are provided with opportunities to develop their skills as mentors to trainees in the field, improve their scientific writing in order to be able to participate in international conferences and produce publications, and develop case studies on Lao events to be used in surveillance and training of others. An alumni newsletter is planned for 2013 which will allow graduates to share experiences and stay informed of national activities. This will promote the programme and help build a strong network throughout the country.

In 2013, the network of 31 graduates from all 17 of the country’s provinces now comprises the core human resource for timely response to disease outbreaks throughout the country and for improving knowledge and skills by providing training at local levels.

The 2013 FET students have had a major role in the national response to the current dengue outbreak. The students were dispatched to seven epidemiology units in provinces reporting high incidence of dengue to assist local staff manage the response. Activities undertaken by the students included data collection and reporting using the national surveillance system; collection of enhanced data for cases and deaths; and updating the local Provincial Communicable Disease Control Committee on the dengue situation in a timely manner. These activities contributed to the evidence base that enabled appropriate interventions to be put in place to reduce the incidence of dengue at the provincial and national level. Through their participation, the FET students have gained a valuable learning experience which has broadened their skills working at the provincial level and will assist them in mounting effective outbreak responses they may lead as graduates.

Ms Amphai Khamsing, a Field Epidemiology Training graduate, speaks with villagers in Saravan province about an anthrax outbreak in April 2013.
As part of surveillance activities, two nurses in Solomon Islands head out to clinics accessible only by boat.

(Cambodia, China, the Lao People’s Democratic Republic, Macao (China), Malaysia, Mongolia, Papua New Guinea, the Philippines and Viet Nam), which will contribute to the response to future public health events. The major events detected by EBS and promptly responded to following joint Regional Office-Country Office risk assessments over the past 12 months were severe hand, foot and mouth disease associated with EV-71 (initially reported as an unknown disease) and human cases of infection with H5N1 in Cambodia; dengue outbreaks in Solomon Islands and the Lao People’s Democratic Republic; leptospirosis in the Philippines; and H7N9 in China. FET/FETP trainees and graduates were involved as members of the RRTs. Based on lessons learnt from previous events, longer-term regional capacity-building activities have also been implemented.

Member States are continuing their FET programmes and using their FET curriculum
as a training opportunity for non-field epidemiologists in public health and related sectors. The Lao People’s Democratic Republic, for example, continues to deliver one-month short courses in applied epidemiology for province and district public health staff. Its FET programme includes participants from other health sectors, such as animal health. Similarly, in Mongolia, other partners including animal and environmental health collaborate on response when appropriate. Papua New Guinea established its first ever FET in 2013. Programme assessments to enhance the effectiveness of FET were completed in Cambodia, (established FET in 2011) and Viet Nam (2009).

The FET fellowship programme at the WHO Regional Office acts as a vehicle for both information sharing and capacity-building. Through this 4–8-week programme, FET trainees learn the practice of EBS, IBS and risk assessment, and take their new skills home. The Regional Office continues to support Member States by conducting an annual FET meeting to enhance existing capacities. Risk assessment training was conducted in Japan to build risk assessment capacity among field epidemiologists there. Scientific writing courses were held in Mongolia and the Lao People’s Democratic Republic.

**CHALLENGES**

- Timely laboratory diagnosis for undiagnosed events, including emerging respiratory pathogens (see also Focus Area 2 on laboratories)
- Effective use of IBS by policy-makers and clinicians (see also the Mainstreaming Gender section)
- Systematic methods of screening and verification of events and documentation for EBS and risk assessments
- Sustaining the momentum and the capacities built through FET activities in surveillance, assessment and response capacity over the coming years.

**NEXT STEPS**

- Given ongoing threats from emerging respiratory pathogens, continue providing guidance and support for ILI/SARI surveillance, with timely laboratory and clinical collaborations.
- Continue upgrading of IBS and greater use of the data with technical support from WHO’s Regional Office.
- Continue risk assessment training at national level to build on progress made in EBS and timely reporting.
- Use the capacities built by FET (and “FET champions”) in recent years, to further strengthen public health surveillance, assessment and response capacity.
Laboratory testing is key for determining which pathogens, both known and new, are picked up by surveillance activities, and is instrumental in mounting a rapid and targeted response to curtail outbreaks. To achieve this, Member States are building laboratory systems that are able to do testing in an accurate and safe manner at national and subnational levels. If a country is not able to undertake advanced testing, international reference laboratories are there to assist, including WHO collaborating centres. This system makes significant contributions to Member States achieving core capacities under the IHR.

The laboratory focus area is closely linked to other disciplines such as surveillance, zoonoses and food safety. For example, during the initial stage of an outbreak, including those pathogens suspected to be foodborne, surveillance may pick up a clinical syndrome while not knowing the cause. In this case, the right specimens need to be collected using the right procedures and then shipped – safely and according to the regulations – to the appropriate laboratory for further identification and characterization. Once the specimens have arrived in good condition, laboratory testing can provide information regarding the relatedness of pathogens, epidemiological links, and indicate drug-resistance that might have an impact on response and infection prevention and control. For pathogens that have the potential to jump between humans and animals, such as influenza, it is crucial to maintain close links with laboratories in the animal health sector by sharing and comparing information and specimens to identify pathogens that may have the potential to spread among humans.

Under APSED, public health laboratory strengthening will continue to focus on emerging infectious diseases in close coordination with the Asia Pacific Strategy for Strengthening Health Laboratory Services (2010–2015) and aligned with the laboratory workplans and activities of other regional partners, such as the Association of Southeast Asian Nations (ASEAN), and tripartite members Food and Agriculture Organization of the United Nations (FAO) and World Organisation for Animal Health (OIE).

Finally, a public health laboratory system is only as strong as its weakest link, which is why APSED focuses on strengthening not only the infrastructure, but also the people. Building trusting relationships among the different players at all levels of the network provides a firm foundation for a strongly functioning public health laboratory system capable of responding to health threats.
The APSED laboratory focus area is intended to strengthen existing laboratory infrastructure to contribute to surveillance and effective response to emerging infectious diseases. To achieve this, WHO supports national steering committees and technical working groups with the implementation of national workplans for strengthening the public health laboratory system.

Influenza is one of the priority diseases in the Asia Pacific region. In fact, the region is a hotspot for the emergence of novel strains as seen with H5N1 and H7N9. It is therefore no surprise that the region is an active player in the WHO Global Influenza Surveillance and Response System (GISRS), a network of reference laboratories and laboratories in Member States called National Influenza Centres (NICs). In the Western Pacific Region, GISRS has 21 NICs in 15 countries and three WHO Collaborating Centres for Reference and Research on Influenza: one each in Australia, China and Japan. GISRS gathers and analyses information on the appearance of novel strains of influenza and played an important role in detecting and responding to novel strains.
role during the H7N9 outbreak by distributing laboratory guidance and facilitating virus sharing in line with the Pandemic Influenza Preparedness (PIP) Framework. Although the system was built for influenza, the infrastructure and technical expertise can be applied to other emerging infectious diseases, and viruses in particular.

In order to identify areas to provide support on improving skills and techniques for emerging infectious disease testing, it was first necessary to determine the current quality of laboratory testing within countries and across the Region. One way of making this determination is to use external quality assessments (EQAs). A panel of positive and negative samples is prepared by a coordinating laboratory and sent for testing by participating laboratories to assess their ability to correctly identify the contents. Participation of national reference laboratories in EQA schemes is part of the IHR core capacity for laboratories. To date, 25 of the 26 countries (96%) report that their national laboratories are successfully participating in an EQA scheme (up from 81% in 2012).

An EQA conducted at the global level for influenza diagnosis had a significant impact on the testing capacity globally and in the Region. A Technical Working Group consisting of experts from WHO collaborating centres and other reference laboratories developed an EQA for dengue (an APSED key milestone for year 2) to act as a model for other emerging infectious diseases. In addition, with support from WHO country offices, several Member States organized EQAs for priority diseases and foodborne diseases for laboratories at the national and subnational levels.

A roadmap for the establishment of an EQA for dengue and emerging infectious diseases was drafted during the previous reporting period. Over the past year, test panels and related documentation have been prepared and sent to 19 public health laboratories in the Western Pacific Region. After evaluation of the first round of testing, the next round is planned to test performance with more pathogens.

Finally, the Regional Office and Country Offices have provided technical guidance and support to our Member States for specimen collection, transport and laboratory analysis during several outbreaks of pathogens in the Region, a requirement for the IHR core capacity for laboratories. In 2013, 23 of 26 Member States indicated that they have a functional system for the collection, packaging and transportation of clinical specimens. Examples of such activities over the past year include an initially unknown disease in Cambodia that was later laboratory-confirmed as hand, foot and mouth disease; support with laboratory testing for post-flooding leptospirosis in the Philippines; and provision of rapid diagnostic kits and assistance with referral of specimens to advanced laboratories for serotyping during the dengue outbreak in Solomon Islands.

**ACTIVITIES**

**At the regional level**

In order to improve the ability of laboratory staff across the Region to correctly prepare specimens for shipment, training on shipping of biohazardous materials according to the International Airline Transportation Agency (IATA) rules was provided. Such training contributes to achieving the IHR core capacity for laboratories. So far, 24 of 26 Member States have indicated that their staff at the national or other relevant level have received training in the shipment of infectious specimens according to international standards.
The multiplication factor: Mongolian laboratory experts take it home

In late April 2013, two laboratory experts from Mongolia’s National Influenza Centre received five days of one-on-one training at the WHO Collaborating Centre for Reference and Research on Influenza at the Victorian Infectious Diseases Reference Laboratory in Melbourne, Australia. What they learnt had an immediate and direct impact on their work back home, as it coincided with the outbreak of H7N9 in China and allowed them to practise the diagnosis technique with the actual probes and reagents. But there were other, longer-term benefits.

One participant, Dr Darmaa Badarch, who is head of the virology laboratory in Mongolia’s national public health laboratory, said she appreciated the chance to see international laboratory standards in practice. “The laboratory [in Australia] had an excellent quality management system. These are important components of ISO standards we had heard of many times, but never had the chance to see in practice.” WHO is supporting laboratories across the Region to work towards ISO accreditation.

Dr Darmaa was accompanied by Mr Bayasgalan Namuutsetseg, a virologist who also works in the national laboratory. He focused on learning how to use new software to support his work. The training brought him personal success that will be important internationally. “I am so proud that I was able to enter a sequence with my name A/laanbaatar/366/2013(H3N2).” What he learnt was the process necessary to make a tree when a sequence is identified and, depending how it clusters, subtype it, and most importantly, share it online so that other laboratories can use it too.

The Mongolian experts joined 14 other scientists from national influenza laboratories in Cambodia, Fiji, the Lao People’s Democratic Republic, Malaysia, New Caledonia, New Zealand, Singapore and Viet Nam for a workshop on a range of practical laboratory activities, lectures and practical computer tutorials using sequence analysis tools.

When they returned to Mongolia, both Dr Darmaa and Mr Bayasgalan conducted training to share what they learnt with local colleagues. Dr Darmaa led a session on the molecular detection of mutations causing drug resistance in influenza viruses, an important part of tracking drug-resistance globally. Mr Bayasgalan trained colleagues on FluSurv and the tree-building programme, which compares virus sequences to determine how related they are. This is important because it can reveal epidemiological links.

WHO and partners such as US CDC and the Australian Department of Health and Ageing will continue to fund this type of training for countries in the Region.
This year, the workshop, held in the Lao People's Democratic Republic, was attended by 20 representatives from eight countries. These countries now have improved skillsets to follow the international rules governing such shipments. The next training is planned for 2013–2014.

The Sixth Meeting of National Influenza Centres and Influenza Surveillance in the Western Pacific and South-East Asia Regions was held in Viet Nam in May 2012. This annual meeting brings together directors of NICs and influenza experts from WHO collaborating centres to discuss recent developments related to influenza epidemiology and research.

Thirteen public health laboratory staff from Cambodia, the Lao People's Democratic Republic, the Philippines and Viet Nam joined a training and hands-on laboratory workshop for culturing and typing of leptospira using serological and molecular techniques in October 2012.

A regional training session on sequencing and phylogenetic analysis of influenza viruses was attended by 16 participants from NICs in nine Member States. Faculty members included experts from WHO Collaborating Centres for Influenza Reference and Research. The training included both laboratory work and a computer workshop. Throughout the course and during discussions, emphasis was placed on the ongoing H7N9 event.

Senior national public health laboratory staff attended the Second Laboratory Strengthening Meeting for Emerging Infectious Diseases in the Asia Pacific Region in the Philippines in June 2013. Member States presented their progress in implementing their national public health laboratory workplans for emerging infectious diseases and discussed approaches to establishing surveillance based on clinical syndromes, such as SARIs.

WHO worked closely with national public health laboratories in the Region to provide guidance and technical support, including protocols and reagents that cannot be routinely ordered (positive controls for molecular diagnosis), in order to establish H7N9 and MERS-CoV diagnostic testing capacity. International laboratories were identified to support countries without diagnostic capacity for these pathogens as well as for confirmation testing.

