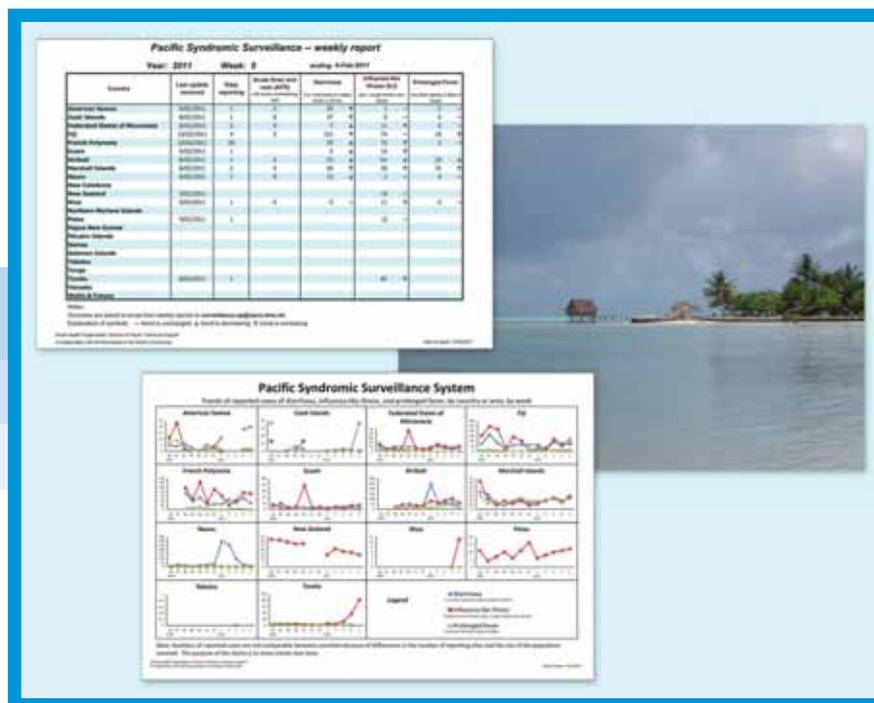


Meeting for Pacific IHR National Focal Points and PPHSN-EpiNet Representatives on Syndromic Surveillance



23-26 March 2010
Auckland, New Zealand

Report

Meeting for Pacific IHR National Focal Points and PPHSN-EpiNet Representatives on
Syndromic Surveillance

Convened by:

World Health Organization
Office of the WHO Representative for the South Pacific

In collaboration with:
Secretariat of the Pacific Community

23-26 March 2010
Auckland, New Zealand

NOTE

The views expressed in this report are those of the participants of the Pacific International Health Regulations (IHR) National Focal Points and the Pacific Public Health Surveillance Network (PPHSN)-EpiNet Representatives on Syndromic Surveillance and do not necessarily reflect the policies of WHO.

This report has been prepared by the WHO Regional Office for the Western Pacific for governments of Member States in the Region and for those who participated in the Meeting for Pacific IHR National Focal Points and PPHSN-EpiNet Representatives on Syndromic Surveillance held on 23-26 March 2010 in Auckland, New Zealand.

SUMMARY

The International Health Regulations (IHR) require that all countries can detect public health events, such as outbreaks, in a timely manner and that they should be able to respond quickly. Many existing national disease surveillance systems are complex, with the result that they do not have sufficient early warning capacity. In addition, they often are based on reporting of specific diseases, requiring diagnostic confirmation by overseas laboratories before a disease is reported. This can lead to long delays, especially in the Pacific. Syndromic surveillance can be much faster and simpler because it is based on reporting of clinical symptoms and does not require laboratory confirmation.

This is the report of a meeting to discuss a simple and sustainable system of syndromic- and event-based surveillance for the Pacific, which was developed jointly and proposed by WHO and the Secretariat of the Pacific Community (SPC) at the request of the Pacific ministers of health.

The participants agreed that all countries and territories in the Pacific will adopt a standardized system comprised of four core syndromic case definitions: acute fever and rash, diarrhoea, influenza-like illness (ILI) and prolonged fever. The numbers of patients who fit one of these case definitions will be reported at least weekly by the main hospitals and clinics to the national health authorities of each country or territory. It also was agreed that national health authorities voluntarily will report case numbers weekly to WHO. WHO will produce Pacific summary reports and will share the information with the SPC.

Additional optional syndromic case definitions may be included by countries, depending on the local situation.

The participants emphasized the importance of regular feedback from the national level to clinicians and public health workers in the form of a surveillance bulletin.

In addition to this routine syndromic reporting, all participants agreed that national health authorities will notify WHO immediately if there is an unexpected rise in reported cases or any other potential event of international concern.

Countries will seek to implement the syndromic surveillance system within 12 months. WHO, the SPC and US Centres for Disease Control and Prevention, Atlanta (US CDC) will collaborate closely in supporting countries with implementation.

1. INTRODUCTION

The International Health Regulations (IHR) (2005) require that all Member States have the capacity to detect and respond to public health events of international concern, in particular infectious disease outbreaks that might spread to other countries. Another requirement of the IHR (2005) is that the international community be informed about such events. WHO has been mandated to assist countries, if necessary, to strengthen their early warning capacity. One way to improve system sustainability and reduce the burden of maintaining a system is through simplification and streamlining.

Currently, data on outbreak-prone diseases are not exchanged routinely among Pacific countries. It would be advantageous for the international exchange of information to have a standard set of conditions for the Pacific Region.

