

Meeting Report

Pacific Meeting on Implementation of the International Health Regulations (2005)



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PACIFIC MEETING ON IMPLEMENTATION OF THE
INTERNATIONAL HEALTH REGULATIONS (2005)

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Denarau, Fiji,

Convened by:

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Office of the WHO Representative for the South Pacific

In collaboration with:
Secretariat of the Pacific Community

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NOTE

The views expressed in this report are those of the participants of the Pacific Meeting on Implementation of the International Health Regulations (2005) 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 Pacific Meeting on Implementation of the International Health Regulations (2005), held on 24 – 26 November 2014, in Denarau, Fiji.

EXECUTIVE SUMMARY

The International Health Regulations (2005) (IHR) is as a legal mechanism and capacity-building framework for Member States to achieve global health security. In the Western Pacific and South East Asian regions the Asia Pacific Strategy for Emerging Diseases (2010) (APSED), guides Member States to build and maintain the core public health capacities to meet their national obligations under IHR (2005).

From 24 to 26 November 2014, delegates from 22 Pacific island countries and areas (PICs) met at Denarau, Fiji for the 2014 Pacific IHR Meeting. The meeting was the third such bi-annual meeting. The meeting serves as a forum for PIC delegates to discuss, monitor and plan future IHR/APSED activities and to engage with world experts in infectious diseases and IHR/APSED to seek technical advice to build capacity for emerging infectious diseases (EID) and other public health emergencies.

The objectives of the meeting were:

- to provide a Pacific update on emerging infectious diseases and other public health emergencies and review the progress of core capacity-building under the IHR (2005);
- to review the Pacific Syndromic Surveillance System (PSSS) to identify strengths and limitations, with a specific focus on identifying and monitoring arboviral outbreaks;
- to recommend common APSED/Pacific Public Health Surveillance Network (PPHSN) priority areas over the next two years to achieve and/or sustain the IHR (2005) core capacity requirements; and
- to enhance Ebola virus disease (EVD) preparedness in the Pacific within the context of IHR (2005) capacity development.

At the 2012 Pacific IHR meeting, delegates identified surveillance, response, and workforce as priority IHR core capacity areas of collective focus from 2012 to 2014. The 2014 meeting concluded that significant progress has been made, but that these areas should remain the focus, together with strengthening of public health capacity at international points of entry, for the next two years.

The conclusions of the meeting were:

- Considering the continued threat posed by emerging diseases and other public health emergencies – as evidenced by EVD, other global emerging threats, and major arboviral outbreaks in the Pacific –
- participants reaffirmed the need to enhance national and regional health security preparedness based on IHR/APSED implementation.
- The WHO-led Pacific Syndromic Surveillance System and other Pacific Public Health Surveillance Network services are fundamental elements of health security in the Pacific and help PICs fulfil their IHR (2005) obligations through APSED implementation.
- Event-based surveillance is an important component of early-warning surveillance and is required to meet IHR (2005) obligations. Event-based surveillance is particularly important for detection of new or uncommon diseases, threats and other rare or unusual public health events.
- Despite progress, workforce limitations continue to be a major hurdle to sustainable IHR core capacity implementation in Pacific islands.

- Considering the current threat from Ebola, preparedness for highly infectious pathogens is an urgent priority for Pacific islands; however, to maximize sustainability and prepare for future emerging threats, Ebola preparedness measures should build on existing health security priorities as defined under the IHR (2005). Urgent activities include: (i) infection prevention and control training and preparedness to ensure protection of health-care workers; (ii) ensuring all PICs have at least one isolation unit with the capacity to manage patients with highly infectious pathogens, including Ebola; and (iii) laboratory staff are trained and systems are in place to rapidly and safely collect, package and ship infectious samples to appropriate national or international facilities for testing.

The delegates recommended:

- 1) As a priority, PICs, with support from WHO, SPC and other partners, will strengthen the following IHR core capacity areas over the next two years: (i) early warning surveillance capacity, (ii) rapid response capacity, (iii) workforce capacity, and (iv) IHR core capacities at international Points of Entry (PoE).
- 2) PICs, WHO, SPC and partners will work collaboratively to strengthen the Pacific Syndromic Surveillance System (PSSS) and other PPHSN services.
- 3) PICs, with support from WHO, SPC and partners, should continue to develop, implement, test and evaluate their public health emergency preparedness and response plans, including for Ebola.
- 4) WHO, SPC and partners should support those PICs that have requested an IHR extension to enhance their IHR core capacities by June 2016.
- 5) WHO, SPC and partners should support PICs to implement formal event-based surveillance as a complement to the indicator-based PSSS.
- 6) PPHSN members and other partners should enhance workforce capacity building models such as the Response and Analysis for Pacific Infectious Disease (RAPID) project, Data for Decision-Making (DDM) course, Strengthening Health Interventions in the Pacific (SHIP) proposal, and Field Epidemiology Training Programme (FETP).
- 7) WHO should explore bulk purchase of personal protective equipment (PPE) for PICs in response to the Ebola threat.
- 8) WHO and SPC should work with PICs to ensure there is in-country capacity to package and transport highly infectious specimens, including Ebola specimens, in-line with IATA requirements. WHO and SPC should also support the logistics of transporting such specimens.
- 9) PICs and partners should participate in the WHO external and internal evaluation of APSED/IHR in 2015.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
ABBREVIATIONS	v
1. INTRODUCTION.....	1
1.1 Opening session	1
1.2 Meeting administration	2
2. PROCEEDINGS	2
2.1 Emerging infectious disease updates	2
2.1.1 Global emerging infectious disease threats.....	2
2.1.2 Pacific emerging and re-emerging disease threats: arboviral activity	3
2.1.3 Pacific emerging disease threats: Zika virus	4
2.1.4 Ebola epidemic in West Africa: threat to the Pacific	5
2.1.5 Discussion	6
2.2 Progress in APSED/IHR core-capacity building.....	6
2.2.1 Global and Western Pacific Regional progress and challenges in IHR implementation.....	6
2.2.2 Progress and challenges in IHR implementation in the Pacific	7
2.2.3 Pacific Public Health Surveillance Network (PPHSN): supporting Pacific islands to meet IHR core capacities	8
2.2.4 Discussion	9
2.3 Early warning surveillance in the Pacific.....	10
2.3.1 Pacific Syndromic Surveillance System update.....	10
2.3.2 Syndromic surveillance for early detection and monitoring of arboviral outbreaks in French Polynesia.....	10
2.3.3 Use of syndromic surveillance during the 2014 Micronesian Games 2014 mass gathering	11
2.3.4 Strengths and weaknesses of the PSSS – results of a recent evaluation.....	12
2.3.5 Discussion	12
2.4 Role of event-based surveillance in detecting Ebola and other rare public health events	13
2.4.1 Technical panel on event-based surveillance.....	13
2.5 EVD scientific session	14
2.5.1 History and epidemiology of the EVD epidemic	14
2.5.2 Unique characteristics of EVD transmission	15
2.5.3 Treatment, vaccines and clinical management of EVD.....	16
2.5.4 Discussion	16

2.6 EVD preparedness: IHR core-capacity developments in the Pacific	17
2.6.1 Ebola preparedness planning in the Pacific	17
2.6.2 Command and coordination (IHR CC 2 & 4: coordination & response)	17
2.6.3 Surveillance, risk assessment, response (IHR CC 3 & 4: surveillance & response).....	18
2.6.4 Public health intervention at international points of entry (IHR CC 9: points of entry)	18
2.6.5 Clinical management, infection prevention and control (IHR CC 4: infection control) ..	19
2.6.6 Risk communication (IHR CC 6: risk communication)	19
2.6.7 Discussion	19
2.7 EVD preparedness: Technical review of PICs' national Ebola preparedness plan	20
2.8 Ebola simulation exercise.....	20
2.8.1 Debrief discussion	20
2.9 Developing field epidemiology capacity in the Pacific	22
2.9.1 The RAPID project – successes, challenges and what lies ahead	22
2.9.2 Update on the SHIP initiative, DDM training and plans for the future	23
2.9.3 A field epidemiology training model for Pacific island countries – reflections from PNG	23
2.10 The future of regional health security: IHR and APSED.....	24
2.10.1 Feedback of 2014 Technical Meeting on APSED	24
2.10.2 The future of APSED: next steps in regional health security.....	26
2.10.3 Discussion	26
3. CONCLUSIONS AND RECOMMENDATIONS.....	27
3.1 Conclusions	27
3.2 Recommendations	27
ANNEX `1	29
ANNEX 2.....	34

Keywords:

<p>Disease outbreaks – epidemiology / Communicable diseases, Emerging / Pacific Islands / Legislation. Health</p>

ABBREVIATIONS

APSED	Asia Pacific Strategy for Emerging Diseases
CHIK	Chikungunya virus
DENV	Dengue virus
DDM	Data for Decision-Making
EBS	event-based surveillance
EID	emerging infectious diseases
EVD	Ebola virus disease
FET(P)	Field Epidemiology Training (Program)
GOARN	Global Outbreak Alert and Response Network
H ₅ N ₁	Hemagglutinin ₅ Neuraminidase ₁
IBS	Indicator-based surveillance
IATA	International Air Transport Association
IHR (2005)	International Health Regulations (2005)
IHRMQ	International Health Regulations Monitoring Questionnaire
IPC	Infection Prevention and Control
MERS	Middle-East respiratory syndrome
PICs	Pacific island countries and areas
PIHOA	Pacific Island Health Officers' Association
PoE	Points of Entry
PPE	Personal protective equipment
PPHSN	Pacific Public Health Surveillance Network
PSSS	Pacific Syndromic Surveillance System
RAPID	Response and Analysis for Pacific Infectious Disease
SAGES	Suite of Automated Global Electronic bio Surveillance
SHIP	Strengthening Health Interventions in the Pacific
SMS	Short Message Servicing (i.e. text messaging)
SPC	Secretariat of the Pacific Community
TAG	Technical Advisory Group
WHO	World Health Organization

1. INTRODUCTION

1.1 Opening session

Dr Eric Rafai welcomed delegates and thanked WHO, on behalf of the government of Fiji, for organizing this important event. He noted the vulnerability of PICs to biological agents and the need to build on gains in IHR core capacity development over the past seven years. He recommended APSED as a framework to help PICs meet IHR and national, EID-related capacity development goals. Increasing interconnectivity of international markets and increasing travel between nations pose new challenges to those working to prevent the spread of disease. All PICs must be prepared to respond to new and emerging diseases. PICs should no longer see themselves as isolated from outbreaks in other parts of the world. PICs should work together to achieve IHR objectives for global as well as Pacific-wide health security.