**In countries**

Several countries have made progress with public health laboratory policy-making. For example, in the Lao People’s Democratic Republic, a National Policy for Health Laboratories was approved by the Ministry of Health, and a National Laboratory Committee was established by ministerial decree. Additionally, a National Strategic Plan for Health Laboratories (2013–2020) was submitted for approval. In Malaysia, a National Steering Committee and a National Technical Advisory Committee for Laboratories have been established. In Viet Nam, WHO supported the development of technical regulations and national guidelines regarding biosafety requirements for laboratories as well as guidelines for their certification. Both have been approved by the Government.
Besides global and regional WHO EQA programmes, WHO has supported the conduct of EQA programmes for general bacteriology in Cambodia and enteric and foodborne pathogens in Viet Nam.

Joint training for public health laboratory staff from Cambodia and the Lao People’s Democratic Republic was conducted to strengthen laboratory quality management using an online tool that divides the quality system into distinct modules, developed by WHO Headquarters and the Royal Tropical Institute, Netherlands. The tool will be progressively rolled out in the Region, starting with Cambodia.

In Cambodia, the WHO Country Office and local public health laboratories have developed and piloted a Laboratory Information Management System (LIMS) which is being installed in laboratories. The LIMS will allow for better laboratory data collection, analysis and sharing.

The Philippines developed a manual for clinical specimens with guidelines for specimen collection, transport, and referral during infectious disease outbreaks. A workshop was held to familiarize and train public health laboratory staff on using the new manual. Additionally, the Research Institute for Tropical Medicine organized a simulation exercise to test their current laboratory response to novel respiratory pathogens, including MERS-CoV and H7N9.

Mongolia introduced several new technologies and techniques, such as freeze-drying of bacterial cultures which allows for prolonged storage and safe transportation of infectious materials. Additionally, a novel coding system for specimens using unique identifiers facilitated specimen tracking. Finally, applied microbiology training was provided to a group of laboratory staff from the public health, veterinary and inspection sectors.

In Singapore, the National Public Health Laboratory continues to enhance the diagnostic capabilities of its public hospital clinical laboratories in order to maintain capacity to detect and respond to outbreaks of emerging infectious diseases.

WHO worked closely with Pacific island countries to institute quality management systems in their laboratories. As of 2013, governments in four countries have officially endorsed national laboratory policies and strategic plans (Fiji, Kiribati, Tonga and Vanuatu). Another eight countries (Cook Islands, Federated States of Micronesia, Marshall Islands, Nauru, Palau, Samoa, Solomon Islands and Tuvalu) have draft policies and plans at various stages of development. Since 2011, about 200 laboratory staff have been trained in the implementation of quality management systems. This is an example of where another strategy the Asia Pacific Strategy for Strengthening Health LaboratorServices (2010–2015), complements APSED.

Influenza is one of the priority diseases in the Asia Pacific region. In fact, the region is a hotspot for the emergence of novel strains as seen with H5N1 and H7N9.
CHALLENGES

The Asia Pacific region remains a hotspot for emerging infectious diseases, but the laboratory systems are not universally capable of detecting emerging, re-emerging or novel pathogens quickly and accurately. The need for such capacity is underlined once again by the recently emerging pathogens H7N9 and MERS-CoV in and outside the Asia Pacific region, respectively.

Countries have made progress in building their public health laboratory systems, as outlined in national workplans, supported and guided by national steering committees and technical working groups. However, it remains a difficult task to assess how well these systems function and where the bottlenecks are.

Surveillance systems that pick up agents causing SARI, such as H7N9 and MERS-CoV, are absent or need significant strengthening in countries in the Region. The laboratory plays a key role in SARI surveillance and needs to be strengthened.

New technologies may prove useful in building public health laboratory systems; however, a challenge is to help countries make the evaluation of when it is the right time to adopt such technology in terms of feasibility and cost.

NEXT STEPS

In 2013–2014, it is envisaged that the capacity of national public health laboratory systems to detect pathogens rapidly, accurately, safely, and as part of a larger regional and international network will continue to improve. To boost the accuracy of diagnosis of emerging infectious diseases, as noted above the regional EQA will be expanded to include pathogens other than dengue.

A tabletop exercise will be developed with SARI as an initial model. The objective of the exercise will be to test communication, coordination, and practical aspects of laboratory testing, such as national and international specimen referral. This will be the first step towards achieving an APSED key milestone related to a more comprehensive functional exercise.

In close collaboration with epidemiologists and clinicians, the requirements for the laboratory component of SARI surveillance, including H7N9 and MERS-CoV, will be determined and a standardized methodology developed for its implementation.

The feasibility of using new technologies for surveillance and response will be determined, and countries will be supported in making an evaluation of the appropriate time frame for them to adopt such new technologies.
OVERVIEW

The very nature of zoonoses – diseases or infections that are transmissible from animals to humans – means that no single sector can manage the risks alone. Therefore, APSED focuses on bringing together the numerous players who must collaborate to prevent, detect and control zoonotic diseases. In 2012–2013, the emergence of H7N9 – an avian flu infecting people for the first time – along with further cases of MERS-CoV and H5N1 have kept this area of work at the forefront.

Collaboration takes the form of sharing data, conducting surveillance and risk assessment, and working together on the response. Other focus areas, such as laboratories and risk communications, also contribute to building vital working relationships.

At the regional and global levels, WHO and partners work with the animal health sector through FAO and OIE. This cooperation is mirrored at the national level, where policies for zoonosis control are ideally supported by close and sustainable collaboration between the animal and human health sectors. In the future, cooperation could expand to include the environmental sector as well.

Under APSED, this coordination is aimed at controlling prioritized zoonotic diseases. Working collectively during outbreaks and on a routine basis will reduce the risk to human health associated with both known and emerging diseases.

REGIONAL OVERVIEW

General coordination mechanisms between human and animal health sectors for zoonotic disease control have been developed in 25 of 26 Member States, as reported through the 2013 IHR monitoring questionnaire. These continue to be strengthened and expanded to build disease- or activity-specific coordination. These systems were used in the responses to outbreaks such as leptospirosis in the Philippines in August 2012, H5N1 in Cambodia in the first half of 2013, and H7N9 in China in April-May 2013.
A main achievement in this focus area in 2012–2013 at country level has been the identification of priority zoonotic diseases in order to better focus work. Twenty-two of 26 Member States have confirmed that they have a list of priority diseases with case definitions (an increase to 84% in 2013, from 69% in 2012). Furthermore, most Member States have started to develop disease-specific coordination and collaboration mechanisms in line with their capacities and the response needed to combat certain zoonotic threats.

Collaboration to combat specific diseases continues in the Lao People’s Democratic Republic in anthrax control, and in Mongolia in rabies control. The lessons learnt from these activities will be shared with other countries in the Region to inform their planning and actions.

**ACTIVITIES**

*At the regional level*

The Third Regional Workshop on Collaboration between Human-Animal Health Sectors on Zoonoses Prevention and Control was organized by OIE in collaboration with FAO and WHO. Participants included multidisciplinary groups (human and animal health, environment, wildlife and socioeconomics), regional organizations such as ASEAN, the South Asian Association for Regional Cooperation, and animal and human health officials from 19 countries in the Asia Pacific region. The workshop reviewed progress made on the establishment of a functional coordination mechanism for prevention and control of zoonoses at country and regional levels, and shared good practices in controlling important zoonoses.

*In countries*

In **Cambodia**, the coordination mechanism between animal and health sectors was strengthened by the signing of a memorandum of understanding on zoonosis control cooperation. A working group for rabies control was established.

In the **Lao People’s Democratic Republic**, the multisectoral coordination for controlling zoonotic events was expanded to include avian influenza and anthrax. With the support of WHO, the national rabies committee’s terms of reference were updated to include the development of rabies control strategies. Joint teams of human and animal health experts from national and local levels responded to the anthrax outbreak in April and May, after which the guidance for anthrax outbreak investigations was completed and a community anthrax awareness campaign conducted.

In **Malaysia**, a joint avian influenza simulation exercise was held. A list of priority zoonoses in the country was developed and investigation of zoonoses was jointly conducted by animal and human health sectors. Guidelines for human brucellosis response were published, and surveillance and training on leptospirosis were undertaken.
In **Mongolia**, strategies or guidelines for brucellosis, rabies and anthrax in animals and humans were developed. Under the framework of a risk reduction strategy for rabies, a strategic plan on dog population management was developed and implemented in a number of provinces. An annual intersectoral zoonosis conference was held on rabies prevention and control.

In **Papua New Guinea**, a collaborative research programme is being developed jointly by country’s Institute of Medical Research, WHO, Wildlife Conservation Society, and the New Zealand Institute of Environment Sciences and Research. This project will focus on pathogen discovery in wildlife and diagnosis of undifferentiated febrile illnesses in humans.

In **Viet Nam**, guidelines on surveillance, prevention and control of rabies and Japanese encephalitis were developed. Collaboration and coordination systems between human and animal health sectors were strengthened through training courses attended by both sectors, and the establishment of information sharing and outbreak response mechanisms.

### CHALLENGES

In some Member States, further development of a comprehensive coordination mechanism at local and national levels is required, along with sufficient multisectoral coordination beyond animal and human health sectors, such as environment and wildlife sectors. Vital field data from each sector, which are collected through routine surveillance, are not fully shared among human and animal health sectors. This is unfortunate because the data could contribute to risk reduction activities by creating a clearer picture of where the greatest risks are.

Despite a good foundation, it is important to continue to improve and further expand the coordination and collaboration systems between human and animal health organizations at national and regional levels. This type of cooperation plays an important role in response to outbreaks.

### NEXT STEPS

The Regional Office should continue to encourage the development and expansion of close and sustainable collaboration between the human and animal health sectors at national and regional levels. Collaboration will be encouraged in outbreak response, surveillance, information sharing, and risk reduction action on emerging and re-emerging zoonotic threats.

In order to strengthen cooperation at the regional level, WHO will organize the Fourth Regional Workshop on Multisectoral Collaboration for Zoonoses Prevention and Control, scheduled for November 2013.
Joining forces against avian influenza: H5N1 in Cambodia

Since 2005, 35 people in Cambodia have become ill with avian influenza H5N1 and 28 people have died. Because the disease is passed from animals to humans – in this case, the source is poultry – it is vitally important that the human health sector work closely with their animal health counterparts. Every year when cases of the relatively new disease emerge, teams of health workers and officials head to the affected areas to get a clear understanding of the situation and to publicize prevention information.

WHO’s Dr Chea Nora interviews villagers in Prey Nheat commune in Kampong Speu province’s Kong Pisey district. A 17-month-old girl from this village died in January 2013 from H5N1.
Joining forces against avian influenza: H5N1 in Cambodia (cont.)

During the outbreak in 2013, Cambodian Prime Minister Hun Sen instructed the Ministry of Health and the Ministry of Agriculture, Forestry and Fisheries to work together on the response, along with other relevant ministries and elements of society. It is the first time such instructions have come from the top political echelons.

Dr Ly Sovann of the Communicable Disease Control Department at the Cambodian Ministry of Health said the directive helped shape the response: “We shared information on human cases with the Ministry of Agriculture, Forestry and Fisheries, and conducted response in the community with teams from both the human and animal side.” Despite this progress, Dr Ly concluded that there were still lessons to be learnt: “We are striving hard to improve our joint response.”

In order to improve coordination in the future, a workshop was organized in late June 2013 with technical support from WHO and financial support from the United States Agency for International Development (USAID). The participants, who included representatives from the ministries of health, agriculture and the national veterinary institute, developed an initial action plan. The plan will need to be agreed by all parties, but is a step in the right direction.

The next generation of epidemiologists are already learning more about the links between the human and animal health sectors. Cambodian Applied Veterinary Epidemiology Training (under the Ministry of Agriculture, Forestry and Fisheries) and Applied Epidemiology Training (under the Ministry of Health) are the two main programmes for training future epidemiologists. In the past, medical epidemiologists have joined the training for veterinarian epidemiologists to explain their discipline. Later this year, veterinary epidemiologists will join the medical epidemiology trainees to explain the key concepts in their field. Going forward, it is hoped that cross-pollination between the two programmes will build the capacity of trainees to understand and apply epidemiological principles to surveillance, infection and disease control within animal and human populations.
OVERVIEW

Infection prevention and control (IPC) is an essential element in reducing the risk of transmission of diseases among patients, health-care workers, family members and the community, especially during outbreaks of communicable diseases that cause SARI. APSED focuses particularly on IPC during outbreaks. The components of this area under APSED target health facilities and complement the other focus areas which work at other levels of the public health system.

REGIONAL OVERVIEW

The Western Pacific Region has made progress in the area of IPC. Several important milestones were reached in the previous reporting period, and this progress has been sustained. This includes the establishment of a national oversight structure on IPC, the development of a national IPC policy/strategy, and the establishment of a national IPC resource centre. In 2013, 25 of 26 countries reported having a national infection control policy or operational plan available, and that SOPs, guidelines and protocols for IPC were available to hospitals.

During this reporting period, the focus was on updating or developing new national technical guidelines, conducting training of IPC staff, and strengthening infection control committees, thus enhancing overall capacities in this area. However, it is important that these guidelines be put into practice in health-care facilities, which are the frontline in the response to any outbreak.