In the Pacific, WHO collaborates with the Secretariat of the Pacific Community (SPC) on strengthening surveillance and outbreak response. The previous meeting for Pacific IHR National Focal Points recommended that WHO and the SPC jointly formulate a proposal for internationally standardized syndromic surveillance in the Pacific. This recommendation was repeated by the 2009 ministers of health meeting in Madang, Papua New Guinea.

1.1 Objectives

- (1) To discuss and finalize proposed guidelines for a simple, sustainable, syndromic and event-based surveillance system for the Pacific.
- (2) To identify mechanisms for the Pacific island countries to collect and report data regularly to WHO.
- (3) To give an update on IHR (2005) and recent outbreaks and matters related to the Pacific Public Health Surveillance Network (PPHSN).

1.2 Opening remarks

Dr Ken Chen, WHO Representative for the South Pacific, welcomed IHR country participants and partners. He stated that the purpose of the meeting was to strengthen surveillance within the Pacific and ensure the ability of Member States and areas to meet the requirements of the new IHR. The Pacific health ministers in Madang, 2009, recommended that WHO and the SPC work together to standardize an early warning system for the Pacific. The recent experience with pandemic influenza A (H1N1) 2009 and other regional outbreaks, including typhoid fever and dengue, makes urgent the mandate to detect outbreaks of public health importance early and respond effectively.

The key is for local health workers to be able to detect unusual cases and clusters of disease early and report them to national public health authorities, which will assess the need to report to WHO. This will allow additional expert resources to be made available as necessary and to alert WHO and neighbouring countries to prepare to respond. Meeting participants were tasked to review the experience of those Pacific island countries that had piloted standardized syndromic surveillance, determine its feasibility for the entire Region and decide on practical issues, including the syndromes of importance.

Dr Seini Kupu, as the representative of the SPC, provided an overview of the challenges in the Pacific to respond effectively to outbreaks: isolation, socio-demographic factors, health system resource constraints and delayed access to laboratory services. All of these factors make syndromic surveillance an essential component of an effective public health response in the Pacific. Lessons from H1N1 should not be forgotten, in particular the need to share information rapidly on common threats. The SPC and WHO would continue to collaborate through a one-team approach to support Pacific island countries. The PPHSN mechanisms would be made available to strengthen IHR National Focal Points. Enhanced surveillance would need to continue to include both human and animal infectious diseases.

Dr Darren Hunt, Deputy Director of Public Health, New Zealand Ministry of Health, welcomed participants to New Zealand. Influenza-like illness (ILI) and H1N1 recently focused all countries' attention on improving their infectious disease surveillance. There was value in learning from other countries' surveillance. The most important principles for successful surveillance were surveillance is for action that benefits the community, roles and responsibility need to be clear, surveillance needs to be as easy as possible, systems need to be monitored and evaluated and feedback to front-line health workers is critical.

1.3 Appointment of chairpersons and rapporteurs

For day one, Dr Siitia Lemusu (American Samoa) was elected chair and Mr Edward Diaz (the Commonwealth of the Northern Mariana Islands) was elected vice chair and rapporteur. For day two, Dr Stephen Homasi (Tuvalu) was elected chair and Ms Lourdes Duguies (Guam) was elected vice chair and rapporteur. For day three, Mr Marcus Samo (the Federated States of Micronesia) was elected chair and Ms Leilani Matalavea (Samoa) was elected vice chair and rapporteur. For day four, Dr Enoch Posanai (Papua New Guinea) was elected chair and Dr Sylvie Laumond-Barny (New Caledonia) was elected vice chair and rapporteur.

2. PROCEEDINGS

2.1 International Health Regulations (IHR)

Dr Jacob Kool, of the WHO Office for the South Pacific, indicated that the major purposes of the meeting were to ensure compliance with IHR requirements (rapid outbreak detection, information-sharing and response to outbreaks) and to act on the Pacific ministers of health (Madang 2009) recommendation for improved early warning systems, using standardized syndromic surveillance. The IHR were adopted by all 193 WHO Member States and became effective in 2007. They are legally binding on all partners and seek to more effectively detect early and notify all public health threats of international concern and build the capacity in each country to respond. Notification to WHO does not require laboratory confirmation before reporting unusual events. WHO has a defined role in supporting Member States to respond to risks and to meet their IHR requirements.

2.2 Pacific Public Health Surveillance Network (PPHSN)

An update of the PPHSN was provided by Dr Justus Benzler from the SPC. Since its inception in 1996, the focus has been on epidemic-prone communicable diseases, including cholera, dengue, influenza, leptospirosis, measles and typhoid fever. Later, other non-outbreak-prone diseases, such as HIV, were added. Regional information-sharing occurs through the portals of the PacNet email list server, the Inform' ACTION journal, and the PPHSN website.

A manual on infection prevention and control in health care facilities recently has been produced with particular relevance to the Pacific island countries.

The active networking services include PacNet for alert and communication, LabNet for laboratory confirmation, EpiNet for investigation and response and PICNet for infection control. The PPHSN Coordinating Body recommends a more systematic approach to Pacific surveillance activities, which includes a standardized and easily sustainable syndromic surveillance system, integration of specimen collection and shipping that is not pathogen-specific and strengthened in-country training in field epidemiology, infection control and entomology.

2.3 Syndromic surveillance

Dr Benzler gave an overview of syndromic surveillance. The principal focus is early detection for the purposes of response. It is complemented by laboratory-based, event-based and classical notifiable disease surveillance. Syndromic surveillance uses clinical data (signs and symptoms) that precede diagnosis and that signal a need for a public health response. For common syndromes, the signal requiring a response is excess frequency, while for rare syndromes a single case (event) merits a response. The role of the astute clinician remains important.