Dr Takeshi Kasai gave the opening remarks on behalf of WHO. He drew on the example of the Sudden Acute Respiratory Syndrome (SARS) in 2002 and 2003 as evidence of the ease and speed at which a novel disease can spread from one part of the world to another. Interconnectivity should extend to the health-worker level so that potentially devastating outbreaks, even in remote villages, can quickly be identified, reported and responded to in line with the objectives of the IHR (2005). He ask participants to consider how well connected PICs' frontline staff really are. He discussed the role of APSED in supporting countries in the Western Pacific Region in meeting their national and IHR (2005) goals. He noted that efficient national response systems are needed. No country, no matter how wealthy, has sufficient resources to respond to all emergencies that conceivably may emerge. As such, public health alert and response systems should be designed to be flexible and able to quickly adapt and respond to any health threats including EIDs, food safety threats and post-natural disaster responses. PICs face unique and varied challenges and therefore solutions need to be tailored. Structured, long-term and programmatic approaches are needed to address inherent capacity barriers. WHO is committed to continue working with PICs and regional partners to identify and systematically overcome barriers.

Dr Adam Roth gave the opening remarks on behalf of Dr Paula Vivilli and Dr Yvan Souares, who were unable to attend the meeting. He opened by acknowledging the contributions made to Pacific public health by the recently deceased Dr Stephen Homasi of Tuvalu, Dr Malakai Ake of Tonga and Dr Kenneth Tabutoa of Kiribati. He asked the delegates to observe a minute of silence in respect. Dr Roth outlined the history of the Pacific Public Health Surveillance Network (PPHSN), established 18 years ago as a joint initiative of WHO and SPC, and the role the network plays in supporting regional EID surveillance and response capacity development. He described the five service arms of the PPHSN, highlighting the role of PacNet as an online forum for regional information sharing about public health events of potential international health concern. Pacific preparedness for EVD is an opportunity to strengthen the PPHSN. SPC is committed to work with PICs and regional partners to build PIC IHR core capacities and to strengthen regional and global health security.

1.2 Meeting administration

The objectives of the meeting were:

- 1) to provide a Pacific update on emerging infectious diseases and other public health emergencies and review the process of core capacity building under IHR (2005);
- 2) to review the PSSS to identify strengths and limitations, with a specific focus on identifying and monitoring arboviral disease outbreaks;
- 3) to recommend common APSED/Pacific Public Health Surveillance Network (PPHSN) priority areas over the next two years to achieve and/or sustain the IHR (2005) core capacity requirements; and
- 4) to enhance EVD preparedness in the Pacific within the context of IHR capacity development.

Dr Eric Nilles, as responsible officer, recommended Dr Eric Rafai (Fiji), Mr Marcus Samo (Federal States of Micronesia) and Dr Aaron Oritaimae (Solomon Islands) as chairpersons for each day of the meeting. The list of participants is available at Annex 1. The programme is available at Annex 2.

2. PROCEEDINGS

2.1 Emerging infectious disease updates

Chair: Dr Eric Rafai, Fiji Ministry of Health and Medical Services

2.1.1 Global emerging infectious disease threats

Dr Ailan Li noted that global health threats typically emerge quickly and manifest in unexpected ways; national EID preparedness therefore needs to be all encompassing and adaptable to be effective. No country is immune to risks posed by EIDs and that there is no "one size fits all" solution to mitigating risk. The IHR (2005) core capacities provide the 'building blocks' for strong and robust public health surveillance and response systems, no matter what the context. These core capacities need to be developed in advance and not in response to (at the time of) an emergency.

Of the EID threats facing the world, many have emerged in Asian countries of the Western Pacific Region.

Avian influenza A (H5N1 and H7N9)

- 80% of human cases have occurred in the Western Pacific Region, most recently in Cambodia in 2013/14
- The case fatality rate from H5N1 is 59% (393/668)
- Sporadic poultry-to-human cases continue to be reported
- Avian influenza remains a potential threat, as circulation of novel influenza viruses may result in another global influenza pandemic

Middle-East Respiratory Syndrome (MERS)-CoV

- The first MERS case was reported to WHO in September 2012

- Since then 920 laboratory confirmed cases, including 331 deaths, have been reported from 22 countries (15 outside of the Middle East)
- New cases continue to be identified, mainly in Saudi Arabia
- Health-care workers are at higher risk.

Ebola virus disease (EVD)

- Intense community transmission of EVD remains contained in countries in West Africa
- No EVD cases have been detected in the Western Pacific Region
- A small number of secondary cases (n=5) have occurred in Spain and the United States of America following exposure to travel-related cases from West Africa
- While some Western Pacific countries (notably China) have ties with West Africa, on the global scale, the volume of travel between West Africa and the Western Pacific is very small. The Pacific region is particularly isolated as there are no direct flights and little, if any, civilian travel or trade. Fiji has a small number (n=27) of peace keepers in Liberia and some New Zealanders and Australians are working in West Africa as part of the EVD response
- The risk of EVD to the Pacific is low, however possible. The aim of EVD preparedness and response planning in the Pacific is to mitigate the public health consequences of an imported case, particularly through strengthening infection prevention and control in health-care settings.

APSED and IHR (2005) will soon be reviewed and deliberations will feed into the revision process.

2.1.2 Pacific emerging and re-emerging disease threats: arboviral activity

Dr Adam Roth provided an update on arboviral activity in the Pacific since 2012 and the risk for future spread. The Pacific Syndromic Surveillance System (PSSS) indicator- and event-based surveillance components, ad hoc country notifications through PacNet, and surveillance by proxy (i.e. reports from another country that detects cases in returning travelers from the Pacific region) are all means by which arboviruses have been detected.

Since 2012, all four dengue serotypes have at one time or another been detected in the Pacific. The co-circulation of different dengue serotypes, together with Chikungunya and Zika virus outbreaks, have placed extraordinary pressure on PICs' public health systems.

Dengue, the most severe of the circulating arboviruses, typically has a 4–5 year epidemic pattern, with one dominant serotype being replaced by another. In 2012, after an absence of 18 years, DENV-3 was detected and has caused eight outbreaks, five of which are ongoing among the PICs. Looking at the lineages, both the “Asian lineage” and “ECSA lineage” have been identified, with multiple introductions of the virus having occurred.

Chikungunya outbreaks in the Indian Ocean island states, beginning in 2006, had a high attack rate (circa 35%) and caused significant economic and social disruption. The first outbreak of Chikungunya in the Pacific was identified in February 2011 in New Caledonia. Subsequently, eight other PICs have reported outbreaks.

Zika virus was identified for the first time outside of Africa in Yap state, Federal States of Micronesia (the Federated States of Micronesia) in 2007. In 2013–2014 outbreaks have also been detected in Cook Islands, Easter Island, French Polynesia and New Caledonia.

In recent years there has been a global increase in vector-borne disease activity. The presence of viable vectors in all PICs and susceptible populations, together with favourable drivers of disease transmission such as urbanization, globalization and climate change, indicate that the risk posed by arboviruses will continue.

2.1.3 Pacific emerging disease threats: Zika virus

Dr Henri-Pierre Mallet discussed the emerging disease threat of Zika virus. Zika virus is a flavivirus, isolated in 1947 in a rhesus monkey in the Zika Forest, Uganda. First described as a sporadic infection among populations in Africa and Asia, the first outbreak of Zika outside of Africa was identified in Yap State, Federated States of Micronesia in 2007. The Federated States of Micronesia outbreak had a high attack rate but caused only mild disease and no hospitalizations.

Zika virus emerged in French Polynesia in 2013 during concurrent DENV-1 and DENV-3 outbreaks. The outbreak was first detected by the French Polynesia syndromic surveillance system as a cluster of “rash syndrome with moderate fever”. French Polynesia, drawing on domestic reference laboratory capacity, was quickly able to differentiate Zika virus from other circulating arboviruses and other causes of fever and rash. Serological testing for Zika virus cross-reacted with other flaviviruses.

In response, French Polynesia enhanced its national syndromic surveillance system by adding a new surveillance category to better detect potential Zika virus cases. The case definition used was “maculopapular eruption and/or fever of 38.5°C or more AND at least two of the following: red eyes, arthralgia or myalgia, or oedema of the hands or feet”. Clinical cases were confirmed when a laboratory PCR result was positive from blood or saliva samples. About 50 health facilities participated in the enhanced syndromic surveillance system, an increase of 30 on those that participate in routine weekly syndromic surveillance activities.

During the outbreak (October 2013-Apr 2014), 8750 suspected Zika virus cases were identified with 383 being laboratory confirmed. The attack rate was estimated at between 10% and 40%. Attack rates varied by island. The virus spread to all islands within the first two months of the outbreak. No severe cases and no hospitalizations were recorded during acute disease phase.

Maculopapular eruptions were identified in 93% of cases, fever in 72%, arthralgia in 65%, and red eyes in 63%. Approximately two women were confirmed for each male case. The median age of confirmed cases was 28 years.

A notable increase in the number of Guillain Barré Syndrome (GBS) cases, an autoimmune disease typically developing 1–2 weeks following an enteric or respiratory infection, (n=42 in 3 months during the outbreak compared with an average of 5 cases per year in French Polynesia) was identified and an association with the concurrent Zika virus activity in French Polynesia was hypothesized. The mean age of GBS cases was 46 years, 74% were male, all were born in French Polynesia, and 88% reported a viral syndrome compatible with Zika virus disease 2-23 days before the first symptoms of GBS. No

conclusive evidence was found to link the increase in GBS with arboviral activity; genetic marker-based investigation is ongoing.

2.1.4 Ebola epidemic in West Africa: threat to the Pacific

Dr Eric Nilles updated on the EVD outbreak. As of November 2014, more than 15 000 cases and 5400 EVD deaths have been recorded, with health-care workers being disproportionately affected. While there had been a few cases outside of West Africa (all epidemiologically linked to cases in West Africa), the outbreak remains geographically located to Liberia, Sierra Leone, Guinea and a number of neighboring countries.