<< Proper hand hygiene is an effective way to prevent the spread of infections.>>
This section outlines the wider IPC work done in countries. Within this generic work are components related to the strengthening of IPC during outbreaks. We highlight these broader activities as they contribute to improving IPC capacities during outbreaks as well.

Many Member States in the Western Pacific have developed technical guidelines on IPC.

**Mongolia** reviewed its protocols for hospital-acquired infection surveillance and developed SOPs for the subnational level. The **Lao People’s Democratic Republic** revised and extended its IPC strategy to all levels of health-care facilities. **Papua New Guinea** drafted a national IPC policy. **Malaysia** established infection control committees at state, district and health centre levels.

Member States also focused on strengthening the capacities of health-care workers to implement the IPC guidelines, in particular through training. The Vietnamese Administration of Medical Services conducted training-of-trainers courses on the guidelines for prevention and control of specific and common hospital-acquired infections for staff in national and provincial hospitals. With support from WHO, the Administration of Medical Services developed a national training curriculum for IPC staff. Cambodia conducted training on IPC guidelines for all health-care workers in several hospitals, as did the Philippines. The Lao People’s Democratic Republic held nine basic training courses for health-care workers from each hospital infection control committee. Malaysia conducted a simulation to test the capacities of health-care workers in IPC. The exercise showed good multisectoral involvement and commitment. Mongolia has produced interactive training materials on disinfection and sterilization.

**It is important that infection prevention and control guidelines be put in place in healthcare facilities, which are the frontline in the response to any outbreak.**
**CHALLENGES**

With H7N9 a new threat, and MERS-CoV an ongoing concern – the latter in particular having caused outbreaks in health-care settings – it is a challenge for all health-care workers to understand IPC guidelines and to take appropriate IPC measures as soon as outbreaks occur.

**NEXT STEPS**

Continue strengthening of IPC capacity through dissemination of the IPC guidelines to protect health-care workers and prevent further spread of infections, especially during outbreaks.
OVERVIEW

This past year was marked by a number of public health events that highlighted the importance of communication in responding to health emergencies. The timely and transparent communication regarding H7N9 in China and H5N1 in Cambodia illustrated the central role of information sharing and public communication in the early stages of managing public health emergencies.

APSED defines the three components that make up a risk communications system: health emergency communications (in particular, the rapid dissemination of information and health messages during emergencies), operational communications (information sharing among relevant stakeholders to enable decision-making and a coordinated response) and behaviour change communications (health promotion programmes for prevention and control of public health threats).

The risk communications component of APSED prioritizes development of the systems, procedures and structures to strengthen capacities. It identifies the need to institutionalize risk communications within the ministry of health as an integral component of the health emergency response actions and routine public health functions. Further, the risk communications workplan advocates that a structure, team or mechanism be established to proactively and efficiently coordinate communications during public health emergencies.

REGIONAL OVERVIEW

Overall, the Region is on track in its progress towards establishing the basic risk communications capabilities in-country. Two milestones were envisaged in the risk communications workplan for APSED: the establishment of a public health emergency communication focal point/mechanism and the development of appropriate SOPs.

The main achievement in the Region for 2012–2013 was the establishment of structural arrangements and coordination for health emergency communications to ensure rapid dissemination of information and health messages to target audiences. The main purposes of establishing this system are to build trust, empower populations to adopt protective measures, reduce confusion and develop a shared understanding with the public of the situation. This includes sharing the uncertainty and communicating the risk involved and measures that may be in place to respond.
Most Member States have developed mechanisms for conducting risk communications during a public health emergency, an important milestone under the APSED workplan. Health emergency communications plans have been put in place in nearly all (92%) of the countries in the Western Pacific Region, up from 73% in 2012.

The majority (81%) of the Member States have validated their health emergency communications plans, policies and guidelines through an actual emergency or simulation exercise in the past 12 months, up from 62% in 2012. Policies, SOPs or guidelines on the clearance and release of information during a public health event have been developed in most of the countries (77% in 2013, up from 69% in 2012).

In nearly all countries (96%), regularly updated information has been made accessible to the media. Accessible and relevant information, education and communication materials are tailored to the needs of the population in all countries.

Support for risk communications was provided by WHO to Member States for some of the health emergencies in the region including H7N9 in China, dengue in the Lao People’s Democratic Republic and Solomon Islands, leptospirosis in the Philippines, hand, foot and mouth disease in Viet Nam and H5N1 in Cambodia. This support included providing technical advice on the development of documents on frequently asked questions for public distribution, conducting training and simulation exercises and providing substantive input into communications planning.

**ACTIVITIES**

**At the regional level**

A health emergency communications framework has been developed and tested in a simulation exercise in Cambodia and Fiji and in the training and development of the operational communications mechanism in the Lao People’s Democratic Republic. In addition, training activities were also provided to Cambodia, China, Fiji, the Lao People’s Democratic Republic and Viet Nam.

Technical support was also extended to other regional organizations such as ASEAN and the Asia—Europe Foundation.

**In countries**

In **Cambodia**, a Risk Communication Unit was organized and placed under the Communicable Disease Control Department. The communications team and regional public health directors have received training. SOPs for risk communications and media response, monitoring and analysis have been drafted for discussion and formalization.

**China** conducted risk communications training courses for provincial health workers. The health sector also improved the coordination between risk assessment and risk communications, with a communications officer invited to participate in the risk assessment in most health events.
The Lao People’s Democratic Republic established a communications task force at central and provincial levels as a mechanism for coordination among partners within and outside the government system. Guidelines targeted at schoolteachers for identifying and reporting any health events in schools were developed and disseminated to districts of Vientiane and the provinces of Luang Namtha, Luang Prabang and Bokeo. Information, education and communication materials were developed for notifiable diseases under the Government’s surveillance system.

Malaysia continues to manage the regional ASEAN Risk Communications Resource Centre as its contribution to regional preparedness and response, with the coordination of regional training in risk communications for ASEAN Member States. Nationally, it also strengthened its preparedness and response for public health emergencies at all levels.

In Mongolia, risk communications was integrated into its incident management system. A risk communications strategy was developed for herders as part of the animal and human anthrax control strategy, and activities were undertaken to promote food safety, including production of a television show.

A series of communications training workshops were organized in the Philippines at the provincial and city level. The Government has been proactively communicating public health measures, in particular during outbreaks following natural disasters.

The Pacific islands countries are working to enhance emergency communication skills and to incorporate risk communications components into their outbreak response plans. Operational communications is being enhanced through the planning process and the testing of response systems.

Papua New Guinea, amid logistical challenges for communications, developed information materials as part of its response to health emergencies, such as the outbreak of chikungunya.

Viet Nam’s Ministry of Health has bolstered its risk communications structure by establishing a Committee for Emergency Communications at the ministerial level. A risk communication strategy (2012–2016) for health emergencies based on lessons learnt from hand, foot and mouth disease, H5N1 and the H1N1 pandemic has been developed and endorsed by the ministry. The strategy provides a framework for developing SOPs for risk communications. A pandemic containment exercise with a comprehensive risk communications component was conducted so health staff could practise public speaking, message development and communication planning. (See story on risk communications training in Viet Nam.)

Most Member States have developed mechanisms for conducting risk communications during a public health emergency.
**Practice makes perfect: preparedness in Viet Nam**

Between 2008 and 2011, WHO provided training on risk communications to Ministry of Health staff in Viet Nam. Over time, two key challenges emerged. These were the lack of long-term career development opportunities in communications within the Ministry of Health and a high turnover of personnel each year. As such, the same introductory training courses were repeated with no opportunity to conduct more advanced courses.

To address these concerns, WHO restructured the training it offered: it developed exercises, using H5N1 as a public health example, that were hands-on and targeted at senior managers from the Ministry of Health. These were people who were at more advanced stages in their careers and more likely to remain in their posts. The course also supported participation by staff of the Ministry of Agriculture and Rural Development, providing an opportunity for the animal and human health sectors to develop key messages together while also preparing for a potential future pandemic.

To help build on skills obtained at these and other training events, WHO together with the Ministry of Health organized a PanStop exercise in January 2013 that was based on the outbreak of a fictional respiratory disease in a northern province. About one third of the exercise involved communications, such as providing information through the international and local media and via the Internet.

As a result of the exercise, the Ministry of Health will revise its risk communications strategy to target multiple audiences with specific information suited to their needs. The strategy will aim to embrace the full spectrum of media options including traditional print, radio, television, Internet, local and global social media and blogs.

At the end of March 2013, Viet Nam’s risk communications capacity was put to the test when H7N9 appeared in China and the threat of disease outbreak became very real. The Ministry of Health worked closely with WHO and the Ministry of Agriculture and Rural Development to communicate quickly and consistently to the public about the disease and preventive measures that should be taken.

Joint press statements were issued and Ministry of Health officials made themselves available for interviews. This demonstrated the government’s newfound willingness to coordinate its messages and communications response to allay fear, refute rumours and provide the necessary information to the public.

In a joint media statement in May 2013, Minister of Health, Dr Nguyen Thi Kim Tien and Minister of Agriculture and Rural Development, Dr Cao Duc Phat succinctly explained their collaborative approach: “We’ve learnt from past experience that animal and human health sectors need to collaborate and take early action to prevent the spread of any new disease that threatens the health of people and the animal trade.”
CHALLENGES

Evaluating communications strategies after a health emergency is one of the key challenges for communications due to limited capacities and human resources to conduct such evaluations.

At the national level, Member States face difficulties in establishing and maintaining the functional linkages among relevant sectors and partners that need to be operationalized and applied in a real public health emergency.

Although some mechanisms are already in place, coordinating communication between local and national agencies is also an area for improvement.

One of the critical areas that remains to be improved is more seamless coordination between risk assessment and risk communications, as both components can benefit from the knowledge of the other.

Many countries still find it difficult to maintain communication skills within the ministries of health due to lack of longer-term capacity-building opportunities and investment in communications officers.

Although some countries have mainstreamed risk communications in other areas of work such as in food safety, further work and testing needs to be conducted to ensure clarity of roles among different sectors.

NEXT STEPS

The threat of H7N9 and MERS-CoV prompted many countries to revisit their pandemic preparedness plans, including their health emergency communications strategies. Technical support is needed to move forward in ensuring plans continue to be updated and tested, and that they are applicable immediately in case of an emergency.

At the regional level, lessons learnt and best practices on health emergency communications need to be shared as the basis for reviewing communications strategies. Building on the rich experience of Member States, a regional workshop of the communication focal points needs to be organized to facilitate this exchange. This would also encourage Member States to consciously evaluate communications interventions in every public health event to generate lessons for the future and improve communications systems.

Some joint activities need to be organized to ensure that the results of risk assessments are used for risk communications. This could also enhance coordination between different sectors and disciplines.

Meanwhile, WHO needs to continue to support Member States in developing and testing national health emergency communications frameworks and protocols, either for real events or through simulation exercises. As such, simulation activities are scheduled in the remainder of the year.
Throughout this report, we have emphasized the need for linkages between functions – such as how laboratories support surveillance – but no focal area captures the importance of such linkages as this one does. The scope of this focus area is broad, going beyond managing emerging infectious diseases. It was included in APSED (2010) in order to support countries in developing a national system that brings together all the functions and key players to manage public health emergencies.

The suggested approach to public health emergency planning emphasizes the continuous planning cycle and a step-wise approach (building on existing foundations), beginning with a generic public health emergency plan that can be refined to address specific threats where necessary. APSED envisions that these plans be underpinned by a clear command and control system, which is itself supported by a functional emergency operations centre within the ministry of health. The EOC provides a common operational platform to link the right people with the right expertise to the right roles to ensure an effective coordinated response. It contributes to timely information collection and risk assessments that are vital to inform rapid decision-making during a response. Experience has shown that the most successful EOCs are those established within the ministry of health, under its direction, and used for daily activities in quiet times in order to maintain their functionality and readiness for emergencies.

Beyond public health emergency planning supported by an EOC, there remain certain specific functions that also need to be developed, in particular to fully implement IHR. These include strengthening IHR event communication, building core capacities at designated points of entry such as international seaports and airports, improving logistics to support response, and the preparedness of health care facilities. These are described below:

The National IHR Focal Points (NFPs) in the Western Pacific Region are responsible for communicating vital information back and forth to the WHO IHR Contact Point located in the WHO Regional Office for the Western Pacific. It is envisaged that the NFPs would establish operational links with national stakeholders and be part of national structures for public health preparedness and response, and have the authority to support regional mechanisms and networks to facilitate rapid sharing of information and participate in joint risk assessments with WHO.

<< Observing a demonstration at the port in Ningbo, China.
**Points of entry (POE)** play a unique role in preventing the international spread of diseases and responding to events in a manner commensurate with the public health risks related to international travel and transport. Ensuring the IHR core capacities at designated POE requires coordinated multi-agency preparation for emergency response and implementation of routine public health measures including inspection services and vector control.

**Response logistics** go beyond the narrow function of “buying light bulbs”. In emergencies, logisticians support many areas of the response, including the deployment of people to the field, setting up communications, ensuring security, and arranging the collection and shipment of clinical specimens as quickly as possible.