The objectives of syndromic surveillance are early detection and rapid response to public health threats. It provides the opportunity to intervene early to limit the impact of outbreak spread and outbreak control. Some systems are of brief duration, e.g. during mass gatherings, but routine systems need to be simple, using pre-existing data and should be automated if possible. They may be restricted to selected sentinel sites if they are to be sustainable.

2.4 Country experiences with syndromic surveillance

2.4.1 American Samoa

Ms Sharmain Edwards Mageo indicated that syndromic surveillance in American Samoa had encouraged a fruitful partnership between clinicians and public health practitioners. It also decreased dependence on limited laboratory resources before initiating an effective public health response. To allow comparability between countries, it was important to standardize syndrome definitions.

Regular review of emergency department discharge data is the basis of American Samoa's syndromic surveillance, made easy by having a single medical facility and there is regular feedback to onsite clinicians. Coding by clinicians is a particular challenge to providing reliable data and some clinicians still prefer paper-based recording. Clinicians are encouraged to alert the focus point immediately should they detect clinical presentations of concern. The system has proven flexible during responses to public health disasters (e.g. after the 2009 tsunami, when additional injury and mental health syndromes were added), and when unusual events such as jellyfish stings were detected. It is essential to have a prepared process for investigating signals and responding. Particular challenges are limited surveillance personnel and having the hospital use automated systems on data-sharing issues rather than manual processes.

2.4.2 French Polynesia

Dr Henri-Pierre Mallet summarized the experience of syndromic surveillance from French Polynesia where there are 50 primary health care centres, four peripheral hospitals, a central hospital, two private clinics, two private and two public laboratories and 130 general practitioners that are distributed unequally. A network of sentinel physicians, from the public

and private sectors and army, report weekly by fax and email on only three syndromes: acute diarrhoea, ILI and dengue-like syndrome by two age groups. There was an improvement during 2009 in completeness of reporting, with about half of clinicians reporting regularly. But there is limited coverage in the remote islands. Hospital emergency units – the central hospital and two peripheral hospitals -- also provide weekly reports on the three syndromes plus fever requiring isolation.

The French Polynesian sentinel general practice system has proven very useful for early detection of dengue and H1N1 outbreaks, despite incomplete coverage of the entire population, before both hospital and laboratory detection. Formal feedback reports regularly are provided to the sentinel network and a summary is provided to all medical practitioners.

2.4.3 Niue

Mr Manila Nosa presented the Niue experience of syndromic surveillance. The island has a single hospital with three doctors and 15 nurses and no clinics. With WHO onsite assistance, the system was initiated in July 2008 with seven syndromes [diarrhoea, dysentery, ciguatera poisoning, ILI, severe acute respiratory illness (SARI), acute fever and rash and acute flaccid paralysis (AFP)]. There is a clear delineation of responsibilities for different positions within the health system. A standardized line-list, captured in a spreadsheet, has proven useful for facilitating investigations. Training in the use of spreadsheet software (Excel) has been useful.

Turnover of key clinical staff in Niue and their multiple responsibilities are constraints to optimal system functioning and demand regular training to ensure that key fields are completed accurately. It is essential that a system is simple enough that it can be mastered rapidly by new staff. The use of triage nurses to record syndromes may be a useful approach, with less dependence on short-term medical staff. The use of clinic nurses as the key reporters may be highly appropriate on remote islands. General awareness of the syndromes should be assured across all clinical staff.

2.5 Proposed Pacific syndromic surveillance approach

Dr Jacob Kool presented the standardized syndromic surveillance system proposed by WHO and the SPC. Surveillance information that is necessary for disease control must permit rapid response. Traditional national surveillance systems often are cumbersome and complex. Many notifiable conditions require laboratory confirmation, which often means transporting specimens to overseas laboratories, resulting in long delays in reporting.

To improve early warning, it is essential to reduce the data burden by starting with only the main hospitals and a limited number of conditions. Syndromic surveillance accelerates and simplifies reporting. There is a need for standardized case definitions to allow for comparison. Regional examples of syndromic surveillance already exist -- i.e. the WHO hospital-based active surveillance of acute fever and rash and AFP and, since 2009, the WHO H1N1 surveillance, which includes the ILI syndrome.

The proposed syndromic surveillance will be supplemented by “immediate event reporting”, i.e. immediate reporting of any serious or unusual event by health care workers to the national level.

For syndromic surveillance, thresholds can be adapted over time to trigger responses consistent with available resources and nature of risk. Syndromic case definitions were chosen for their ease of collection and disease priority (outbreak-prone, severity, availability of effective public health measures). Four core syndromes are recommended: acute fever and rash,

diarrhoea, ILI and prolonged fever (see recommendation No. 6 at the end of this document for details on the case definitions as finalized and adopted during this meeting). Although there may be double recording of a single case, this is acceptable since the purpose is to provide a signal requiring investigation. Basic reporting through a weekly tally sheet is a good approach. Countries may choose to add additional syndromes (e.g. acute fever with neurological signs; see recommendation No. 6 for optional syndromes) once the basic system is functioning well. There may be some variation of additional syndromes across countries.

An unusual event would have to be reported immediately and should include any unexpected event that is a potential threat to public health, such as animal die-offs and chemical poisoning.

The selected sentinel health care sites should report weekly the numbers of cases of each of the four syndromes to the national public health authority. Sharing of feedback information (a surveillance bulletin) by the national level, at least monthly back to front-line health workers, is critical to keep the system functioning and reporters well motivated.

