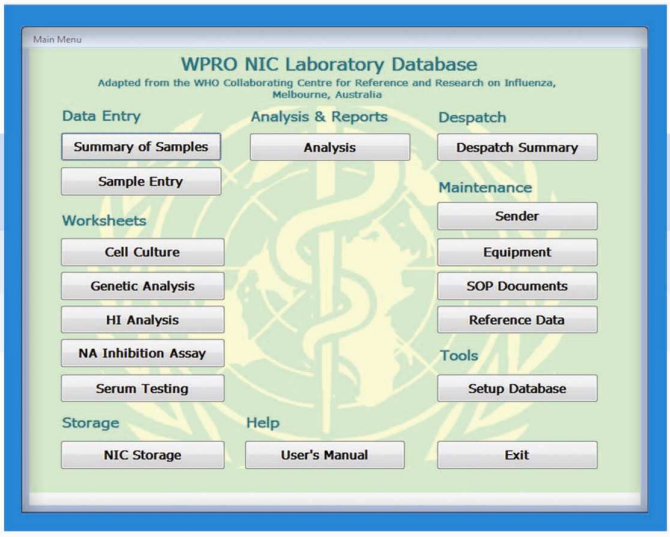
Meeting Report

Third Meeting of the National Influenza Centres in the Western Pacific and South-East Asia Regions



18-20 August 2009
Beijing, China

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Report on the third meeting of the National Influenza Centres in the Western Pacific Region and South-East Asia Region

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NOTE

The views expressed in this report are those of the participants of the third meeting of the National Influenza Centres in the Western Pacific Region and South-East Asia Region and do not necessarily reflect the policies of the WHO.

This report has been prepared by the WHO Regional Office for the Western Pacific for the Member States in the Region and for those who participated in the third meeting of the National Influenza Centres in the Western Pacific Region and South-East Asia Region held in Beijing, China on 18-20 August 2009.

SUMMARY

The third meeting of the National Influenza Centres in the Western Pacific Region and South-East Asia Region was held in Beijing, China, from 18 to 20 August 2009. The meeting was attended by 43 participants from 19 countries and areas within the Western Pacific Region and the South-East Asia Region.

Participants from the Western Pacific Region included country Representatives from Australia, Cambodia, China, Fiji, the Republic of Korea, the Lao People's Democratic Republic, Malaysia, Mongolia, New Caledonia, New Zealand, Papua New Guinea, the Philippines, Singapore, and Viet Nam.

Participants from the South-East Asia Region included country Representatives from Bangladesh, India, Nepal, Sri Lanka and Thailand.

There were 13 temporary advisers and about 52 observers.

Temporary advisers included representatives from WHO Collaborating Centre for Reference and Research on Influenza (Australia); the Canterbury Health Laboratories (New Zealand); the Centre for Health Protection (Hong Kong) (China); Centers for Disease Control and Prevention (United States of America); the European Centre for Disease Control and Prevention (Sweden); the National Institute of Infectious Diseases (Japan); and Tohoku University Graduate School of Medicine (Japan).

Observers included representatives from the Avian Influenza Control and Human Pandemic Preparedness and Response Project (Mongolia); the Centres for Disease Control and Prevention (China); the Embassy of Canada in China; the Regional Emerging Disease Intervention (REDI) Centre (Singapore); the World Bank Office (China); and WHO Collaborating Centre for Reference and Research on Influenza (Australia).

The WHO Secretariat consisted of 19 representatives from Headquarters, Western Pacific Regional Office and country offices, including: Cambodia, China, the Federated States of Micronesia, the Lao People's Democratic Republic, Mongolia, Thailand and Viet Nam.

The objectives of the meeting were:

(1) to review lessons learned from pandemic response and to determine appropriate measures for mitigating the impact of the pandemic influenza (H1N1) 2009;

(2) to review the laboratory and epidemiological capacities and practices on seasonal and pandemic influenza surveillance to determine the way forward;

(3) to update knowledge on research and development of the pandemic influenza A (H1N1) 2009, influenza A (H5N1) and seasonal influenza viruses; and

(4) to discuss and identify the need and mechanism for sharing information of seasonal and pandemic influenza surveillance among countries in the Asia Pacific.

The workshop consisted of six plenary sessions. Plenary sessions included: Regional and Global Updates; Influenza Surveillance (seasonal and pandemic); NIC's Roles in Pandemic Preparedness and Response; Pandemic and Avian influenza Updates; Pandemic Preparedness and Response; and Response to Pandemic (H1N1) 2009 – Country's Experiences.