The areas of **clinical management** and **health care facility preparedness and response** focus on the capacity of health-care facilities and their staff to identify and treat infectious diseases during an emerging disease outbreak, while following established protocols and guidelines.

The key milestones in the APSED workplan for this reporting period include WHO’s commitment to run an exercise annually to test and maintain the function of the NFPs (which has occurred) and to support the establishment of an EOC within the ministry of health in each country (work which is actively ongoing).

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**REGIONAL OVERVIEW**

The focus in 2012–2013 was to improve public health emergency planning in countries by taking the steps to establish a functional EOC in ministries of health. A number of countries including the Lao People’s Democratic Republic, Mongolia and Viet Nam are moving along this path, fully aware of the long process involved.

Most countries in the Region (85% of those reporting, an increase from 73% in 2012) have in place SOPs for their NFPs and regularly use the IHR Event Information Site (EIS). For the period 1 July 2012 to 31 May 2013, WHO’s IHR Contact Point at the Regional Office received over 1200 IHR e-mail messages from NFPs. These public health events included the outbreaks of hand, foot and mouth disease in Cambodia, norovirus in Fiji, plague in China, chikungunya in Papua New Guinea, H5N1 in Cambodia and H7N9 in China.

Progress has been made by Cambodia, the Lao People’s Democratic Republic, Mongolia and Papua New Guinea in developing clinical management guidelines on priority diseases. WHO’s Regional Office for the Western Pacific developed and disseminated the new Dengue Clinical Management Facilitator’s Training Manual in May 2013.

Some Member States have conducted simulation exercises to test the emergency preparedness plans at health-care facilities.
More than just walls: EOCs in the Lao People’s Democratic Republic and Mongolia

Emergency operations centres bring together dedicated professionals to focus their attention on public health problems, propose solutions and design countermeasures to safeguard health. Far more than mere walls and equipment, EOCs are more like ships and airplanes: they would not sail or fly without talented crews.

The process of developing an EOC – the decisions that are made along the way and the links formed between the people that work on the project – may be as important as the room that is finally designed.

In 2012–2013, the Lao People’s Democratic Republic and Mongolia took concrete steps towards establishing EOCs within their ministries of health. They developed architectural plans, ordered equipment and selected physical locations. But knowing that the process of establishing an EOC could easily take close to a year, both countries decided that their EOC could already be operational if they focused not on the limited facilities but instead on strong functions, i.e. the people.

In their view, the human resources, the approach, the framework and the SOPs would be the foundation of their EOCs. A dedicated multidisciplinary team could rapidly work in the alternative EOC on a daily basis, the staff could be learning-by-doing, and they had time to adjust the system to meet the needs of the Ministry of Health. For example, the Lao EOC, though not yet fully launched, was used to coordinate the response to the dengue outbreak in 2013.

It was also an opportunity to embed response logistics early in the process, a discipline that is sometimes overlooked. In emergencies, logistics specialists support a range of functions, including staff deployment, distribution of materials, and coordination with other stakeholders. During the pre-EOC phase, the countries could already begin to see where logistics specialists would be needed, and train people in this skillset – they have already requested support from WHO for this function.

This practical and multidisciplinary approach, at times involving other ministries and WHO Country Offices, will likely provide a model for other countries also in the process of establishing EOCs and their health logistics response system.

Lao health officials responded to the dengue outbreak in 2013 using some of the principles, roles and responsibilities that will later be transferred to the EOC.
ACTIVITIES

Related to public health emergency planning

As establishing and enhancing a functional EOC within ministries of health was a top priority of APSED implementation over the past year, a practical guide to EOCs and response logistics was developed based on informal expert consultations and is being used in priority countries.

The EOC guide emphasizes the following:

- the importance of both the facilities and the functions of an EOC, especially the introduction of an incident management system;
- the use of the EOC not only for emergency response but also in day-to-day operations including disease outbreak or public health event monitoring, risk assessment, emergency preparedness planning, exercises and training;
- the critical role of the EOC in connecting the different APSED focus areas, people and agencies; and
- response logistics as an integrated part of EOC development.

Progress on establishing EOCs in ministries of health is being made despite major challenges, particularly the lack of technical expertise at country and regional level.

In Mongolia, an EOC is being established in the Ministry of Health, supported by senior health officials and WHO. WHO’s guide to establishing an EOC has been translated into Mongolian, and a national protocol defining roles and responsibilities has been drafted and is being put into practice.

In Viet Nam, a firm commitment has been made and actions are under way to establish a functional EOC in the Ministry of Health with technical support from US CDC and WHO. The functions of the EOC will be tested through simulation exercises later in 2013.

Related to NFPs

The fourth annual IHR exercise (named “IHR Exercise Crystal”) was held in December 2012 to test the functionality of the NFP system, ensure the currency of contact information and make certain that protocols were clearly understood. Twenty-one of the 27 NFPs (78%) in the Region participated, an increase from the 18 who participated in 2011. The 2012 exercise revealed that 77% of the NFP contact details were fully up-to-date or accessible. Over 85% of participants used Annex 2 of the IHR (2005) to determine whether the exercise scenario required IHR notification, with 57% completing the notification process/EIS posting within the exercise period. Recommendations were made by the participating NFPs on the future design of the exercise and routine follow-up measures to improve it.

Efforts have been made to formalize the roles and functions of the NFPs in countries. For example, in Papua New Guinea, the revision of the Papua New Guinea Public Health Act to support NFP functions began in late 2012 and is expected to be completed by mid-2013.
From the classroom to the docks: POE training

WHO has developed a number of technical guidelines, handbooks and training manuals related to points of entry to help countries implement the IHR requirements related to their seaports and airports. But to those putting them into practice, it can all seem rather abstract. To help ground the guidance in reality, WHO organized a regional workshop at the port of Ningbo, China, with site visits and hands-on training. The workshop was attended by 19 participants from 10 countries in the Western Pacific Region, with observers from China’s inspection and quarantine service.

Mr John Gardner was one of the training facilitators. “When you have people from different countries working together, they develop confidence that the others know what they’re doing. It breaks down formal barriers. You know you can just pick up the phone and talk to them. You understand them and have confidence.”

For many participants, the port visit was a highlight. “To me the most useful part of the training was the port visit to see first-hand what China had put in place as required under IHR,” said Dr Sibauk Vivaldo Bieb, a participant from Papua New Guinea. “However, the sheer size and meticulousness of the infrastructure in Ningbo created in my mind a sense of ‘Wow, how can my country do the same given the resource and other constraints it faces?’” he said.

Dr Bieb will be reporting back on what he learnt at the training. Then he will be seeking the necessary support to bring together all relevant stakeholders to begin the process of planning for core capacity-building at their designated POE, a process likely being reproduced in the home countries of many of the other participants.
In **Viet Nam**, the establishment of the Viet Nam Multisectoral IHR (2005) Implementation Committee was initiated by the NFP. In **Mongolia**, the NFP developed procedures for establishing a multidisciplinary risk assessment team and trained team members.

The emergence of H7N9 in **China** demonstrated the importance and value of its NFPs in facilitating rapid reporting, joint risk assessments and rapid sharing of information through the EIS.

**Related to POE**

The Regional Workshop to Strengthen Core Capacities at Designated Points of Entry under the International Health Regulations (2005) was held in Ningbo, China, in April 2013. The workshop provided an opportunity for participants from Asian countries to improve their knowledge and skills through hands-on training and site visits to the designated seaport and airport. Member States agreed to establish effective long-term mechanisms to develop and sustain the core capacity requirements at designated POE through active collaboration in the Region.

National workshops to improve the IHR core capacities at POE were held in **Samoa** (November 2012) and **Kiribati** (June 2013). A public health emergency contingency plan was developed at each designated POE in **Malaysia**, the **Philippines** and **Viet Nam**. The developed plans were further tested in Malaysia, Mongolia and the Philippines.

**Related to clinical management and health-care facilities preparedness**

Clinical management and health-care facilities preparedness have been essential components of public health emergency preparedness and response. The WHO guide to dengue clinical management was developed and used in supporting dengue outbreak response in **Solomon Islands** and the **Lao People’s Democratic Republic** in 2013. In the **Philippines**, the guide was adopted with the issuance of a national policy and subsequent training-of-trainers in all 17 regions of the country. In addition, leptospirosis clinical management was developed and is being used by both government and private practitioners. In **Viet Nam**, a national workshop was held on the epidemiology, treatment and control of hand, foot and mouth disease.

**CHALLENGES**

This focus area will play an increasingly important role in linking other technical areas in coming years. Given the multiagency nature of public health emergency planning – and the lack of experts in EOC development – significant challenges remain in achieving the milestones under the APSED workplan, including changing the culture and standard ways of working in emergency planning and response.

The organizational dynamics within each ministry of health are different, requiring EOCs and emergency planning to be tailored to specific needs. The importance of response logistics is not yet fully understood, and this function is not always integrated into the emergency planning or EOC functions.

Some countries reported that the NFPs are yet to be empowered to achieve timely and effective IHR communications in all public health events. Despite the lack of authority, NFPs have been increasingly responsible for facilitating IHR implementation, providing annual progress reviews using the IHR monitoring questionnaire, and disseminating and ensuring compliance with the IHR requirements and dealing with extensions.
Maintaining the NFP role and ensuring access to EIS have been difficult for some resource-limited Pacific island countries, where appropriately trained personnel and reliable communication infrastructure cannot be taken for granted.

POE have been perceived as one of the weaker areas in capacity development by a number of countries, with the IHR requirements as yet unclear to them. In some countries, functional arrangements are yet to be established between relevant POE stakeholders (operators of designated ports, airports, ground crossings, ships, aircraft, and ground transport), health authorities, national surveillance or response systems, and the NFP.

**NEXT STEPS**

- Establish and enhance EOCs in ministries of health in the Region through encouraging use of the practical guide. Ensure that response logistics are integral to public health emergency planning and the EOC.

- Develop and regularly update the SOPs for multisectoral IHR communication for improved preparedness and response to all public health events, ensuring usage of the existing emergency preparedness and response platforms and links to respective focal points and regional emergency networks.

- Continue high-level advocacy and the development of appropriate authorities to facilitate NFP coordination functions in organizing national-level planning and review meetings, completing annual IHR monitoring questionnaires, and providing secretarial support for the review and application of criteria for seeking an extension of the IHR compliance deadline in 2014.

- Finalize the designation of POE and development of public health emergency contingency plans through the organization of in-country POE workshops tailored to the local context and based on the assessment outcomes while ensuring the engagement of stakeholders from all relevant sectors (public health authorities, national surveillance and response systems, and NFPs).

- Institutionalize and embed POE activities within the national workplands. Ensure that relevant POE stakeholders are engaged in the overarching IHR/APSED planning and review process. Organize regular regional forums to review and share countries’ experience and lessons learnt in establishing and strengthening core capacities at designated POE, and to develop a sustainable mechanism of collaboration among countries through the existing WHO mechanisms.

- Organize a regional IHR stakeholder meeting in the Pacific in early 2014 to review the progress made since 2012 and to address issues unique to resource-limited island countries and areas.

- Support clinical management guidance development and training to strengthen clinical management capacities on priority diseases, including SARIs, hand, foot, and mouth disease, and dengue fever. Use clinical networks for clinical training and outbreak response to strengthen regional clinical capacity.
OVERVIEW

Under IHR, WHO has the mandate to strengthen regional and global systems and capacity for preparedness, alert and response to public health events. Under APSED, the key components are recognized as regional surveillance and risk assessment, a regional information-sharing system and regional preparedness and response.

In reality, this has meant WHO developing an active but flexible regional system – able to provide timely and relevant information and services for effective monitoring and alerts, produce risk assessment tools, and support rapid response through global and regional networking. To reach this goal, three activities have been prioritized: 1) developing a regional platform to support Member States with outbreak alert and response; 2) linking with similar WHO initiatives that will enhance regional support to Member States; and 3) disseminating information through new technologies and channels.

REGIONAL OVERVIEW

The focus in 2012–2013 has been twofold: firstly, to complete the upgrading of a state-of-the-art regional EOC; and secondly, to build on the accomplishments of the previous year in regional preparedness, alert and response. Various regional information-sharing mechanisms continue to be developed such as links to rapid communications through the WPSAR journal, and guidelines such as the hands-on dengue clinical management guide.

The EOC in WHO’s Regional Office for the Western Pacific was upgraded to improve its ability to act as the “central nervous system” or technical information hub for regional preparedness, alert and response. The improved infrastructure incorporates new technologies for better information management. A major event, the H7N9 outbreak in China, occurred less than a month after the EOC was inaugurated. It has also since been used for the coordination of information around MERS-CoV in the Middle East and dengue in the Lao People’s Democratic Republic.

The second annual regional report on dengue was published, based on the reported IBS data from Member States and incorporating the newly developed capabilities from the regional dengue and hand, foot and mouth disease databases. Additional information, such as laboratory testing methods and serotype data, has been incorporated in line with the ongoing laboratory capacity-building work in the Region. These reports demonstrate the high burden of dengue disease in the Region (as observed so far in 2013 in Solomon Islands and the Lao People’s Democratic Republic) and the need for maintaining vigilance, surveillance and response against this regional priority disease.