Once a threshold is exceeded, it is necessary to follow a standard approach to outbreak investigation and notification to those who need to know. Having a standardized regional approach allows detection of multicountry outbreaks, improves information-sharing and allows comparison. Country IHR focal points indicated support for the simplified syndromic approach.

Mr Tony Kolbe identified pertinent issues that impact on syndromic surveillance implementation. Surveillance systems should be integrated with other surveillance and allow expansion as required. Each identified surveillance site should have a nominated responsible local champion. Clinicians need to understand and apply the case definition with forms and tally sheets that must be easy to complete. The system must allow for identifying the cases recorded on the tally sheet to assist in identifying the outbreak source. Existing systems, including electronic systems, suffer from timeliness and complexity challenges. There is likely to be some resistance to change from certain clinicians and so it is important to engage them fully, demonstrate that action is taken on the basis of data collected and provide formal feedback regularly. The role of nurse clinicians was particularly emphasized, both within hospitals but also in peripheral clinics. Strong support was provided by a number of IHR focal points on the potential value of the proposed approach.

2.6 Event-based surveillance (EBS)

Dr Boris Pavlin (WHO South Pacific) described event-based surveillance (EBS) based on formal channels (such as reports from doctors of unusual conditions) or informal channels such as media reports, non-governmental organizations and community rumours. EBS does not replace, but complements, routine surveillance and is required under IHR. It serves to detect rare and high-impact outbreaks, emerging diseases and events affecting people who do not use regular health services. EBS is simple, rapid, works where routine surveillance fails and must be tied to action. Standard guidance is available: the *WHO Guide to Establishing Event-Based Surveillance* and the *WHO South Pacific Outbreak Manual*, which is being drafted. The importance of cultural sensitivity when investigating signals was emphasized by country participants.

2.7 Outbreak response

Dr Pavlin discussed reasons for investigating outbreaks, including stopping a continuing outbreak, finding causes of past outbreaks in order to prevent future outbreaks and training staff to build investigation skills. Early detection supported early investigation and early response to

reduce the number of cases. He reviewed the key steps in outbreak response and emphasized considering requesting assistance from the national or international levels when the local capacity to investigate is limited.

2.8 World Café workshop sessions

2.8.1 Core syndromes

Most countries were pleased with the four syndromes and a few already were using similar definitions. For countries that currently don't have strong surveillance systems, the proposed syndromes would serve as a foundation. For countries that already have well-developed syndromic surveillance systems, it would not replace existing systems but complement them.

Concerns existed where electronic systems were in use, particularly timeliness, and these often were limited to the stand-alone computer in the main hospital. Coding by non-clinicians prior to electronic recording may be a barrier. The prolonged fever case definition may lack specificity in environments where malaria is endemic.

Specific diagnosis would not prevent including it as a particular syndrome, and a single patient could be recorded legitimately against multiple syndromes (e.g. one patient could be a case of diarrhoea and a case of fever and rash). It would be important to know how many sites were reporting each week since this would affect trends.

2.8.2 Mechanisms for Data Collection, Reporting and Sharing

The value of collecting standardized syndromic data from selected sentinel sites for selected syndromes was supported. Individuals and appropriate communication systems would need to be identified in each country, and event-based surveillance should be included in reporting.

Regular weekly reporting to the national level was considered essential, but the mandate for reporting syndromic surveillance to WHO needed clarification. It was clear that events or outbreaks would need to be reported to WHO by the IHR focal point but countries would need to clarify to WHO how much (SPC, US CDC, other countries) they were willing to share their data with other interested parties through mechanisms like PacNet.

2.8.3 Regional response to increasing disease and role of partner agencies

Strengthening of local capacity through country or regional Epi teams was proposed, with regional training strengthened. There was a consensus that recent information-sharing on outbreaks had proven useful. Communication with partner agencies required further clarification.

Partner agencies could assist in regional coordination and providing technical assistance (outbreak response and laboratory/Epi capacity development), but the specific roles for all agencies in these roles should be defined.

2.8.4 How to Mobilize Clinicians

Clinicians (doctors, nurses and other health care workers) had few incentives to report or be involved in surveillance and probably had a limited knowledge of IHR and country requirements. This was a symptom of insufficient integration of the clinical and public health sectors.

Clinician notifiers needed engagement and training by asking clinicians what feedback they wanted, producing interesting bulletins even when there was no outbreak, selecting clinician champions and considering nurses, especially in peripheral sites.

Capacity-building was essential, with a particular focus on syndromic surveillance in training curricula, a need for accredited field epidemiology training in the Pacific, equipping local mentors to support field training, using existing infrastructure such as nurses and medical associations, infection control committees, EpiNet teams and continuing medical education (CME) committees.

Approaches worth trying that were mentioned:

- Providing supportive tools
- Access to diagnostic supplies
- Simpler systems for reporting events
- Including surveillance requirements in position descriptions when recruiting clinicians

2.8.5 Syndromic surveillance implementation

A high level of support for implementing syndromic surveillance was expressed, but country-specific implementation planning was necessary because of varying levels of current surveillance and resources.

A standardized tool to allow appraisal for the ability of current systems to meet the minimum requirements for serving as an early warning system was required.

The Madang meeting recommendation and current H1N1 situation provided a great foundation for participants to brief their ministries of health on return to their countries. Syndromic surveillance should be included in strategic plans with budget lines.

Sentinel site selection depended on current coverage, and expansion should consider geographic representation and risk (ports of entry, migration patterns, historical outbreaks, sanitation).

2.8.6 Flow of reporting

Dr Jacob Kool introduced a description of potential data flows. There was general agreement that there should be weekly reporting of syndromic cases from sentinel sites to national levels and immediate reporting of suspected outbreaks.