CONTENTS

Key words

Influenza A Virus, H1N1 Subtype / Influenza A Virus, H5N1 Subtype /Influenza, Human – epidemiology, prevention and control /Disease outbreaks – epidemiology / Population surveillance / Communicable disease control – methods, organization and administration / Asia, Southeastern / Western Pacific

1. INTRODUCTION

National Influenza Centres (NICs) are the backbone of the WHO Global Influenza Surveillance Network (GISN). There are 119 NICs in 90 countries. Since the establishment of the GISN in 1948, it has been serving global public health by updating seasonal influenza vaccine compositions and functioning as a global alert mechanism for the emergence of influenza viruses with pandemic potential. The GISN has contributed to the understanding of influenza epidemiology.

Influenza surveillance has been established in many countries of the Western Pacific Region and South-East Asia Region. There are 19 NICs in 14 countries in the Western Pacific Region and nine NICs in seven countries in the Southeast Asia Region. There are also two WHO Collaborating Centres for Reference and Research on Influenza in Australia and Japan.

The Western Pacific Region and South-East Asia Region have a critical role in global influenza surveillance. WHO recommends vaccine strains twice a year for northern and southern hemispheres influenza vaccines. Many of the recommended strains originally were isolated from countries in these WHO Regions. In recent years, these WHO regions faced continuing threat of influenza A (H5N1), which highlighted the importance of the regions as a potential source of the next pandemic strain. Actions were taken by both WHO and countries in the Regions to strengthen the capacity of influenza surveillance in recent years. An opportunity for the NICs, ministry of health officials, and WHO to meet regularly to share the experiences, successes and challenges was recognized.

The first meeting of the NICs in the Western Pacific Region and South-East Asia Region was held in Melbourne, Australia, from 1 to 4 May 2007. A biregional four-year workplan for strengthening national influenza surveillance capacity was formulated during the meeting. The workplan subsequently was endorsed by the biregional Technical Advisory Group (TAG) as a sub-workplan of the Asia Pacific Strategy for Emerging Diseases (APSED). The workplan requires WHO to take actions in strengthening the capacity of NICs including organizing their annual meetings. The second meeting was held in Tokyo, Japan, from 21 to 24 April 2008. A comprehensive influenza surveillance guideline, an influenza disease burden study guideline and database software for NICs were introduced during the meeting.

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1.1 Objectives

(1) To review lessons learned from pandemic response and to determine appropriate measures for mitigating the impact of the pandemic influenza (H1N1) 2009

(2) To review the laboratory and epidemiological capacities and practices on seasonal and pandemic influenza surveillance to determine the way forward

(3) To update the knowledge on research and development of the pandemic influenza A (H1N1) 2009, influenza A (H5N1) and seasonal influenza viruses

(4) To discuss and identify the need and mechanism for sharing information of seasonal and pandemic influenza surveillance among countries in the Asia Pacific.

1.2 Appointment of Chairperson, Vice-Chairperson and Rapporteur

For each of the six plenary sessions and the closing session a different Chair and Co-Chair were selected. Representatives from different countries, areas and organizations present at the meeting were selected for these roles. Dr Hitoshi Oshitani, a WHO Temporary Adviser, was selected as the Rapporteur for the duration of the meeting and gave a concise summary of the previous days' proceedings each morning prior to commencement of the next plenary session.

The chair and co-chair for Plenary 1, Regional and Global Updates, was Dr Anne Kelso and Dr Wenqing Zhang, respectively. Plenary 2, Influenza Surveillance (Seasonal and Pandemic), Dr Masato Tashiro was the chair and Dr Tim Nguyen co-chaired. Plenary 3, NIC's Roles in Pandemic Preparedness and Response, was chaired by Dr Wilina Lim, with Dr Takato Odagiri as her co-chair. The chair for Plenary 4, Pandemic and Avian Influenza Update, was Dr Ian Barr and co-chair was Dr Xu Xiyan. Plenary 5, Pandemic Preparedness and Response, the chair was Ms Ann Moen, with Dr Yu Hongjie as co-chair. The last plenary session, Plenary 6: Response to Pandemic (H1N1) 2009 – Country Experiences, was chaired by Dr Hitoshi Oshitani, with Dr Lance Jennings as co-chair. The chair for the closing session was Dr Angus Nicoll, and it was co-chaired by Dr Shu Yuelong.