<< WHO’s Emergency Operations Centre in Manila, Philippines, was used during the H7N9 outbreak.
Risk assessment guidance, through upgrading, piloting and institutionalizing of practical risk assessment tools for rapid application in acute public health events, has been ongoing, and training was held for surveillance and FETP workers in Japan in late 2012. The risk assessment tool and ERF developed by WHO’s Regional Office for the Western Pacific is used not only to assess the risk of an event but also to link the assessment to response activities. While separate from WHO’s internal Emergency Response Framework (ERF) grading scheme, the risk assessment tool and ERF have been used in combination to assist public health decision-makers with specific response decisions. For instance, the Region’s risk assessment tool was used in the H5N1 outbreak in Cambodia and the H7N9 outbreak in China. The newly developed ERF has also streamlined WHO mobilization and response at the three levels of the organization, with the Regional Office playing a key role in response.

**ACTIVITIES**

In order to support regional preparedness, alert and response, regional surveillance remains at the core. This key activity is conducted continuously by WHO’s regional surveillance team, bringing together EBS, IBS, risk assessment and the FET fellowship programme. Participants receive surveillance training focusing on EBS and rapid risk assessment through a two-month fellowship at WHO’s Regional Office. With the newly upgraded EOC, the functionality of regional preparedness, alert and response has been enhanced.

EBS, as a routine, core regional activity, is ongoing for rapid detection, verification, assessment and response to emerging infectious diseases at the regional level. The system enabled the rapid detection and response to the H5N1 outbreak in Cambodia and the outbreaks of dengue in Solomon Islands and H7N9 in China.

A flexible, user-friendly database for events was established in 2011, allowing for rapid access to current and historic event information, including public and official as well as confidential and non-official data. In line with the new EOC, the EBS database is being incorporated into WHO’s more comprehensive online event management system.

The surveillance team conducts monitoring, event screening, verification and assessment activities in the EOC on a daily basis, maximizing the use of the facilities and bringing people together. Upon request, the database has been shared through the regional FET fellowship programme with Member States as a template that could be further adapted to fit their needs.

Regional IBS is continuing through biweekly updates on influenza, dengue, and hand, foot and mouth disease in the Region. The high level of dengue activity in the Lao People’s Democratic Republic, New Caledonia, Singapore and Solomon Islands in 2013 was reported through this mechanism to keep Member States informed. In October 2012, a new regional database supplied with weekly or monthly data on dengue and hand, foot and mouth disease by Member States was developed, allowing for automated calculation of cumulative numbers and moving averages to improve assessments. The utility of these data is indicated by numerous references to this information by stakeholders such as CIDRAP, PacNet, travel health web sites and national government surveillance reports.
Regional preparedness, alert and response is facilitated through resources specific to the Region. Physical preparedness is supported by regional stockpiles of Tamiflu for a potential influenza pandemic, rapid diagnostic test kits for dengue and personal protective equipment for outbreak response. As a result of timely procurement procedures, these have contributed to the rapid response (even if ultimately not used) to recent events in Cambodia, Solomon Islands and the Lao People's Democratic Republic.

In addition, human resources continue to gain strength through partnerships and networks within the Region. Experts in the Region, registered through the GOARN network, stand ready for deployment to assist in outbreak situations, as was the case in the Solomon Islands' dengue outbreak.

Beyond sharing information on the surveillance and response to public health events in the Western Pacific Region, the WPSAR journal contributes to capacity-building in the Region through pre-submission guidance and editing of articles and by offering scientific writing workshops. During the H7N9 event, WPSAR published three relevant articles within 7-16 days of submission. This demonstrates the potential for quick turnaround publications and suggests that WPSAR can be used as a regional centre for timely information sharing during major public health events. One of these papers focused on the unique age and sex distribution of H7N9 cases, with questions and priorities for public health workers. These questions were followed up by others (e.g. Cowling et al., Lancet 2013; Skowronski et al., Eurosurveillance 2013). WPSAR has been accepted into the widely used biomedical database PubMed/MEDLINE, which will allow for the searching of all published articles on this popular forum.

**CHALLENGES**

Now that the Regional Office’s EOC has been upgraded, many of the focus areas and associated activities are being linked through the centre for improved information management, surveillance, documentation and response. However, as with any new system, there is a considerable learning curve and challenges with implementation and practice.

**NEXT STEPS**

As the “central nervous system”, the newly upgraded EOC will continue to incorporate new functions, such as the EBS database, into an online event management system. Lessons learnt from the Regional Office’s experience is expected to help guide Member States in the creation and upgrading of their EOCs.

WHO will continue working with partners such as the Government of Japan and the Asia—Europe Foundation to strengthen and maintain the regional stockpile of antiviral drugs in Singapore and associated activities related to pandemic influenza rapid containment.

Reports on regional EBS and IBS will be produced.

The Regional Office will continue to refine and streamline the risk assessment tools, with training sessions as necessary, to continue to assist and guide Member States as part of the ongoing approach to better link surveillance and response.

As regional preparedness, alert and response is closely linked to activities of the other focus areas, WHO’s Regional Office for the Western Pacific will continue to coordinate across the distinct but related sectors.
The goal of monitoring and evaluation (M&E) is to strengthen the national capacities required to effectively plan and monitor APSED implementation. It does so by introducing a simple and practical country-owned M&E system in Member States – the national planning and review process. This process aims at establishing results-based management principles and enhancing monitoring capacities in the Western Pacific Region, both in Member States and in WHO offices.

Monitoring – defined as the routine collection and analysis of data for the purpose of assessing progress and learning – can only be an effective tool in this context when it is firmly integrated in the management and implementation of APSED within ministries of health.

Moving towards results-focused implementation requires a country-owned and -led planning and monitoring function. The key elements of this function are a dedicated national M&E team and a national planning and review process. This process creates the collaborative space to develop and regularly update the national workplan for APSED (be it a dedicated plan or one that is embedded in a larger emerging infectious disease plan), to regularly assess progress using monitoring indicators, and to prepare and validate the annual national APSED progress report.

At the regional level, the annual APSED Technical Advisory Group (TAG) meeting performs an important monitoring role. It reviews national progress and produces recommendations on priority activities for implementation in countries. This feedback mechanism provides an effective flow of information between countries and the regional level, which allows for continuous learning and improvement.

In the Western Pacific Region, the effective response to recent public health events has clearly demonstrated progress towards increased health security. In general, Member States in the Region are becoming increasingly results-focused. The key APSED milestones of this focus area – the national workplan and the planning and review process in particular – have been partially achieved. While the majority of Member States have aligned their emerging infectious disease workplans with APSED, challenges remain in the establishment of national planning and review meetings.

A move towards a stronger results-based focus can be seen in the increased use of monitoring tools. As noted, both in 2012 and 2013, 26 Member States — out of 27 — filled out the annual IHR monitoring questionnaire. This marks strong progress since 2011, when 19 Member States reported on their IHR status. In addition, for the first time, Member States have made use of the APSED performance indicators to assess the status of their readiness to respond effectively to any public health event.

Residents wade through floodwaters on the outskirts of Manila in August 2012. People who come in contact with contaminated water are at a higher risk of acquiring leptospirosis.
The use of national indicators in workplans is also increasing. For example, in Mongolia, the Ministry of Health has defined output indicators at the subnational level to help local health departments monitor their performance. This move from activity monitoring to results-based monitoring is an important step in the context of this focus area.

**ACTIVITIES**

In July 2012, WHO organized a TAG meeting in Manila, Philippines, which generated recommendations for APSED implementation by Member States. These recommendations included developing the concept for FET Plus and publishing a practical guide on the establishment of EOCs, which followed up and largely implemented during the reporting period.

WHO continued to advocate and support the national planning and review processes in Member States to increase stakeholder coordination. Regular meetings to assess capacity-building in relation to IHR and APSED implementation are held in the Pacific and several Asian countries. Member States such as Cambodia, the Lao People’s Democratic Republic, Mongolia, and Viet Nam reported that these meetings are a useful forum to bring different actors together to discuss APSED and IHR. The Regional Office supported the planning and review meeting in Cambodia through an in-country mission.

To further improve the monitoring of APSED implementation as well as strengthen national capacities in M&E, a technical officer for M&E was recruited by the Regional Office. This addresses the recommendation of the 2012 TAG meeting for WHO to clarify its role in M&E.

Ten Pacific island countries, with support from WHO’s Division of Pacific Technical Support, have conducted reviews of their national public health emergency core capacity achievements and identified priority gaps. As a result, national workplans were revised to include monitoring indicators that better track changes.

Some Member States have formally appointed national APSED M&E teams. This is an important step in institutionalizing the M&E function and ensures sustainability of the planning and review process.

Of the 27 State Parties to the IHR (2005) in the Western Pacific Region, 21 had submitted their IHR monitoring questionnaire before the TAG meeting in July 2013. Some Member States have made use of evaluations for the purpose of learning and improving their activities. Cambodia conducted an external evaluation of its applied epidemiology training, and Mongolia conducted post-outbreak reviews to learn from its response. The Philippines documented the response to the leptospirosis outbreak of August 2012.

**CHALLENGES**

Despite good progress made by many Member States, the establishment of the national planning and review process as the country-led mechanism remains a challenge. Meetings are not regularly held and the M&E function is not consistently allocated to relevant ministry staff.

There remains limited awareness of and capacity for results-based management including regular data collection for the calculation of performance indicators. Annual progress reports are not substantiated by the use of targets and indicators.
Common monitoring needs have not been consistently addressed in a biregional approach. The effectiveness of APSED implementation would benefit from stronger application of a common M&E framework in the Asia Pacific region.

NEXT STEPS

Member States are encouraged to strengthen and maintain the national planning and review process.

Member States are further encouraged to use the planning and review process to review their IHR core capacities in early 2014 as a way of determining the status of their achievements. This is particularly important if they are to meet the deadline for requesting an additional extension to the implementation of the IHR core capacities.

Member States and WHO will continue advocating for increased results-based monitoring through the use of IHR and APSED performance indicators at the national and regional levels.

WHO will pursue stronger biregional collaboration in the monitoring of APSED implementation, including the use of a common guide to establish an integrated planning and review process.

Taking stock of leptospirosis: lessons learnt in the Philippines

In August 2012, the Philippines was drenched by a south-west monsoon, exacerbated by tropical storm Haikui, which formed in the Philippine Sea and passed north-east of Taiwan, China. These left flooding and landslides in their wake, affecting over 2 million people. As communities began to recover, many were hit with an upsurge in cases of leptospirosis. Symptoms of the disease range from fever and headache in milder cases, to haemorrhaging in the intestines or lungs in severe cases. About 5%-15% of untreated cases progress to a potentially fatal stage. People catch it through direct contact with the urine of infected animals or by contact with a urine-contaminated environment, such as surface water, soil or plants.

In 2012, cases rose to 7000, an increase of 60% over the previous year when there had been about 4000. The majority of cases were in boys or men, ranging in age from 4 to 86.

Health authorities responded on a variety of fronts: enhancing surveillance, ensuring that hospitals and clinics knew how to identify and treat the disease, and communicating with the public about prevention. After the peak of the crisis, they decided to take stock of what had gone well and what could be improved, from detection and monitoring to treatment and reporting. With WHO support, they held a meeting in December 2012 to share experiences while they were still fresh. A final report will summarize the findings and make comprehensive recommendations that will inform the response the next time the country faces this type of emergency.

Health-care workers discussing a document during a medical mission after a typhoon in Mindanao, Philippines.
Gender is an issue that cuts across APSED focus areas because the consideration of how diseases might affect men and women differently – from biology to risky exposures to health-care-accessing behaviours – is fundamental to understanding and responding to any particular disease.

Gender-sensitivity can improve surveillance and response because more skilfully interpreted data can lead to better-informed public health responses to prevent or mitigate the impact of a disease. If, for example, there is a large gender difference in the reported number of cases, such information needs to be interpreted carefully. Is it because of biological differences? Is it because of exposure differences that put one gender at greater risk of infection? Is it because of differences in access to health care? Approaching these questions will help respond to the situation by identifying key gaps in the knowledge and assist with next steps in response, such as targeted, gender-specific risk communications.

In practice, this means not just taking numbers at face value, but thinking about where they come from. Men and women have different physiologies, social expectations, behaviours, and health-care seeking norms. These can all contribute to how a particular disease manifests itself in the reported surveillance data.

One of the assumptions about conducting gender-based analysis or assessment is that is expensive or labour-intensive. But pilot projects conducted by WHO in the Western Pacific Region and in countries such as the Lao People’s Democratic Republic and Mongolia show that the necessary data are often already on hand. It requires little incremental expense for analysis to be done, especially considering how useful the outcome can be. There is no need for a new system because existing surveillance data can be – and should be – used for informing the public health response. Instead, it is a matter of raising awareness and putting the collected information into action. WHO will continue to work with Member States to help them make the most of their data in order to reach better outcomes for their populations.

Men and women have different physiologies, social expectations, behaviours, and healthcare seeking norms.