There was further agreement that regular feedback was necessary from the national level to the field, with the suggestion that individual countries should decide optimal frequency.

Some countries supported weekly reporting on syndrome tallies from the national level to WHO for the four syndromes and immediately, if necessary. But this was not unanimous although participants appreciated the value of regional sharing of data. WHO was committed to providing reporting countries with a weekly summary report and sharing this data with the SPC and other agencies, if approved by submitting countries.

2.9 Regional outbreak update

Dr Boris Pavlin presented a summary of outbreaks provided by 14 countries for the period 2008-2010 and PPHSN PacNet reports. Thirteen countries had experienced dengue outbreaks, with a particularly high incidence in French Polynesia and the Cook Islands. Five countries had experienced leptospirosis outbreaks, and there had been a large rubella outbreak in New Zealand. Typhoid fever had proven a particular challenge in Fiji (>100/100 000 per annum) and there had been a typhoid outbreak in New Zealand following importation from Samoa. Papua New Guinea had experienced a large cholera outbreak, with more than 50 deaths. Other significant outbreaks included MDR-TB in Chuuk, the Federated States of Micronesia, and Republic of Marshall Islands; hepatitis A in Pohnpei, the Federated States of Micronesia, and a large outbreak of ILI (non-H1N1) in Tokelau.

There was little regional data but there was confirmed transmission across borders. This provided the impetus for improved regional reporting. There was also a need for improved access to reference laboratories to confirm the causative agent during outbreaks because many rapid tests had problems with both sensitivity and specificity. This was to be discussed further at a PPHSN laboratory technical working group meeting later in 2010 and outcomes shared with all countries. Dengue-like syndrome would be a very useful addition to the core group of syndromes.

2.10 Pandemic influenza A H1N1 2009 regional update

Ms Akanisi Dawainavesi (WHO) reported on the arrival, confirmed through laboratory testing, of pandemic influenza A H1N1 2009 in the Pacific, initially in Hawaii and New Zealand in April before spreading to French Polynesia a month later and Samoa, with rapid spread thereafter to almost all Pacific island countries. Only Tokelau, Niue and Pitcairn have had no cases. July and August were the peak months for most Pacific island countries. Seven countries reported 21 deaths, of which only 12 of the people were hospitalized, with a median age at death of 34 years old. Important risk factors were obesity, pre-existing respiratory and cardiac disease and pregnancy.

Countries responded rapidly, there was good collaboration between partner agencies and the Australian Agency for International Development (AusAID), the New Zealand Agency for International Development (NZAID) and US CDC financial support. The weekly summary report proved a valuable means for keeping all countries updated with the situation. As a second wave is awaited, it is important to further enhance support. It is important that specimens submitted meet the ILI case definition. There has been great value in reviewing country pandemic plans.

WHO received a 10% population-based H1N1 influenza vaccine donation, which was being delivered to Pacific island countries. It is important to prepare for a possible second pandemic wave, which may occur earlier than the usual seasonal influenza. The scale of a second wave depends on prior levels of exposure and vaccination coverage. WHO should consider making an urgent representation for the release of remaining stockpiles of monovalent H1N1 vaccine in certain higher-income countries, e.g. Australia, that now have trivalent H1N1 vaccine available.

2.11 Pacific Regional Influenza Pandemic Preparedness Project (PRIPPP)

Ms Jennie Fischer (SPC) indicated that the major platforms in the design of the PRIPPP were stakeholder consultation and building on existing systems and networks, including linking of human and animal health agencies to identify opportunities for strengthening preparedness.

As part of the stakeholder feedback process, a country consultation on Pacific Island countries and territories responses to H1N1, funded through NZAID, was undertaken. Nine countries were involved.

Specific short-term needs based on the recent H1N1 experience included laboratory capacity (the highest-ranked need particularly due to limited local capacity and long turnaround times from reference laboratories), a revision of pandemic plans, business continuity and communication planning and delivery, representation of non-health sectors and practical clinical management guidelines. Longer-term needs included the importance of testing revised plans, improving routine surveillance, continuing infection control training, improved diagnostics and regional communication mechanisms during epidemic and pandemic periods.

2.12 Country presentations on selected outbreaks

2.12.1 Cholera outbreak and response in Papua New Guinea

Mr Enoch Posanai made a presentation on the recent experience of cholera in Papua New Guinea that first was detected in rural villagers in Morobe Province in July 2009. This was confirmed as *Vibrio cholerae* El tor Ogawa and surveillance was conducted using the WHO case definition. The case fatality rate in Morobe Province was 4.1%. It spread to Madang and then to East and West Sepik Provinces, with individual cases diagnosed in the Eastern Highlands and Port Moresby. National coordination followed national approval of the Pandemic Influenza Preparedness and Response Mechanism (PIPRM), which was used to guide the response.

Key lessons learnt from this outbreak were the importance of coordination, standardized syndromic surveillance, adequate laboratory access for confirmation, high levels of community awareness, standardized case management and logistics for ensuring supplies.

2.12.2 Typhoid fever outbreak in Fiji

Mr Dip Chand reported on the Suva outbreak that occurred in an informal settlement. Typhoid is endemic in Fiji, with a high burden of cases, well-recognized hot spots and a strong association with communities living in poverty. The first case was in Jittu Estate in December 2009, with cases in Nawaisomo Village in January 2010; there were a total of seven cases. Sanitary conditions are poor in this area. Multi-pronged control measures included patient detection and management, improved personal and food hygiene practices, protecting water supplies and fly control. Multiple partners, including local media, worked together to roll out control measures. This has put a focus on the importance of addressing housing and water needs, health promotion campaigns, exploring prevention by vaccination, preparing mass public gathering contingency plans and ensuring relevance of the Public Health Act.