The immediate goal of the global response is to prevent the spread of EVD to other countries. The medium-term goal (6-9 months) is to stop EVD transmission within all affected countries. The key to achieving these goals is the early detection and isolation of cases, risk communications and social mobilization, infection prevention and control in health care settings and ensuring that high risk practices, such as certain funeral practices, are curbed.

The Western Pacific Region is geographically distant from West Africa and receives a relatively small volume of passenger movement from the affected countries. Travel between West Africa and the Pacific is very limited with few, if any, transits occurring.

WHO's risk assessment concludes that the probability of importation of an EVD case into the PICs is low, however possible. While the risk of importation is low, if a case were to be imported the impact could be major, due to fragile health systems with limited infection prevention and control (IPC) infrastructure in the Pacific. Impacts would likely extend beyond patient morbidity and mortality and include social, economic, political (and potential security) effects.

Health-care settings are known sites for disease amplification and, as such, efforts to prevent transmission within health care settings are critical. The six core areas on which PICs should focus their EVD preparedness efforts are:

1. **Command and coordination:** Established structure within Ministry of Health and the Government for communication and a coordinated response
2. **Surveillance:** Ability to detect (and isolate) suspected cases
3. **Laboratory confirmation:** Ensuring links are made with WHO's EVD priority specimen shipment mechanisms for the safe and prompt testing of specimens
4. **Clinical management and IPC:** Ability to isolate suspected (and confirmed) case/s and prevent amplification in health care settings
5. **Public health interventions including at POE:** Capacity to manage a suspected case at the point of entry and transport the case to an appropriate health facility
6. **Risk communications:** Ensuring mechanisms are established to communicate risk to the public and to manage their fears.

All priority preparedness areas for EVD align with the IHR core capacities. Efforts to prepare for EVD should build on existing public health emergency preparedness systems and structures, thereby building capacity to respond to any EID that is faced in the future.

2.1.5 Discussion

The appropriate laboratory to send EVD specimens

All specimens must go to a WHO collaborating centre for viral hemorrhagic fevers (VHF). The closest collaborating centre is at the US CDC in Atlanta. However, VIDRL in Melbourne has the capacity to test for EVD and may provide a more timely service. WHO has been working with VIDRL and with international couriers to ensure access to rapid testing.

- WHO has established a mechanism to support shipment of EVD specimens to appropriate laboratories. In the event that a PIC identifies a suspected case, they should contact WHO immediately for advice and to activate the appropriate specimen shipping mechanisms.
- Other flaviviruses have outbreak potential in the region, including Semliki Forest virus (previously identified in Papua New Guinea) and West Nile virus (previously identified in Australia as Kunjin virus).
-
- *Identification of suspected EVD-infected travelers in transit*

Protocol dictates that any traveller that meets the case definition for a suspected case of EVD should be quarantined at the port at which they have been identified and not allowed onward travel. For example, if a potential EVD infected traveler whose final destination was a PIC but the traveller was identified when transiting in Australia or New Zealand, the traveller should be stopped in the transit port.

Response support arrangements

In the event of an EVD case, while the clinical and public health management response to an initial case/s would remain the responsibility of national governments, technical support would be rapidly deployed to support the epidemiological investigation, IPC and case management. In the first instance, support would be sourced from WHO's Pacific-based resources, with a second "wave" of more technical-specific tailored support being mobilized from the region and regional partners soon afterward. The Global Outbreak Alert & Response Network (GOARN) may also deliver technical assistance if needed.

2.2 Progress in APSED/IHR core-capacity building

Chair: Dr Eric Rafai, Fiji Ministry of Health and Medical Services

2.2.1 Global and Western Pacific Regional progress and challenges in IHR implementation

Dr Chin Kei Lee stated that the IHR (2005) is the collectively agreed legal framework that governs global public health security. The IHR (2005) provides a shared risk management approach and outlines countries' responsibilities for the detection, reporting and response to global health threats of potential international health concern. The IHR (2005) came into force in 2007.

The Asia Pacific Strategy for Emerging Diseases (APSED), is a bi-regional tool to assist countries and areas of WHO's Western Pacific Region and South East Asia regions

meet their IHR and national core capacity aims. APSED was developed in 2005 and updated in 2010. APSED has been endorsed by all Western Pacific Member States, including the PICs, and South East Asian Region Member States, and is reviewed each year by the APSED Technical Advisory Group.

APSED focus areas are inter-related and cross cutting. The strategy aims to build functional systems (i.e. surveillance systems, response systems, communication systems, command systems, etc.) not simply siloed core capacities. The core components of APSED align with IHR core-capacity building. Event-based surveillance is a necessary component of responsive outbreak early warning surveillance systems. Field-based epidemiology training is a proven method to build a skilled public health workforce. Formal risk assessment in outbreak response has a role in decision making. A well-organized and functioning command system is important for coordinated responses to public health emergencies.

GOARN is a global mechanism for delivery of technical assistance. The WHO-coordinated partnership is a collaboration of technical institutions that are able to quickly mobilize assistance in response to national requests.

In June 2014, globally, 41% of States Parties indicated that they had not yet met the IHR core capacity requirements; in the Western Pacific Region this was lower, at 33%. While progress is being made across all IHR core capacity areas, human resources, preparedness at points of entry, health facility preparedness and public health emergency preparedness require specific attention.

A two-year timeline (2014-2016) of key IHR and APSED-related activities was presented. APSED (2010) evaluation and consultation on the future nature of the Strategy will be conducted in 2015 and that the second (and last) extension period for meeting the IHR core capacities will end in June 2016. These milestones are an opportunity for all countries and areas to contribute to the frameworks that will govern global health security.

2.2.2 Progress and challenges in IHR implementation in the Pacific

Mr Adam Craig outlined the global framework used to monitor progress in IHR (2005) implementation, focusing on the framework's main data collection tool: the IHR Monitoring Questionnaire (IHRMQ). The IHRMQ is an annual self-assessment survey conducted by all 193 States Parties to the IHR every year. The IHRMQ provides a metric to measure progress in each of the core capacity areas required to meet the IHR (2005)'s objectives. In addition to global monitoring, the IHRMQ is a useful tool to track national progress in IHR core capacities achievement. The core capacity areas assessed by the IHRMQ are public health, legislation, coordination, surveillance, response, preparedness, risk communication, human resources, laboratory, and points of entry capacity.

Good progress has been made across most of the IHR core capacity areas in most of the PICs since the last Pacific IHR Meeting in 2012:

Legislation

- Legislative review on Samoa, Cook Islands and Vanuatu to ensure public health laws align with the objectives of the IHR
- Revision and renewal of quarantine laws in Fiji to meet the IHR's risk-based approach to hazard identification and management

- Review of the role and function of National IHR Focal Points in most PICs

Coordination

- Strengthening of national emergency response frameworks, particularly in the Solomon Islands
- Establishment of mass gathering public health surveillance and response coordination systems in the Federated States of Micronesia, Wallis and Futuna and Samoa alongside major events
- Participation in a number of regional and country-based simulation exercises

Surveillance and response

- Addition of 38 new sentinel sites to the Pacific Syndromic Surveillance System
- Establishment/revision of syndromic surveillance response thresholds in many PICs
- Establishment of an Early Warning Surveillance and Response System, after the Honiara flooding, in the Solomon Islands
- Exploration of new technologies to enhance the PSSS

Human resources

- Commissioning of a feasibility study to present/recommend options of field epidemiology, research and health information systems workforce development
- Commencement of the RAPID and DDM training programmes
- Launch of the Papua New Guinea Field Epidemiology Training programme
- Continued roll-out of the WHO on-line Pacific Open Learning Health Net basic epidemiology course

As of 2014, eight of the 14 PICs (including Papua New Guinea) have declared that they have in place the core capacities required to meet the objectives of the IHR (2005). The other six PICs continue to work toward fulfilment by June 2016.

Development partners were encouraged to consider alignment of bilateral programmes with PICs' own IHR core capacity development goals and to draw on PICs' IHRMQ results for planning and evaluation purposes.

2.2.3 Pacific Public Health Surveillance Network (PPHSN): supporting Pacific islands to meet IHR core capacities

Ms Christelle Lepers, Ms Salanieta Duituturaga, Ms Losii Samsel and Dr Mark Durand led the session. Ms Lepers summarized the PPHSN, including the network's goal: to improve public health surveillance and response in the Pacific islands in a sustainable way. Services provided by partners of the network include; PacNet (an email listserv for information sharing); LabNet (a mechanisms to facilitate PICs' access to appropriate laboratory diagnostic facilities within the Pacific or further afield); EpiNet (a network of senior country ministry of health officers that fulfil the command and coordination function during public health events); PICNet (a currently inactive network that was established to promote hospital-based infection control and in the past has aided IPC guideline development and in-country contextualization and training on guidelines); and syndromic surveillance. These service activities support PIC achievement of IHR core capacities.

Ms Samsal presented the structure and utility of the Palau EpiNet committee and how it has grown. First established in 2005, members of the Palau EpiNet committee include an epidemiologist, communicable disease unit nurse, laboratory staff member, infection control nurse, media officer, data and statistics officer, doctor/s and an environmental health officer. The group meets once a month to review ongoing and new EID issues. The EpiNet committee operates as the public health response coordination group during public health events. It is important to engage the National IHR Focal Point in national EpiNet team meetings, both as a source of information (from the global perspective) and in driving change in surveillance and response systems.

IHR (2005) is a national capacity-building endeavour with a set of core capacities to which many regional partners are contributing. The Data for Decision-Making (DDM) training course is supporting data literacy across the region and aiding capacity-building in surveillance, response and workforce development. Collaboratively delivered programmes, such as the DDM course, build harmony in efforts, avoid "reinventing the wheel", and avoid siloed approaches to capacity-building.