<< Age and sex data, which are often readily available, can offer insight to better understand an emerging disease, as they did with H7N9 in China.
Since the publication of the monograph, *Taking sex and gender into account in emerging infectious disease programmes: An analytical framework* (2011), WHO's Regional Office for the Western Pacific and WHO Country Offices, working together with Member States, have made considerable strides in integrating gender. Taking the monograph as its framework, the Regional Office developed a simplified, practical model focusing on three main questions when analysing/assessing surveillance data (Figure 1). This simple tool has facilitated realization of the APSED goal of mainstreaming gender in emerging infectious disease programmes. The findings based on the tool have been disseminated through the WPSAR journal, with key messages emphasizing the need to be cautious with surveillance data interpretation and that gender-based approaches can offer important opportunities to improve response.

**Figure 1:** Factors to consider when interpreting observed sex distributions in reported surveillance

As part of the training for the FET fellowship programme, the participants are introduced to gender-based approaches and are actively involved in sharing observations and findings from their countries. Case examples include taking gender into account in analysing rabies, tick borne diseases, leptospirosis, and most recently, H7N9 and MERS-CoV. Traditional epidemiological concepts such as incidence, relative risk, stratification, effect modification and various biases that can enter into reported surveillance data complement the discussion. Gender-based approaches are thus introduced in the context of classical epidemiological concepts, but with a fresh approach that is more mindful of data interpretation and how these data can be used to improve response (e.g. formulating gender-specific interventions when relevant). In addition to event-based surveillance, FET fellows have been instrumental in bringing gender-based approaches back to their home countries.
Mainstreaming sex and gender into emerging infectious disease programmes is a sensitizing and contextual approach that needs to be applied on a routine basis. Public health surveillance practitioners are continuously analysing, assessing and interpreting surveillance data, and when such information is used to ascertain gender/sex differentials in disease risk without caution, the complete picture behind the observed distribution may be missed or misinterpreted. WHO’s Regional Office for the Western Pacific has thus been actively working with Country Offices and Member States in various capacities to ensure gender-sensitive approaches are part of routine work.

Specifically, based on the three-question tool that was developed by the Regional Office, public health surveillance staff are encouraged to routinely and carefully assesses surveillance data, whether for acute events involving hitherto unknown emerging diseases or for relatively well-known diseases under dedicated surveillance with years of accumulated data. Age and sex information can provide important insights and may point to unusual or unexpected patterns that can then help direct the next steps of a response. The H7N9 event illustrated this need. A collaborative effort between the Regional Office, the Country Office in China and a Chinese FET fellow highlighted possible scenarios, gaps, and potential next steps at the early phase of the outbreak (see Figure 2 and Case Study on the following page).

Routinely collected IBS data have also been analysed and interpreted with a gender-based approach. The Regional Office, working jointly with the Country Office in the Lao People’s Democratic Republic and Lao national partners, demonstrated the importance of assessing health-care use by age and gender to help interpret the reported surveillance data and identify high-risk groups. Following a key action point on the need to disseminate important gender findings, both of these case studies have been shared widely through the WPSAR web site.
Case Study - older men and H7N9

Although diseases are complex, some of the most important information can be gleaned by looking at basic information. As such, age and sex data – often readily available in a timely manner – can offer important insight to better understand an emerging disease.

During the H7N9 outbreak in China in 2013, scientists quickly realized that a preponderance of older men were being affected. What was not clear was the reason why.

In the rapidly emerging situation, the age and sex distribution of the cases was assessed to better inform risk assessments and potential next steps.

The Emergency Management Team in WHO’s Regional Office considered three main possibilities: a particular gender-associated practice was putting elderly men at high risk (Were they more likely to go to the market?); the clinical course was particular to elderly men, perhaps making them especially susceptible post-exposure/infection (Was there a biological factor?); and health-care-seeking behaviour was particular to elderly men, leading to biased observations from the reported data (Were older men more likely to go to the clinic to seek help?).

While investigations continue as this report is being written, these questions, along with the age- and sex-stratified data, were rapidly communicated through the WPSAR journal, encouraging public health practitioners to consider these questions for assessments and response; and not just for H7N9 but also for future emerging infectious disease threats. Although preliminary assessment deemed biased reporting unlikely, the degree to which the observed distribution is due to exposure patterns or susceptibility to disease remains a work in progress. Following age and sex distributions closely over time may lead to detection of important changes in the epidemiology of this virus and, with better understanding, targeted interventions (e.g. gender-specific risk communications) for high-risk populations may be implemented.

In addition, Member States are also working on their own to help mainstream gender-based approaches. Following the recommendation from the Regional Office for age- and sex-disaggregated surveillance data, Member States such as Viet Nam and Papua New Guinea continue to practise and implement such reporting, advocating this at workshops, trainings, presentations, and surveillance review meetings. Such stratification of data is in line with traditional epidemiological teaching and approaches, and gender acts as an excellent entry point. In Cambodia, where there is a highly skewed distribution of H5N1 cases (i.e. the majority of confirmed cases are young girls), all suspected cases are also being reported with age and gender data.

**CHALLENGES**

While age and sex data are usually readily available from surveillance data, acting as potentially important proxies for gender-specific behaviours/conditions and an entry point for response, such data still often do not receive the necessary attention.

Understandably, while age and sex stratification and other simple analyses and assessments do not require implementing a new system, surveillance workers are often burdened by a high workload and lack of resources. Thus, incorporating such assessments into FET programmes has been suggested as good practice, as initiated at the Regional Office and in several Member States such as Papua New Guinea, where gender-based approaches are used to teach epidemiological concepts, as well as to summarize routine data for periodic surveillance reports.

Some Member States may need assistance with the non-traditional approach of incorporating gender-sensitive approaches into surveillance work, particularly in understanding gender differentials in access to health-care or health-seeking behaviour. Joint Regional Office-Country Office pilot studies in the Lao People’s Democratic Republic and Mongolia have shown that such incorporation is feasible, and important lessons learnt can be shared widely through the WPSAR journal. WHO and partners will continue to support Member States in this area.

**NEXT STEPS**

Although gender is a challenging and evolving area, a gender perspective continues to be incorporated into the work of emerging infectious disease programmes. The data are often readily and quickly available and can be incorporated into FET and as part of on-the-job surveillance activities, as well as to emphasize the importance of using the collected data in response to events. Whether it is for long-term monitoring of IBS data, such as vectorborne dengue or zoonotic leptospirosis, or for acute events such as the H7N9 outbreak, using gender as an entry point can offer important clues and insight in formulating next steps. Gender, indeed, serves as an important reminder for those in public health practice to interpret surveillance data thoughtfully and to gain an understanding of the context of reported numbers. Public health responses based on such careful interpretation benefit from enhanced efficiency and effectiveness.

WHO will thus continue to promote a gender perspective in surveillance and response activities. Gender is truly a cross-cutting area, bringing together the regional FET fellowship programme, zoonoses and other emerging infectious diseases, and the WPSAR journal to share important lessons learnt throughout the Region and beyond.
Health threats such as emerging infectious diseases will continue to be a challenge in the Western Pacific Region – as was brought into sharp focus this year by the H7N9 and MERS-CoV outbreaks. However the year also demonstrated that older, more familiar diseases such as dengue can have a severe impact on health systems. It is increasingly clear why countries must be able to detect, assess, notify and respond to public health threats – the very capacities they have committed to building under IHR.

Yet few countries have been able to do so swiftly. In 2012, 14 out of 27 countries in the Western Pacific Region requested a two-year extension to their deadline for implementation of IHR core capacities. Some of them continue to struggle to meet their goals, while others have flagged that sustaining capacities will also be a challenge.

WHO is committed to supporting countries in moving towards these goals, by providing guidance in the form of strategies such as APSED, technical advice, and advocacy to garner political and financial support – and importantly, by bringing partners to the table to join in this work.

Yet it is the countries themselves, in particular those which have successfully responded to threats, that show the path forward. These are countries that have made major investments in their health systems, having experienced first-hand the impact of poor preparedness. They know that investments must be made in peacetime, not just in crises. They know that these investments are costly, but worth it.

And there were further lessons this year.

No country, no matter how well prepared, can face these threats alone. The very nature of these threats has changed with the possibility of moving from one continent to another by a simple plane journey.

Another lesson was revealed from interconnectedness. A vast network of experts tapped into their collective knowledge and technology to unravel the mysteries of H7N9 and MERS-CoV. They rushed to share what they learned. A threat in one place became a challenge for all. Vulnerability may be universal but so is, increasingly, the willingness to share the search for a solution.

Although the direction has been clearly demonstrated, we are not yet there. Linkages and coordination among technical areas and sectors need to be strengthened. A surveillance system is only as good as the laboratories, which in turn rely on individuals performing to the highest standards along the whole chain. Human health cannot exist without animal health. Risk assessments are impotent if not properly communicated. At the global level, our work gains significance when administrative boundaries are ignored in favour of sharing lessons learnt and good practices.

As countries move to implement the IHR core requirements, with guidance from APSED and other strategies, the path forward is increasingly clear. What remains is to ensure that their will to continue is supported by the means to advance along this path.
ACRONYMS

APSED  Asia Pacific Strategy for Emerging Diseases
ASEAN  Association of Southeast Asian Nations
ASEF  Asia—Europe Foundation
China CDC  Chinese Center Center for Disease Control and Prevention
DSE  Division of Health Security and Emergencies
EBS  event-based surveillance
EID  emerging infectious disease
EIS  event information site
EOC  emergency operations centre
EQA  external quality assurance
FAO  Food and Agriculture Organization of the United Nations
FET  field epidemiology training
FETP  Field Epidemiology Training Programme
GOARN  Global Outbreak Alert and Response Network
H5N1  avian influenza A(H5N1)
H7N9  avian influenza A(H7N9)
IATA International Air Transport Association
IBS  indicator-based surveillance
IHR  International Health Regulations (2005)
ILI  influenza-like illness
IMS  incident management system
IPC  infection prevention and control
LIMS  laboratory information management system
M&E  monitoring and evaluation
MERS-CoV  Middle East respiratory syndrome coronavirus
NFP  National IHR Focal Point
NIC  National Influenza Centre
OIE  World Organisation for Animal Health
PHEP  public health emergency preparedness and response plan
PPHSN  Pacific Public Health Surveillance Network
POE  points of entry
RRT  rapid response team
SARI  severe acute respiratory infection
SARS  severe acute respiratory syndrome
SOP  standard operating procedure
SPC  Secretariat of the Pacific Community
TAG  technical advisory group
US CDC  United States Centers for Disease Control and Prevention
WHO  World Health Organization
WPSAR  Western Pacific Surveillance and Response journal
With the coming into force of the International Health Regulations (2005) on 15 June 2007, all IHR States Parties were required to assess the ability of their national structures and resources to meet minimum national core capacities for surveillance and response as specified in the Regulations and to develop a plan of action to ensure that these capacities would be present and functioning throughout their territories by 2012. WHO was mandated to provide appropriate tools, guidance and support to State Parties to achieve these goals. In accordance with Article 54 of the IHR and a related World Health Assembly resolution, States Parties and WHO are required to report annually to the World Health Assembly on the implementation of the Regulations. For this purpose, a monitoring framework was developed on the basis of technical expert views drawn globally from WHO Member States, technical institutions, WHO partners, and from within WHO.

Throughout this report, percentage values relate to the 26 countries that responded to the 2013 survey, not to all 27 countries in the Region. Analysis is based on self-reported data submitted by States Parties in the IHR Monitoring Questionnaire 2013. Specific country contexts and other sources of information, if available, may also need to be considered in identifying priorities and needs as well as planning for future activities.

### National capacity monitoring under the IHR (2005)

Capacity scores are defined as the proportion of attributes present expressed as a percentage. Scores shown here are averages for each capacity within the Western Pacific Region based on the scores of all responding countries within the Region (26/27 States Parties in 2012, and 26/27 States Parties as of 1 August 2013).

#### Average IHR core capacity scores based on responses from 26 countries in the Western Pacific Region, 2012 and 2013

<table>
<thead>
<tr>
<th>Capacity</th>
<th>2012 (%)</th>
<th>2013 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Legislation</td>
<td>72</td>
<td>80</td>
</tr>
<tr>
<td>2. Coordination</td>
<td>75</td>
<td>83</td>
</tr>
<tr>
<td>3. Surveillance</td>
<td>83</td>
<td>85</td>
</tr>
<tr>
<td>4. Response</td>
<td>85</td>
<td>88</td>
</tr>
<tr>
<td>5. Preparedness</td>
<td>70</td>
<td>78</td>
</tr>
<tr>
<td>6. Risk Communications</td>
<td>74</td>
<td>88</td>
</tr>
<tr>
<td>7. Human Resources</td>
<td>58</td>
<td>72</td>
</tr>
<tr>
<td>8. Laboratory</td>
<td>72</td>
<td>80</td>
</tr>
<tr>
<td>9. Points of Entry</td>
<td>62</td>
<td>68</td>
</tr>
<tr>
<td>10. Zoonotic</td>
<td>71</td>
<td>80</td>
</tr>
<tr>
<td>11. Food Safety</td>
<td>70</td>
<td>79</td>
</tr>
<tr>
<td>12. Chemical</td>
<td>48</td>
<td>57</td>
</tr>
<tr>
<td>13. Radiological</td>
<td>45</td>
<td>49</td>
</tr>
</tbody>
</table>
Average IHR core capacity scores by extension status, 2013

Progress made since 2012 in average IHR core capacity scores in 14 extension countries
## Status Report on Implementation of IHR Core Capacities

**Western Pacific Region**

Information as of 1 August 2013*

### Country

(n=27)

<table>
<thead>
<tr>
<th>Country</th>
<th>IHR extension to 2012 deadline</th>
<th>Submission of IHR monitoring questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Requested and granted extension (n=14, 52%)</td>
<td>2010 (n=21, 77%)</td>
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<tr>
<td>Australia</td>
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<tr>
<td>Vanuatu</td>
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<td>✓</td>
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<tr>
<td>Viet Nam</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>14</td>
<td>13</td>
</tr>
</tbody>
</table>

* Data will be updated as official confirmation is received from countries.