2.12.3 Hepatitis A in the Federated States of Micronesia

Ms Melinda Manglay described the Pohnpei State hepatitis A outbreak that began in November 2008. Two historical outbreaks in 1943 and 1973 among only young people under 30 years old support the contention of lifelong immunity. It is likely that hepatitis A was imported from Chuuk. The outbreak resulted in 300 reported cases, a 7% hospitalization rate and one death in Pohnpei. Community water sources were faecally contaminated, including in some schools. The role of kava and social gatherings are unknown.

Interventions by Hepatitis A virus task force included improved sanitation and sewage disposal, safety of water supplies and prevention messages and hand washing facilities,

particularly in schools. Long-term, water purification systems should be installed in all schools without treated water supplies. Information about the quality of the water supply by laboratory testing could be made available to the community. The role of immunization in response to outbreaks or routine childhood immunization was being considered.

2.12.4 Guam H1N1 influenza outbreak

Ms Lourdes Duguies provided an overview of H1N1 activity in Guam during 2009. The first confirmed case, 1 July 2009, was of someone who had returned from travel to Texas, United States of America, and infected household contacts. There is year-round ILI surveillance in Guam. The two public holidays may have facilitated transmission with a marked peak of cases in the following four weeks, with a total of 337 cases and two deaths. The distribution by villages appears patchy. Most cases were of people under 45 years old, while 43% of hospitalized cases were of people 4 years old or younger. The two fatal cases had medical histories of rheumatic heart fever and cerebral palsy.

Guam's Pandemic Task Force implemented a stepwise response, including port of entry screening, health education, isolation, hospital infection control, school monitoring and exclusion, antivirals for high-risk groups and vaccination since December 2009 (>31 000 doses administered). Support was provided by US CDC and WHO and the SPC. Particular challenges include limited staffing and delayed laboratory confirmation, media and confidentiality issues and the demands of the private sector.

2.12.5 Cook Islands dengue fever outbreak

Mr Charles Ingaua said the first case confirmed was in 1976 and there were five deaths in 1991. There was a dengue outbreak beginning in March 2009 that apparently was introduced by a returning resident. The national Health Emergency Team was activated with environmental health and border controls. There were 1200 suspected cases, of which 800 were confirmed in 2009, with most being children and younger adults, and particularly on the western side of Rarotonga, with many manmade breeding sites found during a field investigation. The ill were nursed under nets. *Aedes* control focused on twice-yearly mass cleaning of breeding site containers (a holiday for public sector staff to participate), larviciding, perifocal spraying for adult control with pyrethrum in a 100m radius of houses in which there were cases of dengue and health promotion activities. It was facilitated by a designated IHR focal point, a new erythrocyte sedimentation unit (ESR), Geographic Information Systems (GIS) capacity and the Public Health Act of 2004. There is a need to improve links between public health and the laboratory and the recording of addresses.

2.13 Asia-Pacific Strategy for Emerging Diseases (APSED)

Dr Li Ailan (Western Pacific Regional Office) indicated that APSED was being reviewed and was seeking input from participants. She provided an overview of WHO event management under IHR, stressing that the main purpose of reporting is to begin joint event risk management to inform response. Core capacities should be fully implemented by June 2012 with the possibility of a short-term extension, with reporting by Member States against World Health Assembly 20 indicators (242 questions).

Seventy-one events were reported to the Western Pacific Regional Office between June 2007 and August 2009. These are all captured on a confidential WHO website. APSED has focused on capacity-building in surveillance and response, laboratory, zoonoses, infection control and risk communication. Implementation of effective syndromic surveillance would meet many of the requirements under IHR.

2.14 Beyond APSED consultation

Dr Li then introduced the Beyond APSED consultation process, which would engage the meeting participants in small group discussions on five key topics. She described the timeline of the process towards a revised strategy and how these consultations fit into the APSED planning. Input from Pacific Member States was acquired through a workshop session.

2.15 Additional discussion on the proposed prolonged fever case definition

Dr Kool further explained reasons for including this syndrome. Prolonged fever is the only constant feature of several diseases such as typhoid, leptospirosis, brucellosis, Japanese encephalitis, malaria or other serious infections. Most people do not go to the hospital until after a few days. In areas with malaria, a hospital can still help detect increases, but the threshold may need to be set higher to reflect the local situation.

2.16 Syndromic surveillance scenario group exercise

Dr. Kool introduced the group exercise using the prolonged fever case definition. Participants split into working groups. They gave positive feedback on the group exercise because it helped to clarify many issues with the use of syndromes for outbreak detection and also clarified actions to be taken for an initial outbreak response.

3. CONCLUSIONS

All participants agreed (moved by American Samoa and seconded by Tuvalu) that:

- (1) Syndromic surveillance should be used to strengthen the early warning function of existing disease surveillance systems:
 - (a) to detect suspected outbreaks early;
 - (b) to respond rapidly to limit the impact of outbreaks; and
 - (c) to comply with International Health Regulation (IHR) requirements to build national capacity for early detection and investigation of outbreaks and immediate WHO notification of public health events and outbreaks of potential international importance.
- (2) It is essential to engage clinicians (doctors as well as nurses).
- (3) It is crucial that reports are reviewed in a timely fashion, at least weekly, and response should come in a timely fashion.
- (4) Pacific island countries and territories will, as much as possible and practical, use the same case definitions.
- (5) The system should start with a limited number of reporting sites in each country.