2.2.4 Discussion

Progress through partnerships to meet IHR core capacities

Overall, the Pacific has made good progress and most, if not all, PICs will meet the IHR core capacities by the June 2016 deadline. However, limitations for some PICs will require longer-term efforts to meet core-capacity goals. Partners can support PICs to overcome these challenges in the short term by drawing on regional resources, such as regional laboratory capacity and the technical support of partner agencies. WHO continues to support countries through WHO representatives and country liaison offices and technical missions. WHO review and planning missions identify and fill gaps and can draw on global resources.

- *Country experiences and examples*
-
- Francophone countries and areas are waiting for French versions of some training material and reports. They can learn from, and contribute to, regional lessons but are restricted because of language.
- With WHO's support Solomon Islands has been working step by step to address gaps. The Ministry of Health and Medical Services has used events such as the Honiara floods to harness and align efforts to enhance the core systems required for surveillance and response to EIDs.
- The IHR (2005) framework has been a useful tool when engaging air and seaports in public health preparedness in Papua New Guinea.

Comments on the IHRMQ

- For Cook Islands, the IHR framework has provided a structure within which to develop surveillance and response core capacities in a systematic way. The IHRMQ, while useful, is too long and cumbersome to use in the field, and hence has limited utility in country. WHO was requested to simplify the tool in the future.
- All participants noted that the radiological and chemical safety components of the IHRMQ were difficult to assess and perhaps not relevant in the Pacific context.

2.3 Early warning surveillance in the Pacific

Chair: Dr Eric Rafai, Fiji Ministry of Health and Medical Services

2.3.1 Pacific Syndromic Surveillance System update

Dr Viema Biaukula reviewed the development of the Pacific Syndromic Surveillance System (PSSS). In 2009 Pacific health ministers agreed that countries should consider implementation of a syndromic surveillance system. In March 2010, the first Pacific IHR Meeting was held in New Zealand to design a sustainable surveillance system for the early detection of outbreaks of potential public health concern. The PSSS was developed at this meeting.

The PSSS is an IBS system that collects information on four core syndromes from sentinel sites across the Pacific. The core syndromes are: acute fever and rash, acute diarrhea, influenza-like illness and prolonged fever. These symptoms are indicative of common epidemic-prone diseases that threaten health security in the Pacific. The PSSS's strength is its simplicity. The system has been expanded to more than 120 sentinel sites.

Since the last Pacific IHR Meeting (in 2012), the PSSS has been instrumental in detecting a number of outbreaks of dengue and Chikungunya (the Marshall Islands, 2011 and 2013 respectively), Zika virus (Cook Islands 2014), Chikungunya (Samoa and Tonga, 2014) and measles (the Federated States of Micronesia, 2014).

WHO is working with database developers to create a PSSS-tailored data collection, storage, analysis and information-sharing tool to support early warning disease surveillance activities across the Pacific. The tool is due to be pilot tested in mid-2015 and rolled out to all PICs in 2016.

2.3.2 Syndromic surveillance for early detection and monitoring of arboviral outbreaks in French Polynesia

Dr Henri-Pierre Mallet led the session. In French Polynesia, there are 126 government health facilities and 263 private practitioners delivering health services to the population across all 58 islands that make up the territory.

In 2005, the French Polynesia syndromic surveillance system began applying the four core syndromic surveillance case definitions at a limited number of government health facilities. In 2009 the system was expanded to include selected private practitioners; in total 20 sites now report syndromic data on a weekly basis to the national level. In 2013 and 2014 a new syndromic surveillance definition was added to better detect Zika-like illness and Chikungunya-like illness presentations. In addition, the system was expanded to collect data on a weekly basis from 50 sentinel sites. There is potential to expand the system to include surveillance for other threats; however, such expansion would require careful consideration before implementation, as each change to the system causes disruption and places an additional burden on contributors to the system.

Syndromic surveillance in French Polynesia is an adaptable system for the detection and monitoring of epidemic-prone infectious diseases. In French Polynesia, syndromic surveillance is more timely and useful (for public health response purposes) than hospital and laboratory-based surveillance alone. The French Polynesian syndromic surveillance system

has detected outbreaks before laboratories have been able to identify a pathogen (e.g. during the DENV-4 outbreak). Despite the value of the system, it is difficult to maintain reporting stability over the longer term, especially during inter-outbreak periods when interest in routine surveillance wanes. Ongoing investment (e.g. training) in the operators of the system is needed, to ensure sustainability. This is important given the high staff turnover experienced in French Polynesia. The system was effective at detecting new outbreaks but not particularly reliable for the ongoing monitoring of long term public health events.

2.3.3 Use of syndromic surveillance during the 2014 Micronesian Games 2014 mass gathering

Mr Macus Samo led the session. In July 2014, Pohnpei (the Federated States of Micronesia) hosted the Micronesian Games 2014, a gathering of 1200 athletes and 300 trainers and staff plus many spectators. The games ran for 10 days.

The Federated States of Micronesia implemented an enhanced surveillance system during the games that included event-based, indicator-based and hospital-based surveillance components. The games were used to pilot a new approach to integrated public health and laboratory surveillance for public health events.

Before the games, the Federated States of Micronesia conducted an assessment of their syndromic surveillance system, undertook a risk assessment, developed a surveillance action planning, and trialed a web-based data collection system. During the games, the Federated States of Micronesia enhanced syndromic surveillance by using a web-based data entry system to collect and analyse data. After the games an evaluation was conducted and improvements recommended.

Key successes included the ability of the Federated States of Micronesia syndromic surveillance system to expand from 2 to 10 Pohnpei-based reporting sites and from 4 to 8 syndromes during the games. The syndromes that were added to the surveillance system during the games were watery diarrhea (a proxy for suspected cholera), fever and jaundice (a proxy for hepatitis A), heat related illness, and food-borne outbreak. 5640 patient encounters and 408 syndrome cases were detected. All EpiNet team members received training and the opportunity to practice newly learnt skills.

Key challenges included; being able to consistently collect and transport specimens from all surveillance sites (especially from distal sites), technical problems with the trialed web-based surveillance system, logistical difficulties in collecting data from sentinel sites, an inability to investigate every exceedance in threshold due to lack of manpower, and a lack of clarity/understanding and hence application of some of the newly introduced surveillance case definitions.

Mr Samo concluded that syndromic surveillance at mass gatherings can work, however time and human resource are intensive and one needs commitment from all levels of the health system from the outset to make it work in a sustainable fashion. He added that good coordination mechanisms must be in place to manage the additional workload created by an enhanced surveillance system efficiently. Implementing the Micronesian Games mass gathering syndromic surveillance system was educational for the Federated States of Micronesia and has strengthened the EpiNet team's understanding of the value and function of surveillance.

2.3.4 Strengths and weaknesses of the PSSS – results of a recent evaluation

Mr Adam Craig began by outlining the approach and objectives of the PSSS evaluation, noting that the evaluation is based on guidelines provided by the United States Centre of Disease Control and Prevention (US CDC). The evaluation looked at how successful the PSSS had been in meeting its core objectives: (a) simplicity and sustainability, (b) ability to detect unusual cases and clusters of disease and (c) assisting PICs to meet their IHR (2005) obligations. The evaluation method was based on published US CDC methodology.

The PSSS structure is well understood and adaptable and has been integrated into the core functions of ministries' public health work, from the data collection level to decision-making. Senior public health staffs value the system and use information generated by it on a weekly basis.

The system has grown to now collect data from all 23 PICs. Excluding New Zealand and Papua New Guinea, 121 sentinel sites provide surveillance data to the PSSS on a weekly basis.

Qualitative results of the evaluation found that the PSSS is a key source of information for most PIC ministries of health. PIC operators interviewed expressed a high degree of acceptance, perceived value, and trust in the system's performance. The PSSS has provided a mechanism to collect quantitative data with which ministries of health can conduct event risk assessments and base further investigation activities. The PSSS has provided evidence on which to base inter- and intra-MoH risk communication.

In most settings, the stability of the PSSS is somewhat dependent on a small number of operators. This is a weakness of the system that should be addressed through developing the capabilities of a larger number of staff, so that a back-up operator is available to step in and manage national syndromic surveillance in the absence of the lead responsible officers.

National-to-WHO surveillance data reporting is consistently high, however, subnational-to-national varies from week-to-week. Enhancing subnational reporting stability will aid system performance and data analysis.

The evaluation found that the system was good at identifying larger outbreaks, however, sensitivity is lower for outbreaks with smaller numbers of cases. This highlights the need to enhance the immediate notification of rare or unusual events (event-based surveillance) component of the PSSS.

Overall, the PSSS is performing exceptionally well in terms of simplicity and sustainability. The system is highly valued and used by PIC staff. The PSSS is sensitive to larger outbreaks, however, the event-based reporting component of the PSSS should be strengthened to better detect smaller or rare events. The PSSS has made a notable contribution to PICs' fulfilment of their surveillance-related IHR core capacity obligations.

2.3.5 Discussion

- In Papua New Guinea there have been a number of "soft benefits" from instigating syndromic surveillance. These included the normalization of surveillance activities, as well as regular communications and discussion between surveillance and reporting levels.

- One of the overriding objectives of PSSS is to ensure that the system remains as simple as possible to allow it to be extended (and sustained) to less equipped sites. Expansion of the system should not come at the expense of the system's simplicity and hence risk sustainability. While there is a push to expand the number of core syndromes under surveillance and to increase the number of surveillance sites feeding into the system, such changes need to be considered within the context of maintaining a system that is able to function in a consistent and sustainable way across all Pacific contexts.
- The PSSS has achieved a great deal in a very short time and all countries should be proud.

2.4 Role of event-based surveillance in detecting Ebola and other rare public health events

Dr Boris Pavlin stated that EVD does not lend itself to indicator-based surveillance (IBS) (i.e. syndromic surveillance) as EVD is too rare an event to be 'picked up' through routine IBS methods. Furthermore, even if EVD was picked up through IBS, the delay between detection and reporting is too long for a timely response to such a severe disease. Dr Pavlin went on to discuss the ethical implications in detaining asymptomatic individuals simply based on their travel history.

Event-based surveillance (EBS) can be defined as, "the organized and rapid information capture about events that are a potential risk to public health". Sources of information about public health events include health worker reporting, community reporting, media monitoring and other agency reporting. In the first instance PICs should build EBS by strengthening reporting through established channels, with reporting from within the health system the most obvious. EBS is one of many outbreak early warning surveillance tools and that it should be seen as complementary (not in place of) the existing syndromic surveillance activities being undertaken in PICs. EBS is a requirement under the IHR (2005).