**In 2013, WHO’s global deadline for submission of the completed questionnaire from countries was 1 August 2013, while the deadline for the Western Pacific Region was 15 June 2013.**
ANNEX 2
PROGRESS ON TAG RECOMMENDATIONS FROM 2012

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Progress</th>
</tr>
</thead>
</table>
| 1. Member States that have sought extensions should make every effort to implement their national workplans through increased allocation of national resources and maximizing the use of external technical and financial resources. | - The 14 Member States that requested extensions to achieve IHR core capacities have continued implementing APSED activities through their national workplans.  
- These Member States have registered a percentage increase on each IHR core capacity. The average core capacity score increased from 53% to 66%.  
- While WHO does not have data on the allocation of national resources, priority countries have received financial and technical resources for APSED activities, both from bilateral partners and through WHO. |
| 2. Countries that have not requested an extension should continue their efforts to sustain and/or strengthen IHR core capacities and provide support to those countries that most need external assistance. | - The 13 Member States that did not request an extension have sustained their IHR core capacities. There were no significant changes within focus areas, and the average regional score increased slightly from 86% to 88%.  
- Several Member States, such as Malaysia, the Philippines and Singapore, continue implementing priority activities under APSED.  
- Other Member States, such as Australia, Japan, and New Zealand provide financial and technical support to priority countries to implement APSED activities. |
3 Prioritization of national action is essential. The priority technical areas for further capacity strengthening in 2011–2015 include: monitoring and evaluation; event- and indicator-based surveillance; risk assessment; public health laboratory capacity; national public health emergency preparedness; and health emergency communications. Efforts should be made to strengthen operational links and intersectoral collaboration among technical programmes and ministries in IHR implementation.

As described in the progress report, these were the priority areas for this reporting period and they will remain relevant over coming years:

- **Monitoring and evaluation**
  Several priority countries, including Cambodia, the Lao People's Democratic Republic, Malaysia, Mongolia and Viet Nam, have established a national planning and review process which is the key milestone in the monitoring and evaluation focus area. Member States in the Region continue reporting their capacity achievements through the IHR monitoring questionnaire.

- **Event- and indicator-based surveillance**
  EBS and IBS continue to function to detect threats such as H5N1, dengue, hand, foot and mouth disease, as well as novel diseases such as H7N9. Member States have continued to enhance their capacities, for instance implementing web-based IBS systems and putting designated EBS units in place.

- **Risk assessment**
  Priority countries strengthened their risk assessment capacity through training or the development and application of national guidelines. However, risk assessment is still considered a novel concept and is generally applied in an ad hoc fashion rather than systematically.

- **Public health laboratory capacity**
  Member States have implemented and participated in several laboratory capacity-building activities. Participation of national reference laboratories in EQA schemes is part of the IHR core capacity for laboratories. Currently, 25 of the 26 countries report that their national laboratories are successfully participating in an EQA scheme. Strengthened laboratory capacities have helped in identifying and testing for hand, foot and mouth disease, post-flooding leptospirosis in the Philippines, and in provision of rapid diagnostic kits and assistance with referral of specimens to advanced laboratories for serotyping during a dengue outbreak in Solomon Islands.
• **National public health emergency preparedness**
  As part of public health emergency planning, some Member States – the Lao People’s Democratic Republic, Mongolia and Viet Nam – have started the process of establishing emergency operation centres within their ministries of health. EOCs provide an operational platform to effectively link various focus areas and their functions, including risk assessment, and are therefore of central importance.

• **Health emergency communications**
  Ministries of health in many Member States have worked towards mainstreaming risk communications into their routine operations and have enhanced their capacities through training, SOPs and dedicated communications units. Nearly all Member States have developed mechanisms for conducting risk communications during a public health emergency.

• **Intersectoral collaboration**
  In all Member States, general coordination mechanisms between human and animal health sectors for zoonotic diseases control have been developed. These systems were used in the response to outbreaks of diseases such as leptospirosis in the Philippines, H5N1 in Cambodia, and H7N9 in China.

4 WHO, donors and partners should continue to provide technical and financial assistance to support implementation of national and regional workplans, as well as technical assistance to enhance monitoring efforts and promote stakeholder coordination. A comprehensive evaluation of APSED should be conducted that includes and involves countries in the Region after completion of APSED (2010).

• WHO has provided extensive in-country support to establish national planning and review meetings in priority countries which promote coordination among national APSED implementers.

• Several countries – including Cambodia, the Lao People’s Democratic Republic, Mongolia and Viet Nam – are using this mechanism to review their progress towards APSED and IHR core capacities.

• WHO facilitated the 2013 biregional TAG meeting in Nepal to review regional progress and share lessons learnt.

• A comprehensive evaluation planned towards the end of APSED implementation will guide the design of the next regional strategy.
A multi-faceted advocacy campaign needs to be developed to mobilize long-term sustained funding from existing and new sources for building and maintaining core capacities.

A draft advocacy paper, entitled “Investing in health security in the Western Pacific”, was produced by the Regional Office’s Division of Health Security and Emergencies. The draft advocacy strategy focuses on demonstrating results, and advocating for investment by documenting action and engaging in dialogue.

An advocacy booklet around H7N9 was produced using in-house capacity in WHO’s Western Pacific Regional Office. The publication uses a real-world event to advocate for continued public health preparedness, showcasing the value of past investments in this area.

WHO has continued to engage with partners through the annual Partners Forum at the TAG meeting, regular exchanges and progress updates with existing APSED partners (such as Australia Agency for International Development, US CDC, ASEF and Japan’s special Programme on Technology Transfer).

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

The specific context of the Pacific is taken into consideration in the design and implementation of APSED in the Pacific subregion.

The tailored approach of IHR implementation in the Pacific was endorsed by Regional Committee resolution RC 63.R6 in 2012.

A subregional IHR implementation monitoring meeting, led by NFPs, is held every two years in the Pacific.

The Pacific Syndromic Surveillance System – a simplified surveillance system which includes EBS, IBS and risk assessment – is being used by 20 Pacific island countries and areas and produces weekly data.

WHO established the Division of Pacific Technical Support in Fiji with the aim of providing technical assistance tailored to the needs of Pacific island countries.

The biregional TAG meeting held in July 2013 in Kathmandu, Nepal had a focus on Asian countries and hence, no representatives from the Pacific except New Zealand participated. A subregional meeting of NFPs is tentatively planned for 2014.
<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Progress</th>
</tr>
</thead>
</table>
| 7 WHO should continue to work closely with FAO and OIE to maintain and enhance coordination between human and animal health for zoonoses prevention and control and facilitate early detection of emerging infectious diseases at the animal–human interface. | • In 2012, the annual regional meeting on zoonoses focused on strengthening coordination mechanisms, and the inclusion of the environment and wildlife sectors under the One Health approach. Regional progress in these areas will be reviewed at the next meeting in Kathmandu.  
• During the recent outbreak of H7N9, WHO’s partnerships with international organizations in the animal health sector, such as FAO and OIE, resulted in increased information sharing to strengthen the response, such as control measures in live bird markets. |
Member States should enhance and sustain their monitoring and evaluation capacity through further establishing and maintaining integrated national and regional planning and review processes, including:

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

Several Member States, including Cambodia, the Lao People's Democratic Republic, Mongolia and Viet Nam, are using this mechanism to review and document their progress on APSED and IHR core capacities. All Member States regularly submit the IHR monitoring questionnaire which assesses the status of core capacity achievement. All priority countries have used the APSED performance indicators which help to highlight regional strengths and weaknesses.

All priority countries provide annual updates on their progress, activities, challenges and future priorities. These updates feed into the annual regional APSED progress report.

Some Member States, most notably Mongolia, have started conducting outbreak response reviews with the aim of documenting their actions and learning lessons. At the TAG meeting 2013, China presented lessons learnt from the response to H7N9, and Viet Nam shared its experience of applying APSED capacities in response to emerging infectious disease (EID) threats.

All Member States participate in the annual TAG meeting to review regional progress, share experiences and discuss priority activities.

WHO should convene the next TAG meeting (or its equivalent) as a biregional event to facilitate biregional progress monitoring, technical advice on priority actions and resource mobilization.

The TAG or APSED meeting took place in Kathmandu in July 2013 and was convened as a biregional meeting.

The bi-regional progress was appraised by Member States, partners and TAG members; a partner forum was organized to present, among other topics, WHO's financial accountability and resource mobilization; and TAG members and temporary advisers provided technical advice on APSED activities.
### Priority activity

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

- WHO provides technical support to national EID programme managers in conducting national APSED planning and review meetings.
- WHO facilitates the annual TAG meeting at the regional level. Since the adoption of APSED (2005), regional TAG meetings have been held every year.
- WHO prepares the annual regional APSED progress report, which is shared at the TAG meeting. The report documents the collective regional progress, challenges and recommendations for the following year.
- WHO recruited a full-time staff member to support regional M&E activities in the context of APSED.

<table>
<thead>
<tr>
<th>Priority activity</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>4  Member States should enhance their surveillance, risk assessment and response systems through:</td>
<td>The development of a standardized approach for IBS remains a challenge. While each country uses its national standards and definitions, all priority countries follow a common approach to IBS. Member States routinely report data on priority diseases to WHO for regional analysis.</td>
</tr>
<tr>
<td>* participation in the development of a standardized approach for IBS in the Region which aims to enhance and harmonize case identification, laboratory confirmation and reporting of priority infectious diseases such as hand, foot and mouth disease, dengue and influenza;*</td>
<td>While all priority countries have established a process for detection, risk assessment and response, risk assessment is still considered a new concept. It is undertaken in an adhoc manner and not systematically.</td>
</tr>
<tr>
<td>* establishment of a systematic and continuing process for detecting and assessing risk and responding to actual or potential acute public health events;*</td>
<td>Based on the recommendations of the Third Workshop on Field Epidemiology Training Programmes in Bali, Indonesia in November 2011, WHO conducted a joint assessment mission to review FET in the Lao People’s Democratic Republic and Mongolia. The outcome of the assessment was FET Plus, which can be described as an approach that aims to maximize the impact of FET/FETP on the public health system.</td>
</tr>
<tr>
<td>* participation in the development of the concept of FET Plus as a mechanism to utilize FET to strengthen capacity within public health systems; and*</td>
<td>Several countries have made progress with public health laboratory policy-making. In Malaysia, a National Steering Committee and a National Technical Advisory Committee for Laboratories have been established. A National Laboratory Committee was established in the Lao People’s Democratic Republic.</td>
</tr>
<tr>
<td>* implementation of an*</td>
<td>The EQA for dengue helps bring together experts</td>
</tr>
</tbody>
</table>

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**ANNEX 2**

**Priority activity**

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

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<tr>
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<th>Progress</th>
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<td>4  Member States should enhance their surveillance, risk assessment and response systems through:</td>
<td>The development of a standardized approach for IBS remains a challenge. While each country uses its national standards and definitions, all priority countries follow a common approach to IBS. Member States routinely report data on priority diseases to WHO for regional analysis.</td>
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<td>* participation in the development of a standardized approach for IBS in the Region which aims to enhance and harmonize case identification, laboratory confirmation and reporting of priority infectious diseases such as hand, foot and mouth disease, dengue and influenza;*</td>
<td>While all priority countries have established a process for detection, risk assessment and response, risk assessment is still considered a new concept. It is undertaken in an adhoc manner and not systematically.</td>
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<td>* establishment of a systematic and continuing process for detecting and assessing risk and responding to actual or potential acute public health events;*</td>
<td>Based on the recommendations of the Third Workshop on Field Epidemiology Training Programmes in Bali, Indonesia in November 2011, WHO conducted a joint assessment mission to review FET in the Lao People’s Democratic Republic and Mongolia. The outcome of the assessment was FET Plus, which can be described as an approach that aims to maximize the impact of FET/FETP on the public health system.</td>
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<td>* participation in the development of the concept of FET Plus as a mechanism to utilize FET to strengthen capacity within public health systems; and*</td>
<td>Several countries have made progress with public health laboratory policy-making. In Malaysia, a National Steering Committee and a National Technical Advisory Committee for Laboratories have been established. A National Laboratory Committee was established in the Lao People’s Democratic Republic.</td>
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<td>* implementation of an*</td>
<td>The EQA for dengue helps bring together experts</td>
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integrated public health laboratory network by establishing national laboratory steering committees (where possible), strengthening quality assurance and biosafety, and establishing an efficient specimen referral system from the subnational to national and international level, as required. Collaboration and linkage with technical partners among the laboratories should be considered to support its development, particularly in resource-poor countries, and using existing systems where available.