- (6) The core case definitions in Table 1 should be implemented in each Pacific island country and territory.
- (7) Optional syndromes that countries may elect to include in addition are found in Table 2.
- (8) Syndromic surveillance should include:
 - (a) reporting of weekly numbers of syndromic cases from health care sites to the national level;
 - (b) regular feedback from the national level to the field (surveillance bulletin);
 - (c) data from the national level to WHO should be transmitted immediately if there is a rise in cases or if another important public health event is suspected; and
 - (d) regular updates from WHO and the SPC to countries of regional outbreaks and other important public health events. In addition, countries are encouraged to share their surveillance bulletin within PPHSN.
- (9) The participants agreed that there is value in providing a weekly report to WHO of the number of cases of each syndrome by countries and territories. However, it was recognized that some countries will have difficulty complying. All participants should confirm to WHO within two weeks whether they will participate voluntarily in this routine weekly reporting. Where participation is confirmed:
 - (a) countries and territories will report weekly from the national level to WHO (numbers of cases);
 - (b) feedback from WHO will be provided to countries and territories via a weekly summary report;
 - (c) WHO is to immediately share the data with the SPC and other agencies; and
 - (d) regular analysis and reports by WHO and the SPC will be provided to countries and territories.
- (10) Regardless of their participation in the above system, all Pacific island countries and territories should participate in weekly reporting in the case of an outbreak with regional spread, such as an influenza pandemic or a dengue epidemic. When a rise in cases above a threshold is detected:
 - (a) an assessment immediately should be made to confirm and investigate the event;
 - (b) the WHO/SPC draft outbreak guideline can be used;
 - (c) feedback and review of the guideline will be provided to WHO and the SPC; and
 - (d) resources, including WHO, the SPC and US CDC, should be used for assistance.

- (11) All participants should brief their ministers and other senior health management on these syndromic surveillance recommendations on their return from the Pacific IHR focal points meeting.
- (12) WHO should brief health ministers on the Pacific syndromic surveillance recommendations during the World Health Assembly and Regional Committee Meeting this year.
- (13) WHO, the SPC and US CDC should continue to collaborate closely (one team approach) to support countries with implementing these syndromic surveillance recommendations.
- (14) Countries should aim to implement these syndromic surveillance recommendations within 12 months.
- (15) Countries should request support from WHO, the SPC, US CDC and other training institutions and agencies to assist with implementation. This may include assessment of the local situation and in-country workshops.
- (16) Countries should report on the progress of implementation progress and review their experience with the system at the next PPHSN/IHR meeting with an interim review at the PPHSN-CB meeting.
- (17) WHO and the SPC should work with local training institutions to ensure that public health surveillance and syndromic surveillance are included in medical and nursing school curricula for assessment purposes.
- (18) WHO, the SPC and other PPHSN member agencies should collaborate to ensure development of field epidemiology training with in-country mentoring to ensure the countries' ability to meet IHR capacity requirements.
- (19) WHO, the SPC and other PPHSN member agencies should collaborate to strengthen LabNet through the technical working group and regional strategy meeting.
- (20) WHO, the SPC and other PPHSN member agencies should collaborate to strengthen EpiNet teams.

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TABLE 1	CORE SYNDROMIC CASE DEFINITIONS TO BE IMPLEMENTED BY ALL COUNTRIES AND TERRITORIES
TABLE 2	OPTIONAL SYNDROMIC CASE DEFINITIONS

ANNEXES:

ANNEX 1	LIST OF PARTICIPANTS, TEMPORARY ADVISERS, OBSERVERS AND SECRETARIAT
ANNEX 2	MEETING AGENDA

Keywords:

Communicable diseases - epidemiology / Disease notification / International health regulations / Pacific islands

TABLE 1

CORE SYNDROMIC CASE DEFINITIONS TO BE IMPLEMENTED BY ALL COUNTRIES
AND TERRITORIES

The following core case definitions should be implemented in each Pacific island country and territory:

<i>Syndrome</i>	<i>Case definition</i>	<i>Important diseases to consider</i>
1. Acute fever and rash	Sudden onset of fever* with acute non-blistering rash	Measles; dengue; rubella; meningitis; leptospirosis
2. Diarrhoea	3 or more loose or watery stools in 24 hrs	Viral and bacterial gastroenteritis including cholera; food poisoning; ciguatera fish poisoning
3. Influenza-like illness (ILI)	Sudden onset of fever* with cough or sore throat	Influenza; other viral or bacterial respiratory infections
4. Prolonged fever	Any fever* lasting 3 or more days	Typhoid fever; dengue; leptospirosis; malaria; others

* Fever is defined as 38 °C / 100.4 °F or higher. If no thermometer is available, fever or chills reported by the patient is also acceptable.

TABLE 2

OPTIONAL SYNDROMIC CASE DEFINITIONS

Optional syndromes that countries may elect to include in addition to the core case definitions in Table 1:

<i>Syndrome</i>	<i>Case definition</i>	<i>Important diseases to consider</i>
Severe acute respiratory infection (SARI)	ILI with fast breathing * or infiltrate on chest x-ray	Pneumonia
Dengue-like illness	Fever for at least 2 days PLUS at least two of the following: <ul style="list-style-type: none"> - Nausea or vomiting - Muscle or joint pain - Severe headache or pain behind the eyes - Rash - Bleeding 	Dengue
Acute fever and neurological signs	Sudden onset of fever with one or more of: <ul style="list-style-type: none"> - Decreased consciousness - Neck stiffness on examination 	Meningitis; Encephalitis; Severe dehydration

* Definition of fast breathing by age group:

<u>Age</u>	<u>Respiratory rate</u>
• 1-2 months old:	60 or more breaths/minute,
• 2 -12 months:	50 or more breaths/minute
• 1 to 5 years:	40 or more breaths/minute
• 6 years and older (including adults) :	30 or more breaths/minute

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**Meeting for Pacific IHR National Focal Points and PPHSN-EPINET Representatives
on Syndromic Surveillance for the Pacific
Auckland, 23 to 26 March 2010**

Meeting Agenda

DAY 1 – Tuesday 23 March		
8:00 – 8:30	Registration	
8:30 – 9.15	<u>Opening ceremony</u> Opening remarks	Ken Chen, WHO Representative for the South Pacific
	Welcome speech	Seini Kupu, SPC Darren Hunt Deputy Director of Public Health New Zealand Ministry of Health
9:15 – 9:40	Introduction of participants, speakers Election of chair persons and rapporteurs Meeting objectives	Jacob Kool
	International Health Regulations: requirements for event detection, verification, and notification	Jacob Kool
9:40 – 10:00	Pacific Public Health Surveillance Network update	Justus Benzler

DAY 1 – Tuesday 23 March (cont.)		
10:00 – 10:30	Coffee break	
10:30 – 10:50	Overview of syndromic surveillance	Justus Benzler
10:50 – 11:20	Country experience with syndromic surveillance in the Pacific <ul style="list-style-type: none"> 1. American Samoa 2. French Polynesia 3. Niue 	Sharmain Edwards Henri-Pierre Mallet Manila Nosa
11:20 – 12:00	Introduction of WHO/SPC syndromic surveillance system	Jacob Kool
12:00 – 12:30	Discussion	
12:30 – 1:30	Lunch	
1:30 – 2:00	Issues for implementation of standardized syndromic surveillance	Tony Kolbe
2:00 – 2:15	Introduction to poster presentations + competition	Christelle Lepers
2:15 – 2:30	Hanging of posters	
2:30 – 3:30	Tea with poster presentations	
3:30 – 5:00	Quick scenario exercises: outbreak detection and response	Jennie Musto
5:00	Group photo	
6:30 – 8:30	Welcome reception (at the meeting room)	

DAY 2 – Wednesday 24 March

8:30 – 8:45	Summary of the previous day	Chair and vice-chair day 1
8:45 – 9:30	Event-based surveillance	Boris Pavlin
9:30 – 9:45	Outbreak response	Boris Pavlin
9:45 – 10:00	Introduction of World Cafe	Introduced by Christelle Lepers
10:00 – 10:30	Coffee	
10:00 – 12:15	World café Issues to be discussed: <ul style="list-style-type: none">• If and how this can be implemented in each country• Selection of case definitions• Mechanisms of data collection and reporting to WHO, Sharing of data• Role of partner agencies and regional response to increase in diseases• How to mobilize clinicians	
12:30 – 1:30	Lunch	

DAY 2 – Wednesday 24 March – Syndromic surveillance system (cont.)		
1:30 – 2:30	Presentation of World Café findings	Individual rapporteurs
2:30 – 3:00	Tea	
3:00 – 3:30	Draft Pacific outbreak response manual	Jennie Musto
3:30 - 5:30	(if time allows) Case study on syndromic surveillance and outbreak response (group sessions)	Jacob Kool

DAY 3 – Thursday 25 March – IHR, APSED, PPHSN		
8:30 – 8:45	Summary of the previous day	Chair and vice-chair day 2
	<u>Updates on important outbreaks and events in the Pacific</u>	
8:45 – 9:05	Regional update on dengue-, leptospirosis-, and other outbreaks in the Pacific	Boris Pavlin, Justus Benzler, Jennie Musto
9:05 – 9:20	Regional update on the H1N1 Pandemic in the Pacific	Aggie Dawainavesi
9:20 – 9:45	Update on the Pacific Regional Influenza Pandemic Preparedness Project (PRIPPP)	Jennie Fischer
9:45 – 10:00	Questions and answers	
10:00 – 10:30	Coffee	

DAY 3 – Thursday 25 March – IHR, APSED, PPHSN (cont.)

10:30 – 12:00	Country presentations on selected outbreaks <ol style="list-style-type: none">1. PNG: Cholera2. Fiji: Typhoid fever3. FSM-Pohnpei: Hepatitis A4. Guam: H1N15. Cook Islands: Dengue	Representatives from: Papua New Guinea Fiji Federated States of Micronesia Guam Cook Islands
12:00 – 12:30	<u>International Health Regulations and Asia-Pacific Strategy on Emerging Diseases</u> Overview of progress toward IHR/APSED implementation	Ailan Li and Qiu Yi Khut, WHO Regional Office
12:30 – 1:30	Lunch	
1:30 – 2:30	Future of APSED/IHR group consultation	Ailan Li and Qiu Yi Khut
2:30 – 3:00	Tea with collection of poster competition votes	
3:00 – 5:00	Feedback and discussion on APSED/IHR group consultation	Ailan Li and Qiu Yi Khut

DAY 4 – Friday 26 March – Wrap-up

8:30 – 8:45	Summary of the previous day	Chair and vice-chair day 3
8:45 – 10:00	Syndromic surveillance scenario group exercise	Introduced by Jacob Kool
10:00 – 10:30	Coffee during group exercise	
10:30 – 11:00	Continuation of group exercise	
11:00 – 12:00	Conclusions, recommendations; future steps	
12:00 – 1:30	Lunch	
1:30 – 2:30	Decisions, conclusions, recommendations (continued)	
	Results of poster competition	
2:30 – 2:45	Closing remarks	
2:45 – 3:30	Tea	