A mechanism should be in place to receive EBS notifications (e.g. a hotline or phone number to call/SMS to make a report), and a system should be in place to assess and respond to signals. EBS is a supplementary surveillance tool to detect outbreaks quickly. EBS is particularly relevant for detection of rare or new events that would not be picked up by routine IBS quickly enough. EBS is a requirement of the IHR (2005).

2.4.1 Technical panel on event-based surveillance

Panelists: Mr Berry Ropa, Dr Aaron Oritaimae, Dr Adam Roth and Dr Eric Nilles.

Facilitator: Dr Tony Merritt.

Do the results of EBS in countries have to be reported to the regional level now?

There is no formal obligation to share national EBS-generated information within the region, other than if the event meets the criteria for an event of potential international concern under the IHR (2005). However, sharing of information within established procedures for maintaining confidentiality and data security is always encouraged as it benefits everyone. Sharing negative results of EBS-triggered verifications/investigations can also help to dispel false rumours.

What are the steps involved in setting up an EBS system?

There is a range of EBS activities a PIC could engage in; the amount and complexity of what is undertaken is really dependent on resources and capacity to maintain the activity. The first steps in establishing an EBS system are outlined in the WHO Guideline for establishing EBS. As a starting point, it is recommended to begin by educating health-care workers about why it is important to report suspected outbreaks or single cases of unusual/unexpected clinical presentation or death, and how they should make reports. This may require ministries of health to establish a simple reporting mechanism, such as a hotline or dedicated notification phone number. At the other end of the spectrum of EBS is citizen-based reporting. However, this is extremely resource intensive and should not be an initial action. It is also easy to set up media alerts or read media aggregator sites as a way to track media reports.

What role do EpiNet teams have in EBS?

Regular and structured communication between EpiNet team members can serve as a form of EBS. Sharing of knowledge, rumours and concerns between EpiNet team members is valuable as long as the information is documented, a risk assessment is conducted and, if required, alerts are investigated.

How can EBS be used for EVD?

At this stage, when the outbreak is contained in West Africa and there is little risk of it being imported to PICs, EBS can be as simple as monitoring the media, the Event Information Site for national IHR focal points and WHO updates on any changes in the epidemiology of the outbreak that may impact PICs. If, at a later date, there is imminent risk of EVD being detected in PICs, more aggressive community-based EBS would be required. EVD is one of many disease threats and, as such, national public health systems should consider all risks and conduct appropriate IBS and EBS accordingly.

Ms Danielle Ballantyne – WHO Infection Prevention and Control consultant

Ms Ballantyne, a nurse who recently returned from working at the biggest EVD treatment centre in Liberia, provided a personal perspective of the outbreak drawing on her experience from working in West Africa. Ms Ballantyne described the impact on patients, their families and communities and health-care workers in West Africa. The outbreak is not just a health event but a humanitarian emergency, there is a need for responders to be meticulous about PPE to prevent infections among health-care workers, and that there is a need to celebrate successes (such as when a patient recovers) to maintain morale and remind staff (and the public) that it is possible to survive EVD infection. Fear and stigma persist. These emotions and responses pose additional challenges to recovered patients, their families and health systems as a whole.

2.5 EVD scientific session

2.5.1 History and epidemiology of the EVD epidemic

Dr Eric Nilles provided a brief history of Ebola outbreaks. The first EVD outbreaks were detected in 1976 with two simultaneous but unlinked outbreaks, in Sudan and one in Zaire (Democratic Republic of the Congo). Since 1976, an additional 23 EVD outbreaks have been recorded, with the current outbreak being by far the most severe. This outbreak began in Guinea in December 2013.

The reservoir for EVD is fruit bats and, occasionally, after exposure to fruit bats, primates. Humans have been infected with EVD after handling infected, dead or sick primates or, in some rare cases, after direct exposure to infected bats. Amplification occurs through direct contact with an infected human's blood, body fluids or organs. There is a high risk of transmission when providing direct patient care without appropriate PPE or when handling dead bodies (such as during funerals).

In the past, EVD outbreaks have typically occurred in remote and isolated locations and have been contained within a relatively short period. The current outbreak is different because it originated at the junction of three countries and in an area well connected by road to major urban centres. This is the first time that an EVD outbreak has affected urban communities. Recent civil wars have left health systems weak, misinformation and fear, and a lack of faith in government ability to respond to the epidemic. This has discouraged sick people from seeking health care in health care facilities and has resulted in the large number of EVD cases and associated health and social impacts.

As of November 2014, the case fatality rate (calculated using complete data) was circa 70%, consistent with previous outbreaks. Older people have a much higher likelihood (OR 2.47) of dying. CFR may be lower among cases treated outside of Africa. The incubation period for 95% of cases is less than 21 days (75% less than 12 days). Health-care workers, due to their occupational exposure, have been disproportionately affected, with over 568 cases and 327 deaths reported among this group.

Outside of Africa, 18 EVD cases have been treated (13 diagnosed in Africa and medically evacuated). Of those, the case fatality rate was 22%, indicating that appropriate treatment can save lives.

2.5.2 Unique characteristics of EVD transmission

Dr Boris Pavlin provided an overview of the Ebola virus' structure. It is an enveloped virus and hence is fragile, has poor environmental survival and is vulnerable to detergents and other cleaning agents.

Once a patient is infected with EVD the virus spreads throughout the body and hence can be found (and transmitted through) most body fluids. The most common mode of human-to-human transmission is through direct contact with blood or secretions (vomit, stools etc.) of an infected person. Exposure to objects that have been contaminated with infected secretions are also possible, however, less likely.

EVD is not airborne (like tuberculosis), however, use of N95 masks are recommend in situations where procedures may generate a fine spray (e.g. bronchoscopy or centrifuge). EVD is not mosquito-borne, waterborne or foodborne (faecal-oral), however eating infected bush meat is a risk factor. Transmission by fomites is unlikely; there is no evidence that unsoiled surfaces are a mode of transmission.

Patients are not contagious until symptomatic. Saying this, the concentration of virus in the body of a very ill patient is extraordinarily high when compared to other viruses including HIV and hepatitis C. Viral load (and hence infectiousness) of body fluids increase as a patient becomes more ill. Dead bodies are extremely infectious. Only a very small number of viral particles are required to cause infection and transmit the disease. This combination of very high virus levels in the blood and body fluids and very low number of

viral particles required for infection makes Ebola a unique pathogen. Patients are not contagious once recovered, however the virus remains in breast milk (days unknown) and semen for up to three months after recovery.

Good IPC and correct use of PPE is critical to prevent health-care worker infections. The mucus membranes (eyes, mouth, and nasal passages) require particular attention to prevent accidental or self-inoculation.

2.5.3 Treatment, vaccines and clinical management of EVD

Dr Angela Merianos explained that investigation of novel vaccines and therapeutics should be secondary to good clinical care and public health measures already being implemented to respond to the EVD epidemic. WHO is consulting on a number of potential EVD vaccines and therapies that, in time, may be useful in the fight against EVD. The options are:

- Whole blood therapies and convalescent plasma therapies
- 2 candidate vaccines: Vascular stomatitis virus vaccine; and Chimpanzee adenovirus vaccine

These are experimental interventions that, given the emergency situation, are priorities for development and safety/efficacy testing. Safety and efficacy trials are underway on healthy volunteers. If considered safe and effective, small volumes of the vaccines could become available as early as next year. Priority recipients for the vaccine would include health care workers. Priority recipients of the novel therapeutic agents include infected HCW and patients in West Africa.

2.5.4 Discussion

Advice on managing returning travelers

A person who is not symptomatic does not pose a public health risk. Travellers returning from an EVD affected country should be advised of the risk and required to self-monitor their health in their home environment for 21 days. If symptoms develop they should contact the designated health authority and be isolated until test results confirm if they have or do not have EVD. Symptomatic travellers should be isolated immediately and treated as a suspected EVD case. Asymptomatic contacts of suspected cases should be monitored and followed up as per existing protocols.

Handing of deceased EVD cases

Virus survival in dead bodies: No research has been done to confirm the length of time a body remains infectious. There are clear protocols available for the management of deceased EVD cases and, if managed in accordance to the protocol, risk will be minimized.

There is no evidence that properly buried bodies of patients who have died of EVD are a mode of transmission for ebolavirus; however, the burial of bodies (no matter what the cause of death) near water sources should be avoided, as this potentially poses other risks.

2.6 EVD preparedness: IHR core-capacity developments in the Pacific

2.6.1 Ebola preparedness planning in the Pacific

Dr Eric Nilles presented the results of a recent Western Pacific Region Ebola preparedness survey. The survey, designed to capture progress in EVD preparedness in each of the six EVD priority preparedness areas, was completed by 13 PICs. The survey found that:

- While command and coordination systems exist in most PICs (12/13 PICs surveyed), only 1 of 13 PICs had conducted an EVD exercise to test their system.
- While all PICs were monitoring the global EVD situation, only 2 had developed surveillance protocols, 3 had developed investigation protocols for EVD, and 4 had trained rapid response teams.
- 10 of 13 PICs reported having staff able to ship EVD specimens, if required.
- 9 of 13 PICs had designated a hospital to receive suspected EVD cases, 9/13 had developed IPC guidelines for EVD, 2/13 had adequate PPE, and 7/13 had provided training on IPC with regard to EVD.
- 9 of 13 PICs had a public health emergency plan in place for their international point(s) of entry but only 4/13 had sensitized point of entry staff to appropriate actions, should a suspected EVD case be identified. 3 of 13 PICs reported having protocols in place for the management of suspected EVD cases and 4/13 had information available about EVD for incoming and outgoing passengers at points of entry.
- Risk communication preparedness was generally high.

WHO continues to review the risk posed by EVD to the Pacific islands and, while individual countries are welcome to conduct their own risk assessments, they are welcome to refer to the WHO's assessment. The risk of EVD being imported to the Pacific is low, but possible, but the consequences of importation of an Ebola case would be high to very high for most PICs.