• WHO should facilitate development of regional guidance on upgrading IBS and should also develop the concept for FET Plus. WHO should provide technical support to countries in enhancing their national risk assessment capacity, public health laboratory network and FET.

• WHO’s regional guidance on IBS is under development. Technical support to Member States on IBS was provided, for example surveillance training in a number of Pacific island countries and a mission to the Lao People’s Democratic Republic in December 2012.

• As noted above, WHO conducted a joint assessment mission to review FET in the Lao People’s Democratic Republic and Mongolia, resulting in FET Plus.

• A regional risk assessment training was held in Japan and national training in the Philippines, both supported technically by WHO.

• Several regional training workshops on specific laboratory topics were held, in addition to the Second Laboratory Strengthening Meeting for Emerging Infectious Diseases in the Asia Pacific Region in June 2013.

• WHO supported the development of technical regulations and national guidelines regarding biosafety requirements for laboratories as well as guidelines for certification.

• Quality assurance including EQAs for dengue and influenza and training for laboratory quality management were conducted. Training on the shipping of bio-hazardous materials according to International Airline Transportation Agency (IATA) rules was provided.
WHO should continue to enhance information sharing on regional surveillance and response through the WPSAR journal, and preparedness and response through the Global Outbreak Alert and Response Network (GOARN).

- The WPSAR journal continued to act as a mechanism for regional information sharing on the surveillance of and response to public health events in the Western Pacific Region. The four issues published since the last APSED progress report comprised 56 articles (an average of 14 articles per quarterly issue). There were 13 countries and areas represented, as well as several regional-level articles, and the first publication of articles from Cambodia, Hong Kong (China) and the Lao People’s Democratic Republic.

- During the H7N9 event, the WPSAR journal published three perspective articles within 7-16 days of submission, demonstrating that it can be used as a regional hub for timely information sharing during major public health events.

- The WHO Regional Office for the Western Pacific developed a training package for international outbreak response under GOARN. This material was used in a biregional training session held in the South-East Asian Region in 2012.

7 Member States should enhance public health emergency operations capacity through establishing or strengthening their emergency operations centres (EOC), associated with an incident management system (IMS) and supported by a response logistics system, within the Ministry of Health. The EOC should be used to support all public health operations.

- Several Member States – such as Mongolia, Lao People’s Democratic Republic and Viet Nam – have identified the establishment of a functional EOC within their ministries of health as a priority activity and have started the long process of establishing them.

- WHO has supported the process by providing technical advice during in-country missions to the Lao People’s Democratic Republic, Mongolia and Viet Nam.
WHO should work to finalize and facilitate the implementation of a practical guide for establishing an EOC and an associated IMS (with a specific focus on response logistics) in ministries of health. Where required, WHO should also provide in-country technical support to enhance public health emergency response operations; such technical support may include conducting and evaluating public health emergency exercises.

WHO’s Regional Office for the Western Pacific finalized the “Practical Guide: Establishing Emergency Operations Centres and Response Logistics Systems in the Ministries of Health”.

Technical support is being provided to some Member States for the establishment of national EOCs within ministries of health.

The Regional Office for the Western Pacific established its own EOC in 2013.

WHO and NFPs should advocate for and facilitate:

- better use of the EIS for public health purposes; and
- improved preparedness at designated POE.

Member States (their NFPs) have increasingly made use of the EIS. More Member States reported using the EIS in the 2013 IHR monitoring questionnaire than in 2012. Timely posting on the EIS was seen during the recent events of H7N9 and MERS-CoV.

The Regional Workshop to Strengthen Core Capacities at Designated Points of Entry (POE) under the International Health Regulations (2005) was held in Ningbo, China in April 2013. National workshops to improve the IHR core capacities at POE were held in Samoa and Kiribati.

WHO has developed a number of technical guidelines, handbooks and training manuals related to POE to help countries implement the IHR requirements related to their seaports and airports.
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<td>10 Health emergency communications should be viewed as a high priority for establishing a functional risk communications system within the Ministry of Health:</td>
<td>• Most priority Member States have developed mechanisms for conducting risk communications during a public health emergency, and more than half have validated their health emergency communications plans, policies and guidelines through an actual emergency or simulation exercise.</td>
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<td>• Member States should establish or enhance a functional health emergency communications structure or mechanism, coordinated by an appropriate focal point. The focal point should coordinate the development and testing of SOPs and guidelines for health emergency communications and should ensure implementation of the SOPs during public health events.</td>
<td>• Policies, SOPs or guidelines on the clearance and release of information during a public health event have been developed in many countries.</td>
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<td>• WHO should facilitate the development of the health emergency communications framework or practical guide and assist Member States in the development of their operational systems and SOPs and in the conduct of health emergency communications exercises.</td>
<td>• With support from the Regional Office, a health emergency communications framework has been developed in Cambodia and Fiji. This was tested in a simulation exercise in Cambodia and served as the basis for training and the development of an operational communications mechanism in the Lao People’s Democratic Republic.</td>
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<td>11 WHO should consider developing guidance for Member States on best practice criteria for internal self-assessments against the IHR core capacities.</td>
<td>• Since IHR (2005) is a global agreement, WHO Headquarters is best placed to provide consistent guidance.</td>
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<td></td>
<td>• The WHO Regional Office for the Western Pacific provided support to several Asian and selected Pacific island Member States in facilitating multi-stakeholder meetings on the self-assessment IHR monitoring questionnaire.</td>
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The Bi-regional Meeting on the Asia Pacific Strategy for Emerging Diseases was held in Kathmandu, Nepal from 16 to 18 July, 2013. The following are the conclusions and recommendations from the meeting.

Conclusions

1. Substantial progress has been made in the past year to establish capacities at both national and regional levels in Asia Pacific Strategy for Emerging Diseases (APSED) focus areas. However, results of national assessments and International Health Regulations (IHR) core capacity self-monitoring and national APSED progress reports show that a significant amount of work still needs to be undertaken in many countries in order to strengthen preparedness for and response to public health emergencies in the Asia Pacific region. Several countries and areas, such as the Pacific as well as Bhutan, Maldives and Timor-Leste, face unique national and local capacity development challenges due to a combination of factors such as the small size of the population, geographical isolation, limited infrastructure and resources, and low baseline APSED capacity. Similarly, capacity at regional level can be enhanced further, including the identification and strengthening of technical networks and resources.

2. The countries in the region responded effectively to a number of emerging disease threats including dengue, H5N1, and hand, foot and mouth disease. In particular, the response to H7N9 by China demonstrated the importance of political commitment and transparency, as well as of investing in preparedness and response capacities. The recent emergence of both H7N9 and MERS-CoV also serve as important reminders that novel infectious agents continue to appear and present risks to national, regional and global health security. The threat posed by H7N9 and MERS-CoV, in addition to ongoing threats such as H5N1, can also provide a focus for efforts to strengthen capacities for preparedness and response as follows:

- Enhancing both event-based and indicator-based surveillance to detect events of public health significance, including clusters and cases of novel infectious diseases, will continue to be of vital importance.
- Strengthening arrangements for the safe collection, transportation and laboratory diagnosis of clinical specimens will also be crucial, including shipping samples to reference laboratories when appropriate.
- Strong intersectoral collaboration between animal and human health authorities will continue to play a central role in the prevention and control of zoonoses and emerging infectious disease threats.
- The occurrence of proven secondary infections in close contacts and healthcare workers, specifically in relation to MERS-CoV, also serves to remind us of the need to establish systematic Infection Prevention and Control policies and practices at all levels.
- Lastly, concern generated by these events also highlights the need for effective communication of risk messages to target audiences, including policy-makers and the public.
3. Current initiatives in countries to broaden the scope of preparedness by moving beyond influenza pandemic preparedness to cover all emerging infectious diseases have recently demonstrated their usefulness. Similarly, in many countries, the establishment of emergency operations centres has been an important catalyst in the development of plans and operational arrangements to support an effective response to public health events. However, the lack of appropriate WHO guidance in some key areas appears to be one of the barriers to the development of public health emergency preparedness and response plans that take an all-hazards approach.

4. It is evident that some countries may find the achievement of IHR core capacities by the 15 June 2014 deadline to be a significant challenge. Therefore, they may require an additional two-year extension. If so, the requirement to submit an extension request in February 2014, accompanied by an implementation plan, means that the national planning and review process should start early in the fourth quarter of 2013. In addition, countries that have achieved compliance will still be expected to demonstrate that capacities are maintained in a sustainable way using the APSED framework, and are likely to wish to strengthen them further.

5. The need to develop and sustain IHR core capacities presents an opportunity for Member States, WHO and partners to work collectively in 2013 (and beyond) to develop cohesive and feasible APSED/IHR implementation plans. These plans should be accompanied by robust arrangements for result-based monitoring and evaluation and estimation of the financial and technical resources required to implement them. This would also allow the incorporation of arrangements to address social determinants of health, including gender.

6. It is evident that current resource constraints may prove to be a very significant barrier to future APSED/IHR implementation. Continued advocacy and resource mobilization for implementation is critical.
Recommendations for Member States

1. Although substantial progress has been made in the past year, there are a number of challenges that remain. Member States are urged to accelerate the implementation of the updated national workplans.

2. In the context of existing emerging infectious diseases (e.g. H5N1), and the recent emergence of H7N9 and MERS-CoV, and by further utilizing existing capacities developed through APSED, Member States are encouraged to consider the following:

- strengthening capacity for event-based surveillance and indicator-based surveillance, with a focus on the detection of cases and clusters of severe acute respiratory infection and influenza-like illness;
- establishing and strengthening laboratory referral pathways for specialized detection of unknown pathogens;
- further strengthening the functional coordination mechanism between human health, animal health and other sectors;
- supporting establishment of infection prevention and control policies and practices, including arrangements for surge capacity during outbreaks;
- enhancing effective communication of risk messages to target audiences;
- advocating for government investment in strengthening public health emergency preparedness and response capacities.

3. To accelerate the establishment and strengthening of emergency operation centres in ministries of health as a platform to enhance preparedness, response and operational readiness for public health emergencies.

4. To expand the scope of preparedness planning beyond avian and pandemic influenza in a step-wise manner to cover all emerging infectious diseases. Further, to consider moving towards the development of public health emergency preparedness and response plans that take an all-hazards approach. Important components include risk communications and communication with other ministries.

2. To strengthen event surveillance as part of moving towards an all-hazards approach and establish collaboration with other sectors for risk assessment and response to non-infectious public health events (e.g. food, chemical and radiation safety).

3. To encourage use of the national planning and review process to:

- update or strengthen current national APSED/IHR plans;
- develop realistic estimates of required financial and technical resources, and arrangements for robust monitoring and evaluation; and
- include components to address social determinants of health, including gender.
Recommendations for WHO

1. To maintain and strengthen WHO’s human and financial capacity to provide immediate and ongoing support to Member States to strengthen surveillance, laboratories, preparedness, coordination and response for current threats such as avian influenza H7N9, H5N1 and MERS-CoV.

2. To continue to provide support for the establishment and strengthening of emergency operation centres in ministries of health.

3. To take steps to enhance public health preparedness planning through the following:
   - support for the establishment of links with other sectors for risk assessment and response to acute public health events;
   - support for the development of appropriate guidance; and
   - cross-programme collaboration.

4. To work with partners to provide technical support to Member States in the development and strengthening of the national planning and review process for APSED/IHR implementation plans.

5. To support the mobilization of technical and financial resources for APSED/IHR implementation by developing evidence-based advocacy materials and the economic case for investment in health security.

6. To report back to the next meeting(s) of the APSED Technical Advisory Group and related meetings of National IHR Focal Points and emerging infectious disease programme managers on the implementation of the recommendations of this meeting.

7. To produce an annual consolidated report on the status of implementation of previous recommendations for WHO made by the APSED Technical Advisory Group and reviews commissioned by WHO.

8. To identify advanced laboratories in the Region that can serve as reference laboratories to support the detection and characterization of novel agents.

9. To enhance the efficiency of efforts to support Member States through strengthened biregional collaboration.
Asia—Europe Foundation
Asian Development Bank
Asian Disaster Preparedness Center
Association of Southeast Asian Nations
Australian Agency for International Development
Canadian International Development Agency
European Commission
Food and Agriculture Organization of the United Nations
Japan International Cooperation Agency
Japan International Cooperation System
Japanese Red Cross Society
Mekong Basin Disease Surveillance Coordinating Office
Ministry of Foreign Affairs – Official Development Assistance, Japan
National Institute of Infectious Diseases, Japan
National Red Cross and Red Crescent Societies
IAEA International Atomic Energy Agency
International Federation of Red Cross and Red Crescent Societies
Institut Pasteur, Paris, France
Public Health Agency of Canada
Regional Emerging Diseases Intervention Centre
South Asian Association for Regional Cooperation
Secretariat of the Pacific Community
United Nations Children’s Fund
United Nations Environment Programme
United States Agency for International Development
United States Centers for Disease Control and Prevention
World Bank
World Organisation for Animal Health