2. PROCEEDINGS

2.1 Presentations about NICs and their role

Speakers were invited from WHO HQ, the Western Pacific Regional Office, WHO Collaborating Centres, the National Institute of Infectious Diseases, Japan, (NIID), the United States of America Centres for Disease Control, the Chinese Centre for Disease Control and Prevention, the Centre for Health Protection, Hong Kong (China), the European Centre for Disease Control and Prevention (ECDC) and the ministries of health of China, Viet Nam and Cambodia.

Presentations were given on a variety of topics. Topics related to influenza surveillance, NIC roles during pandemic and contingency planning, antiviral resistance monitoring, NIC database establishment, pandemic influenza A (H1N1) 2009 and H5N1 virology and vaccine development, country-specific updates on human avian influenza, the framework for action for community transmission during pandemics, public health measures for mitigating the impact of pandemic A (H1N1) 2009 and monitoring and evaluation. The APSED framework not only guides capacity building in public health, but also applies to the improvement of patient care during an outbreak. It is particularly important in reducing the morbidity and mortality during an outbreak of emerging infectious diseases (EID). A regional clinical network is in line with the framework of APSED. It also highlights the need for closer collaboration between clinicians and public health professionals in combating EID.

2.2 Group discussion sessions

On the third day, participants were divided into four groups for discussion. During the afternoon, a representative from each group provided feedback to the audience.

The objectives of this session were:

(1) to discuss strategies and areas for strengthening pandemic surveillance;

(2) to identify the need for strengthening NIC's contingency planning;

(3) to discuss possible public health measures to mitigate pandemic impact; and

(4) to identify possible regional influenza information sharing mechanisms.

2.2.1 **Plenary 1: Updates and responses to pandemic influenza A (H1N1) 2009**

Dr Wenqing Zhang, WHO Headquarters, provided a brief update of the global situation and response to pandemic

A timeline of pandemic (H1N1) was presented from 12 April 2009, when the outbreak of influenza-like illness (ILI) first was detected in Mexico, to 11 June when WHO declared pandemic phase 6. Pandemic phases, past events and general pandemic requirements were analysed. WHO roles were detailed in relation to the current pandemic responses. These involved/involve emergency room activation, both field and Global Outbreak Alert and Response Network (GOARN) operations, situation monitoring and assessment, the formulation of technical guidance, vaccines and risk communication strategies.

Situation monitoring and assessment included the provision of laboratory-confirmed case numbers and deaths by region. The case fatality rate indicated by these numbers is not accurate and is estimated to be significantly lower because of the large numbers of unreported cases. The severity of the disease is mild in most cases, resolving without medical intervention. At present, influenza A (H1N1) is the predominate circulating virus in all southern hemisphere countries except South Africa, while in the northern hemisphere it continued to spread rapidly to new areas.

The genetic makeup of the virus was not detected previously among viruses infecting either swine or humans. Important vaccine considerations for WHO include production capacity and recommendations by strategic advisory group experts on immunization (SAGE) such as country-specific determination of priority groups for vaccination.

Concerns of cocirculating seasonal and pandemic viruses, continuous H5N1 infections in humans and unpredictable mutation of the pandemic virus pose continuing threats to the global community. Challenges of timely availability of effective vaccines and improvement of vaccine supply are continuing.

As the pandemic continues to evolve, a timely, multisector, collaborative response is required as well as more information to fully understand the virus and efficacy of various response measures.

2.2.2 **Western Pacific Region**

Dr Takeshi Kasai, Western Pacific Regional Office, spoke of the situation and response in the Western Pacific Region to pandemic (H1N1) 2009.

The first case of pandemic (H1N1), detected within the Western Pacific Region was in New Zealand on 28 April 2009. The index case was associated with a school trip to Mexico.

Following this, cases were detected in Hong Kong (China), China and the Republic of Korea. The first cases in the Pacific were not announced until 18 June.

In the northern hemisphere, the pandemic was widely spread geographically and these countries and areas experienced an increase in the number of ILI cases compared with previous years. It is evident that the influenza A (H1N1) case numbers were gradually increasing. In comparison, influenza A (H1N1) is currently the predominate strain circulating in the southern hemisphere, which was in the middle of its influenza season. The tropics seasonal influenza activity was increasing compared to previous years, and pandemic activity was continual. In the Pacific, 18 of the 21 countries and areas have detected cases, with the most reported in Fiji and Samoa. By 13 August, both of these countries had reported nearly 100 cases each. To date, 137 deaths occurred within the Western Pacific Region as a result of influenza A (H1N1), and cases of oseltamivir resistance have been reported.