WHO has an emergency stockpile of personal protective equipment (PPE) and, if needed, will distribute PPE to PICs. However, PICs should procure, through normal channels, their own stock of PPE and not rely exclusively on WHO's emergency stockpile. WHO will provide IPC training for staff from all PICs in Nadi in December 2014.

2.6.2 Command and coordination (IHR CC 2 & 4: coordination & response)

Mr Elia Lawena provided an overview of Fiji's public health emergency command and coordination system, specifically focusing on arrangements in the event that a suspected case of Ebola is identified in the country.

Fiji's EVD command and coordination system builds on the PHE emergency preparedness and response system, people, networks and mechanisms. By doing this Fiji is not creating duplicate systems (and hence wasting resources, time or causing confusion). Understanding that the risk of importation of an EVD case is low, Fiji is using the current threat as an opportunity to test and strengthen PHE mechanisms. Cross-agency engagement in the EVD preparedness process, strong leadership, and the key roles functional area coordinators play are important.

2.6.3 Surveillance, risk assessment, response (IHR CC 3 & 4: surveillance & response)

Mr Berry Ropa summarized Papua New Guinea's EVD risk assessment. The current risk is low (as the likelihood of a person arriving in Papua New Guinea who had been in West Africa is small) yet the consequence, if a case did arrive, would be high. EVD surveillance and response activities in Papua New Guinea include:

- Public awareness raising through press releases, radio briefings, and other media
- Preparation of information to distribute to travelers going to/coming from EVD affected areas
- Development of EVD-specific clinical and public health guidance for health care workers
- Identification of isolation facilities to 'house' suspected and/or confirmed cases of EVD
- Introduction of an EVD-specific health declaration card to be filled in by all passengers on inbound flights and the addition of EVD risk screening questions to visa application forms lodged at overseas embassies
- Provision of information and guidance to airlines, airports and seaports on how to manage a suspected EVD case
- Strengthening referral mechanisms for shipment of specimens to appropriate laboratories
- Ongoing training of health care workers.

Preparedness for Ebola has provided an opportunity/impetus to test public health emergency preparedness and response systems.

2.6.4 Public health intervention at international points of entry (IHR CC 9: points of entry)

Dr Sally Gilbert summarized the WHO recommended priority EVD preparedness actions that all countries should implement. In New Zealand the government operates in proportion to the risk so as not to unnecessarily interfere with travel or trade. Priority activities in New Zealand to prepare its international points of entry to detect and respond to EVD include:

- An iterative risk assessment of the situation, updated as new information becomes available
- A review of all plans to ensure their adequacy to respond to EVD
- Sensitization and education of airport staff about EVD and the EVD threat
- IPC and PPE training for airport staff
- An airport EVD exercise was conducted to test and practice response plans and protocols
- Ongoing communication between health and airport authorities
- Adequacy of protocol that arriving planes must report that all travellers are well (pratique) reviewed
- Use of health declarations on passenger arrival cards
- Very low level screening at the border was initiated for people from affected countries
- Identification of an area to isolate, interview and (if required) treat a suspected case

- Mechanisms to transport suspected cases put in place Advice and a protocol to manage contacts of a suspected case prepared
- Providing Information to travellers

A simple and practical response plan needs to be in place to guide response at points of entry, the value in talking to airport and airline staff early so everyone knows what is planned and what role they would play in a response, the need to identify short-term ‘holding areas’ for suspected travellers at points of entry, and the need to ensure mechanisms are in place to transport sick travellers to the designated health facility quickly.

2.6.5 Clinical management and infection prevention and control (IHR CC 4: infection control)

Dr Mike Kama discussed the technical components of Fiji’s clinical management and IPC EVD preparedness. These include:

- Laboratory service – collection and shipment arrangements
- Infection control – PPE, administer and monitor
- Referral/transportation – logistics
- Isolation facility – location, layout, staffing and resources
- Treatment – supportive therapy
- Management of the dead – morgue and burial arrangements
- Waste control – sewage control and incineration
- Communication – network partners of clinical actors

The clinical and patient management processes, including the guideline of maximum time frames for response at different points in the process were also discussed.

2.6.6 Risk communication (IHR CC 6: risk communication)

Dr Saine Vaai-Nielson discussed Samoa’s experience with risk communication planning ahead of the recent SIDS conference. Samoa has approached risk communication preparedness by considering public risk communication as well as internal organizational information sharing and education. Preparedness activities undertaken include:

- Press releases and media campaigns to raise community awareness about EVD risk
- Provision of multi-sector briefings to raise Ministry of Health and counterpart agencies’ awareness about EVD risk
- Developing and sharing EVD preparedness-related plans within the health sector and with relevant stakeholders
- Cabinet briefing to ensure politicians is kept aware of the situation and the risk to Samoa.

EVD preparation is strengthening national preparedness for all hazards, and has strengthened ties with WHO and other regional partners.

2.6.7 Discussion

The key to an effective response

Being as prepared in advance as possible, ensuring the public and health workforce are confident in government responders' preparedness and ability to respond, focusing on keeping health-care workers safe, and communicating risk clearly and consistently

Where can PICs get PPE stocks from quickly?

There is a global backlog (3-4 months) in PPE supply, as stock is being prioritized to efforts in West Africa. PICs should contact their suppliers to ascertain when stock will be available. As noted above, WHO has an emergency stockpile of PPE, however, this should not be relied upon.

2.7 EVD preparedness: Technical review of PICs' national Ebola preparedness plan

Participants were assigned to small groups to discuss and seek technical input to their EVD preparedness plans.

2.8 Ebola simulation exercise

Dr Pavlin led a desk-based simulation exercise. The exercise posed a series of scenarios and questions to small groups of geographically or linguistically stratified PIC delegates. The exercise built on discussions of EVD preparedness, encouraging participants to formulate responses to hypothetical events that would likely challenge national responses to an imported case of EVD to a PIC.

2.8.1 Debrief discussion

Suspected EVD cases on flights or in-transit

As transmission of EVD requires direct contact with blood or body fluids of a symptomatic infected person, those not in contact (i.e. in seats distal to the suspected case) are at very low risk. Close contacts (i.e. co-travellers, airline staff, or those in seats/rows near the suspected case) are considered at risk and should be provided information about their exposure and their risk. These people should be asked to self-monitor symptoms at home and follow up for 21 days.

Passengers on either side of the ill traveller would be considered at high risk of exposure. Aircrew and others in the same aircraft cabin should also be considered at elevated risk, depending on the level of contact they have had with the case or body fluids of the case. Family or friends of the suspected case should also be assessed as they may have been exposed to the same source or had close contact during or prior to their travel.

If a suspected case was identified on an aircraft or transiting through an airport, they would be off-loaded and would not be permitted to continue travelling to their destination.

Country responsibilities

If a traveller is asymptomatic they are (a) unlikely to be detected and (b) do not pose a risk to other travellers; these passengers will likely travel though to their destination. If an exposed person becomes symptomatic in flight or in a transit country (suspected case) they should be removed from the plane, isolated at the first opportunity and not permitted to travel further until it is proven that they are EVD-free. The role of the National IHR Focal Point is

to liaise with the international community (through the official IHR mechanism) to alert previous port authorities of the potential case.

The New Zealand government has proposed to use the National Focal Point pathway to advice countries of travellers from affected countries travelling to their countries. High-risk contacts would not be permitted to travel. Cook Islands have adopted New Zealand's border screening process.

There is no general travel ban in place. However, there is additional health screening of passengers exiting EVD affected countries and enhanced traveler health screening (declaration cards) at major travel hubs, including in Australia, Fiji and New Zealand.

PPE requirement and status

- Guidelines outline the PPE required when managing suspected EVD cases: <http://www.who.int/csr/disease/ebola/protective-measures-staff/en/>
- WHO has an emergency stockpile of PPE, but countries are advised not to rely on this emergency stockpile for their PPE needs, rather they should secure their own stock through usual procurement processes.

Management of deceased EVD patients and burial practices

- Guidelines for the management of dead bodies are available at: <http://www.who.int/csr/resources/publications/ebola/safe-burial-protocol/en/>
- Pacific islanders practice burial rituals that include handling of dead bodies. Unsafe funeral practices have been a factor in EVD transmission in the affected West African countries. IPC training for trainers will be held in December 2014 and February 2015 that will include waste management and dealing with deceased.

A suspected EVD case on an outlying island

If a suspected EVD case was identified on an outlying island, the best course of action may be to isolate and treat the person on the island where they have become ill. This would likely be faster and make it easier to develop an appropriate facility to accommodate and treat the case rather than to try and transport the suspected case. Also, commercial aircraft are unlikely to accept a suspected case.

At what point should national disaster response plan be activated/escalated?

Escalation of national disaster response protocol is a national decision. Guidelines for when to escalate a national disaster response may be outlined in national legislation and/or plans. If a suspected EVD case is identified in a PIC, there will inevitably be a delay in confirmatory testing. As such, it is critical that countries know what they will do in the interim.

Legal obligations for management of flights carrying a suspected EVD case

Reporting of sick travellers on-board a plane is a WHO/ICAO requirement and hence airlines should notify jurisdictions of ill travellers before arriving. Practical requirements for New Zealand were outlined, noting that each country will have its own quarantine laws. In New Zealand, a flight with a sick traveller can be quarantined under the Quarantine Act. It is not appropriate to turn away flights with travellers who require immediate medical

attention, however, in certain circumstances, it may be appropriate to redirect flights to more suitable ports where medical facilities are more equipped.

With regard to shipping of specimens that are category A biological substances (of which EVD is one), these cannot be shipped unless packaged by an IATA certified person. WHO is providing IATA certification training in Q1/2014. Countries without IATA accredited staff may decide to fly an accredited staff member in to meet the requirement. Even with IATA certification, a pilot can refuse to accept the package; WHO is working with the airline industry to address fear and misperception about the risk posed by properly packaged specimens in transit.

Packaging and shipment of specimens and IATA accreditation of staff

WHO is providing IATA training to enhance PIC capacity to ship specimens. EVD confirmatory testing could take more than a week so ministries of health should be prepared to treat based on presumptive diagnosis, at least in the first instance.

Legal obligations and human rights

All countries should operate in accordance with human rights and civil liberties. In regard to infectious disease control, it is not appropriate to detain a person without due course or without a strong scientifically defensible justification that the person poses a risk to the community.