Countries and areas were advised to shift from containment to mitigation measures once community transmission was evident. Signs of this can include school outbreaks presenting with index cases that exhibit no related travel history. Monitoring of the impact of the pandemic is vital; overall impacts on populations remain unknown. However, increased demands on health care systems were evident. For example, routine surgeries were postponed and potential economic loss was reported in some countries.

APSED covers core capacities required for pandemic preparedness and the International Health Regulations (IHR). Therefore, countries and areas within the Region can continue to strengthen their core capacities through this framework. Within this foundation, the Western Pacific Regional Office and the South-East Asia Regional Office have established a framework for action to assist preparations with the goal of minimizing preventable deaths. Surveillance, command, health care system response, public health interventions and communications are all components of this framework.

Overall, the epidemiological situation of the pandemic differed by country and the virus had not yet mutated. For countries and areas that have not yet experienced extensive community transmission, it is important to prepare for this transition at the national and local levels as much as possible. In addition, it is crucial for all countries and areas to monitor H5N1 activity to reduce the probability of viral reassortment as well as cases of hand foot and mouth disease that also presented in high numbers.

2.2.3 **The forthcoming influenza season**

Dr Weigong Zhou, the Centres for Disease Control and Prevention, United States of America, reported on regional activities and preparation for the forthcoming influenza season.

Significant process has been made since the first NIC meeting. This meeting was hosted by the WHO Collaborating Centre and was held in Melbourne, Australia, in May 2007 and attended by 45 participants from 19 countries. The gaps were identified, the way forward was established and a work plan for establishing and strengthening a comprehensive National Influenza Surveillance System was formulated. Since this meeting, several hands-on training sessions have been conducted within the Region and guidelines have been formulated including, “A Practical Guide to Harmonizing Virological and Epidemiological Influenza Surveillance” and “A Practical Guide for Designing and Conducting Influenza Disease Burden Studies”.

The NIC workplan goals set to be achieved by 2010 are:

(1) the establishment of sustainable comprehensive National Influenza Surveillance Systems; and

(2) to have a preliminary understanding of the influenza disease burden in Asia Pacific countries.

Preparing for the forthcoming influenza season in the middle of a pandemic presents challenges and opportunities. Being alert and aware of H5N1 activity is crucial, seasonal influenza surveillance systems need strengthening and a need for a system that can detect any virus with pandemic potential is evident.

The objectives of pandemic response include slowing the virus spread and minimizing transmission to vulnerable populations, reduction of mortality impact through improving health care system preparedness and response to provide appropriate treatment particularly for severe cases, and minimizing social disruption and other negative consequences.

2.2.4 **Plenary 1 discussions and questions**

Discussion prompted the comment that SAGE recommendations regarding priority groups for vaccination seemed to be inconsistent with the overall objectives of the strategy. Objectives can be used by national authorities to formulate their own policies, and priority risk groups (from public health evidence) also should be considered. The SAGE recommendations do not give a priority order, but suggest priority groups that can be used to guide national authorities. The next SAGE meeting scheduled for November 2009 will provide an opportunity to review issues such as this.

Discussion prompted the question as to whether any countries in the Region were spared from the current pandemic and any possible reasons why. One country in the Region was not affected. However this was ironic because as surveillance and laboratory capacity is high in this country. Yet cases were not detected despite an extensive search in that nation's domestic community.

Countries in the southern hemisphere that already experienced widespread community transmission of influenza A (H1N1) can help provide valuable information to countries that have yet to experience it. For example, presently unaffected countries in the northern hemisphere are likely to follow the same course of virus transmission and may be able to apply lessons learnt regarding successful mitigation measures learnt from countries that experienced widespread transmission of the virus.

The discussion raised the question as to what influenza strain was currently dominant in the northern hemisphere countries. The predominant strains in these countries were H1N1 and H3N2.

2.2.5 **Plenary 2: Influenza surveillance, both seasonal and pandemic**

Dr Shu Yuelong, Chinese National Influenza Centre, China, spoke of influenza surveillance in his country.