2.9 Developing field epidemiology capacity in the Pacific

2.9.1 The RAPID project – successes, challenges and what lies ahead

Dr Tony Merritt led the session. The Response and Analysis of Pacific Infectious Diseases (RAPID) project aims to build communicable disease surveillance and outbreak response capacity in the Pacific. The project, auspiced by Hunter New England Local Health District in partnership with SPC and WHO, is implemented by a number of partners including PIHOA and US CDC. RAPID is midway (1.5 years) through its implementation phase. Over the last 1.5 years the project has:

- Supported 5 one week country-based data for decision-making epidemiology training courses;
- Participated in delivery of the Papua New Guinea Field Epidemiology Training programme;
- Reviewed the Pacific Outbreak Manual;
- Contributed to outbreak response to dengue in Fiji;
- Supported three workforce exchanges;
- Provided mentoring and assistance to PIC public health staff; and
- Provided support 2014 Pacific IHR meeting.

A mid-programme evaluation of the RAPID-project is scheduled for early 2015. Initial feedback has indicated that the project:

- Is needed, well received and valued by participants;
- Has led to improvements in situation reports, data quality and timely sharing of information;

- Has helped to increase the confidence of participants to share their data and information on public health events, both domestically and between PICs; and
- Is in demand with many countries requesting initial and follow up training.

The RAPID project has been a useful vehicle for the collaborative delivery of epidemiology training. The project has been well received and has identified the need for ongoing generalist epidemiological training in the Pacific.

The RAPID partners acknowledge and thank the Australian Aid programme for its support.

2.9.2 Update on the SHIP initiative, DDM training and plans for the future

Dr Adam Roth led the session. In response to the call by Pacific health ministers to address the lack of trained and experienced epidemiologists in the Pacific, SPC, with agreement from PPHSN coordinating body members, commissioned a feasibility study to consider options for epidemiology training in the Pacific. The feasibility study was conducted in 2013. The study results included:

- A proposal for a Pacific-specific field epidemiology training model;
- Identified priority PICs for training;
- Identified a range of service needs, including IHR/APSED core capacity building; and
- Recommended efforts built on existing (such as the POLHN epidemiology course) or historic (such as the data for decisions-making (DDM) course) training structures in the Pacific.

Following the study, the DDM course has been revitalized and a curriculum of five 1-week training modules is being rolled out across the Pacific. An outcome of the feasibility study has been the development of a new proposal, the Strengthening Health Interventions in the Pacific (SHIP).

The feasibility study recommended a 2-year full time FETP model for the Pacific. The model proposes that trainees participate in six training modules, produce four projects, and publish at least one paper over the length of their training.

The next steps to progress the recommendations of the feasibility study are to harness the commitment of PPHSN partners, seek further endorsement and harmonization with regional and global initiatives and institutions, develop a curriculum, develop an action plan, and attain funding.

2.9.3 A field epidemiology training model for Pacific island countries – reflections from Papua New Guinea

Mr Berry Ropa led the session. Papua New Guinea has a population of more than 7 million people and no trained epidemiologists. The National Department of Health, with technical assistance from WHO and the United States Centers for Disease Control and Prevention, has begun implementation of a 2-year Field Epidemiology Training (FET) programme. The Papua New Guinea FET programme is a competency-based programme involving mentorship, applied and practical projects, and long term follow up. The programme is linked with the global network of FET programmes.

The Papua New Guinea FET programme is structured around three "block" trainings where trainees come together with facilitators to participate in lectures and mentoring activities. At other times, trainees are expected to work on specific work-based projects that contribute to their learning. Mentors are available for support and advice. The Papua New Guinea FET programme accepts 15-20 participants each cohort. After two years the programme completion rate is 67% (22 graduates from two cohorts):

- The selection of trainees is very important to the success of the programme, particularly that participants are able to apply skills learnt in their day-to-day working environment, as this is where the real learning is achieved.
- The importance of adherence to attendance and punctuality to ensure the course is respected by those fortunate enough to be allowed to participate
- The importance of creating a "safe space" for peer learning and open idea sharing
- The importance of being able to adapt the programme to reflect trainees' (and supervisors) needs.
- Graduates are expected to go back and train teams at the subnational level, thereby extending the value of the programme to others.

Papua New Guinea's vision is to have a minimum of two FET graduates in each province and for the programme to be fully integrated and funded by the National Department of Health by 2015.

2.10 The future of regional health security: IHR and APSED

2.10.1 Feedback of 2014 Technical Meeting on APSED

Prof John Mackenzie described the APSED Technical Advisory Group (TAG) structure and function. The TAG's purpose is to bring together Member States, donors, partners and WHO to set strategic directions, policy and approaches to address regional health security threats arising from emerging disease and public health emergencies. TAG is also charged with monitoring the progress in APSED implementation and to make recommendations for priority activities of Members States and WHO. Conclusions of the 2014 TAG meeting in Manila in August 2014 were:

- In view of the experiences with SARS; avian influenza; hand, foot and mouth disease; dengue; measles; and MERS-CoV, it is important to strengthen vigilance, preparedness and response.
- APSED continues to provide a useful collective framework to address public health threats across the Region, and serves as a key tool to mobilize resources.
- Continuous improvement and maintenance of core capacities is crucial.
- It is important to strengthen partnerships and build new partnerships.

The recommendations of the 2014 TAG were:

General

- IHR Extension countries: Accelerate implementation of national APSED/IHR work plans
- Non extension countries: Enhance capacities and, upon request, directly support other Member States in capacity development

Technical

- Review response plans in line with WHO framework for action on avian influenza A(H7N9) and MERS-CoV:
 - Strengthen public health emergency preparedness (all-hazards public health emergency plans)
 - Strengthen IPC and clinical management for EIDs that cause nosocomial infections
 - Strengthen and maintain IHR capacities at points of entry
- EID managers / National IHR Focal Points to establish linkages and arrangements with contributing sectors:
 - Animal health
 - Environmental health
 - Food safety
 - Emergency Management
- Monitoring and evaluation
 - Member States are encouraged to implement the APSED monitoring and evaluation guide
 - Use the APSED planning and review process
 - Especially conduct outbreak reviews
 - Participate in the APSED evaluation

Recommendations to WHO:

- WHO should maintain and strengthen its support to countries for IHR core capacity development, specifically:
 - Finalize the emergency operations centres guide
 - Conduct annual IHR communications exercise “Crystal”
 - Assist with annual IHR/APSED review process at country level
 - Assist with outbreak reviews to demonstrate effectiveness
- WHO should conduct a participatory evaluation of APSED with Member States
- WHO should enhance its readiness to perform alert and response functions, in particular to ongoing threats of avian influenza, MERS-CoV and Ebola virus disease
 - Finalize the emergency operations centres guide
 - Conduct annual IHR communications Exercise Crystal
- WHO should strengthen interregional collaboration to improve vigilance, information exchange and coordination for emerging threats

A brief history of GOARN was provided: In 2000, founding members of GOARN discussed design of a mechanism to improve international responses and deploy international rapid response teams to support public health emergencies. Initially GOARN was a partnership of 69 agencies, including WHO. GOARN and its aims were endorsed by Member States at the World Health Assembly in May 2001.

GOARN’s aims are to: assist countries with disease control efforts by ensuring that rapid and appropriate technical support is available, investigate and characterize events and assess risks of rapidly emerging epidemic threats, and support national outbreak preparedness by ensuring that responses contribute to sustained containment of epidemic threats.

GOARN deployments are triggered by a request for assistance from a WHO Member State. GOARN teams are formed after an alert is raised and a request for assistance is sent to GOARN partners to nominate (and make available, if required) needed expertise. In the past, epidemiologists, laboratory scientists, clinical management specialists, infection control specialists, environmental health specialists, health educators, anthropologists, risk communicators and outbreak logisticians, among others, have been deployed on GOARN missions. More than 1600 technical experts have been deployed in over 175 GOARN coordinated missions to 79 countries.

GOARN has grown to more than 153 partners and is linked in with 37 other networks extending the pool of network members to 355. Further information is available at: <http://www.who.int/csr/sars/goarn/en/>.

2.10.2 The future of APSED: next steps in regional health security

Dr Li explained that APSED is a common regional tool to guide core capacity building, EID surveillance and response systems strengthening. APSED is endorsed by all Member States of WHO's Western Pacific and South East Asian regions. Since inception in 2005, we are nearing the end of the second iteration of the Strategy. 2015 will see extensive efforts to consult with Member States about the future of APSED. This meeting was the first opportunity for PICs to provide input. The results of broad region-wide consultation will be presented to the 2015 TAG meeting, scheduled in July 2015. Dr Li posed three questions:

1. How do you see the importance of the APSED focus areas? Have we achieved the five APSED objectives?
2. What are the 3-5 key lessons learnt from APSED/IHR implementation? How can the investment in IHR core capacities be sustainable in the Pacific?
3. What are the top priorities in the future for PICs in order to ensure a safe and more secure region?

Prof Mackenzie was invited to facilitate the discussion of these topics.

2.10.3 Discussion

Participants noted that APSED is a useful tool to structure and prioritize IHR core capacity development. APSED and IHR were seen as closely related. They were also valued as a common framework for national engagement, high-level advocacy and communication with WHO at the Pacific and regional levels. APSED was also useful as it is framed around health systems strengthening principles, not siloed core capacity building. Progress has been made, particularly in regard to early warning surveillance. However, there was uncertainty as to whether risks have been reduced. Also, as surveillance systems improve more events will be detected. The perspective that PICs are experiencing more disasters now than ever before was questioned, as improved surveillance, response and communication capacity mean that more public health events may be detected.

The need to consider succession planning in strategies such as APSED was also highlighted. That is, a plan for full integration of externally supported programmes into the core business of ministries of health. WHO has been working with PICs, face-to-face or over the phone to develop priority APSED/IHR capacity building plans.

The laboratory network needs to be strengthened to expedite confirmatory testing of infectious agents and hence speed response timeliness. Inherent delays in off-shore laboratory testing, mean it is often inappropriate to wait until for laboratory confirmation before taking preliminary public health action. The importance of risk assessment to guide response while waiting for laboratory confirmation was noted along with the sometimes confusing processes involved in sending specimens – SPC and WHO can provide advice, if needed.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

- Considering the continued threat posed by emerging diseases and other public health emergencies - as evidenced by EVD, other global emerging threats, and major arboviral outbreaks in the Pacific - participants reaffirm the need to enhance national and regional health security preparedness based on IHR/APSED implementation.
- The WHO-led Pacific Syndromic Surveillance System and other Pacific Public Health Surveillance Network services are fundamental elements of health security in the Pacific and help PICs fulfil their IHR (2005) obligations through APSED implementation.
- Event-based surveillance is an important component of early-warning surveillance and is required to meet IHR (2005) obligations. Event-based surveillance is particularly important for detection of new or uncommon diseases, threats and other rare or unusual public health events.
- Despite progress, workforce limitations continue to be a major hurdle to sustainable IHR core capacity implementation in Pacific islands.
- Considering the current threat from Ebola, preparedness for highly infectious pathogens is an urgent priority for Pacific islands; however, to maximize sustainability and prepare for future emerging threats, Ebola preparedness measures should build on existing health security priorities as defined under the IHR (2005). Urgent activities include: (i) infection prevention and control training and preparedness to ensure protection of healthcare workers; (ii) ensuring all PICs have at least one isolation unit with the capacity to manage patients with highly infectious pathogens, including Ebola; and (iii) laboratory staff are trained and systems are in place to rapidly and safely collect, package and ship infectious samples to appropriate national or international facilities for testing.

3.2 Recommendations

- 1) As a priority, PICs, with support from WHO, SPC and other partners, will strengthen the following IHR core capacity areas over the next two years: (i) early warning surveillance capacity, (ii) rapid response capacity, (iii) workforce capacity, and (iv) IHR core capacities at international Points of Entry (PoE).
- 2) PICs, WHO, SPC and partners will work collaboratively to strengthen the Pacific Syndromic Surveillance System (PSSS) and other PPHSN services.
- 3) PICs, with support from WHO, SPC and partners, should continue to develop, implement, test and evaluate their public health emergency preparedness and response plans, including for Ebola.
- 4) WHO, SPC and partners should support those PICs that have requested an IHR extension to enhance their IHR core capacities by June 2016.

- 5) WHO, SPC and partners should support PICs to implement formal event-based surveillance as a complement to the indicator-based PSSS.
- 6) PPHSN members and other partners should enhance workforce capacity building models such as the Response and Analysis for Pacific Infectious Disease (RAPID) project, Data for Decision-Making (DDM) course, Strengthening Health Interventions in the Pacific (SHIP) proposal, and Field Epidemiology Training Programme (FETP).
- 7) WHO should explore bulk purchase of personal protective equipment (PPE) for PICs in response to the Ebola threat.
- 8) WHO and SPC should work with PICs to ensure there is in-country capacity to package and transport highly infectious specimens, including Ebola specimens, in-line with IATA requirements. WHO and SPC should also support the logistics of transporting such specimens.
- 9) PICs and partners should participate in the planned WHO external and internal evaluation of APSED/IHR in 2015.

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ANNEX 2**PROGRAMME OF ACTIVITIES****DAY 1 – MONDAY, 24 NOVEMBER**

08:30 Registration

PLENARY 1: OPENING SESSION

09:00 Opening prayer

- *Ms Avanoa Homasi-Paelate, Ministry of Health, Tuvalu*

09:05 Welcome and opening remarks

- *Fiji Ministry for Health*
- *Dr Takeshi Kasai, Director Program Management, WHO Western Pacific Region (WPRO)*
- *Dr Paula Vivili, Deputy Director Public Health Division, Secretariat of the Pacific Community (SPC)*

Self-introductions

Overview of objectives and agenda

Nomination of Chairs

Administrative announcements

10:00 Group photo followed by morning tea

PLENARY 2: EMERGING INFECTIOUS DISEASE UPDATES

10:30 Global emerging infectious disease threats

- *Dr Ailan Li, WPRO, Director Health Security and Emergencies*

10:45 Pacific emerging disease threats: Zika virus

- *Dr Henri-Pierre Mallet, Responsable du Bureau de veille Sanitaire Direction de la santé, French Polynesia*

11:00 Pacific emerging & re-emerging disease threats: Dengue and chikungunya viruses

- *Dr Adam Roth, SPC*

11:15 Ebola epidemic in West Africa: threat to the Pacific

- *Dr Eric Nilles, WHO-DPS*

11:30 Discussion

12:00 Lunch

PLENARY 3: PROGRESS IN APSED/IHR CORE CAPACITY BUILDING

- 13:00 Global and Western Pacific Regional progress and challenges in IHR implementation
- *Dr CK Lee, WPRO*
- 13:15 Progress and challenges in IHR implementation in the Pacific
- *Mr Adam Craig, WHO-DPS*
- 13:30 Pacific Public Health Surveillance Network (PPHSN): supporting Pacific islands meet IHR core capacities
- *Dr Adam Roth and Ms Sala Elbourne, SPC*
- 14:00 Discussion
- 14:30 Afternoon tea

PLENARY 4: EARLY WARNING SURVEILLANCE IN THE PACIFIC

- 15:00 Pacific Syndromic Surveillance System (PSSS) update
- *Dr Viema Biaukula, WHO-DPS*
- 15:15 Syndromic surveillance for early detection and monitoring of arboviral outbreaks in French Polynesia
- *Dr Henri-Pierre Mallet, French Polynesia*
- 15:30 Use of syndromic surveillance during the 2014 Micronesian Games 2014 mass gathering
- *Mr Marcus Samo, Assistant Secretary for Health, Federated States of Micronesia*
- 15:45 Strengths and weaknesses of the Pacific Syndromic Surveillance System – results of a recent evaluation
- *Mr Adam Craig, WHO-DPS*
- 16:00 Discussion
- 16:15 Role of event-based surveillance in detecting Ebola and other rare public health events
- *Dr Boris Pavlin, WHO-PNG*
- 16:30 Technical panel on event-based surveillance
- *Panellists: Mr Berry Ropa, Papua New Guinea; Dr Aaron Oritaimae, Solomon Islands; Dr Adam Roth, SPC; Dr Eric Nilles, WHO-DPS*
- *Facilitators: Dr Eric Rafai, Fiji, and Dr Tony Merritt, Hunter New England Health*
- 17:30 Close

DAY 2 – TUESDAY, 25 NOVEMBER

- 08:30 Recap of the previous day's discussion
 - *Ms Losii Samsel, Senior Epidemiology Specialist, Palau MOH*

PLENARY 5: EBOLA SCIENTIFIC SESSION

- 08:40 History and epidemiology of the current EVD epidemic
 - *Dr Eric Nilles, WHO-DPS*
- 08:55 Unique characteristics of Ebola transmission
 - *Dr Boris Pavlin, WHO-PNG*
- 09:10 Treatment, vaccines and clinical management of EVD
 - *Dr Angela Merianos, WHO-DPS*
- 09:25 Discussion
- 09:40 Morning tea

PLENARY 6: EBOLA PREPAREDNESS: IHR CORE CAPACITY DEVELOPMENT IN THE PACIFIC

- 10:00 Ebola preparedness planning in the Pacific, and introduction to plenary 6 and 7
 - *Dr Eric Nilles, WHO-DPS*
- 10:30 Command, control and coordination (IHR CC 2 & 4: coordination & response)
 - *Mr Elia Lawena, Fiji MOH*
- 10:50 Surveillance, risk assessment, response (IHR CC 3 & 4: surveillance & response)
 - *Mr Berry Ropa, Papua New Guinea MOH*
- 11:10 Public health intervention at international points of entry (IHR CC 9: points of entry)
 - *Dr Sally Gilbert, New Zealand MOH*
- 11:30 Clinical management and infection prevention and control (IHR CC 4: infection control)
 - *Dr Mike Kama, National Adviser Communicable Disease, Fiji MOH*
- 11:50 Risk communication (IHR CC 6: risk communication)
 - *Dr Saine Vaai-Nielson, Samoa MOH*
- 12:10 Discussion
- 12:30 Lunch

SESSION 7: EBOLA PREPAREDNESS: IHR CORE CAPACITIES DEVELOPMENT IN THE PACIFIC (CONT...)

- 13:30 Concurrent sessions: Technical review and enhancement of national Ebola preparedness plans
- 15:00 Afternoon tea

PLENARY 8: BREAKOUT SESSION - EBOLA SIMULATION EXERCISE

- 15:30 Simulation exercise
- *Facilitated by Dr Boris Pavlin, WHO-PNG, and Adam Roth, SPC*
- 17:30 Close

DAY 3 – WEDNESDAY, 26 NOVEMBER

- 09:00 Recap of the previous day’s discussion
- *Ms Losii Samsel*

PLENARY 9: DEVELOPING FIELD EPIDEMIOLOGY CAPACITY IN THE PACIFIC

- 09:10 The RAPID project – successes, challenges and what lies ahead
- *Dr Tony Merritt, Epidemiologist, HNE Health*
- 09:25 Update on the SHIP initiative, DDM training and plans for the future
- *Dr Adam Roth, SPC*
- 09:40 A Field Epidemiology Training Model for Pacific island countries– reflections from PNG
- *Mr Berry Ropa, Papua New Guinea MOH*
- 09:55 Discussion
- 10:15 Morning tea

PLENARY 10: THE FUTURE OF REGIONAL HEALTH SECURITY: IHR AND APSED

- 11:00 Feedback of 2014 WPRO Technical Meeting on APSED
- *Prof John Mackenzie*
- 11:15 The future of APSED: next steps in regional health security
- *Dr Ailan Li, WPRO-DSE*
- 12:00 Plenary discussion: Priority actions for Pacific island
- *Facilitated by Prof John Mackenzie*
- 13:00 Lunch

PLENARY 11: CONCLUSIONS AND RECOMMENDATIONS

- 14:30 Discussion of the meeting’s resolutions
- *Dr Eric Nilles, WHO-ESR*
- 16:30 Closing comments
- *Dr Eric Rafai, Fiji MoH*
- *Dr Takeshi Kasai, WHO/WPRO*
- 16:50 Closing prayer
- 17:00 Meeting closed



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SPC
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