Three main types of influenza surveillance are used in China: ILI outbreak, virological and hospital-based. Since 9 June 2009, the surveillance network has comprised three laboratories and 197 sentinel hospitals. This broad network covers laboratory, outbreak and epidemiological

information. In order to enhance quality, an evaluation system has been in place for this network since 2007.

In analysis of ILI statistics reported by sentinel hospitals in southern China during the period 2006-2009, there was evidence of an increase in the number of adult cases and a decrease in the number of child cases reported. The reason for this is not clear. However, it may be associated with H1N1. Throughout this period, H3 was noted to be the largest circulating strain while H1N1 was the smallest. Analysis of the geographical distribution of the virus in China indicates that the majority of cases come from the south and five provinces still have not reported any cases.

2.2.6 **Southern hemisphere**

Dr Ian Barr, WHO Collaborating Centre for Reference and Research on Influenza, Australia, spoke of influenza surveillance in Australia, New Zealand and other southern hemisphere countries.

The recommended publications on influenza from a country perspective include the *Australia Influenza Report* and the *New Zealand Influenza Report*.

In Australia, ILI surveillance and reporting increased significantly since the pandemic started and was a noticeable disease. Of note, overall ILI in Australia was similar to previous years, while in the state of Victoria the pattern was similar to 2007. Influenza A (H1N1) cases first were detected in Victoria and then spread to other states. Queensland still was detecting many new cases. H1N1 was the predominant influenza strain circulating in Australia at that time.

Young adults were more affected than the elderly, the median case age was 18 years old and the case fatality rate was 0.3%. Pregnant women appeared to be more affected than the general population, accounting for 3% of all hospitalizations, usually in their second or third trimester. Most deaths included people with underlying medical conditions such as morbid obesity and cancer. Aboriginals also were more severely affected. Of note, deaths from seasonal influenza are less than the number experienced previous years. At the time of the meeting, there were 29 833 laboratory-confirmed cases of influenza A (H1N1) in Australia, although this is a vastly inaccurate number of actual case numbers because of underreporting.

In New Zealand, influenza A (H1N1) is the predominant circulating strain by far, and to date 3 051 cases, including 10 deaths, were reported.

2.2.7 **Northern hemisphere**

Dr Takato Odagiri, National Institute for Infectious Diseases, Japan, gave an update of influenza virus surveillance findings in the northern hemisphere.

During the period October 2008-February 2009, influenza A (H1N1) viruses were predominant in many Asian and North American countries. The majority of these viruses were antigenically close to A/Brisbane/59/2007 by HI analysis. Recent 2B viruses shared H275Y, indicative of resistance to oseltamivir, which are antigenically similar to osel-sensitive viruses. Recent viruses from China fall within the A/Hong Kong/2652/2006 clade (2C), and these viruses were similar antigenically to clade 2B viruses, which are sensitive to oseltamivir and resistant to amantadine/rimantadine.

When analysing viruses from March to July 2009, the viral features were similar to those observed earlier in the year. The majority of recent A (H1N1) viruses are antigenically closely related to A/Brisbane/59/2007 and form clade 2B, sharing H275Y. In a few of the clade 2C viruses, dual resistance to oseltamivir and amantadine/rimantadine were detected.

H3N2 viruses cocirculated with H1N1 and B viruses in many countries throughout the period from October 2008 to February 2009. The majority of these were antigenically similar to A/Brisbane/10/07 and A/Uruguay/716/07 by HI tests with turkey RBCs or guinea pig RBCs. The low reactors were antigenically indistinguishable from vaccine viruses by neutralization tests. HA and NA sequences are fairly homogeneous and fell within the A/Brisbane/10/07 clade. M2 sequences possessed S31N mutation, indicative of amantadine resistance and proved to be sensitive to oseltamivir and zanamivir.

From March to July 2009, an increasing number of H3N2 isolates were shown to be antigenically distinct from vaccine viruses and related to A/Hawaii/7/09, A/HK/1985/09 and A/Perth/16/09. The majority of HA sequences of those viruses formed a separate clade characterized by a substitutions E62K, N144K, K158N and N18K. These retained resistance to amantadine/rimantadine and were sensitive to oseltamivir and zanamivir.

Influenza B viruses circulated in many countries. However, regional outbreaks were limited throughout the period from October 2008 to February 2009. Viruses of both B/Victoria/2/87 and B/Yamagata/16/88 lineages continued to cocirculate in many countries over this time. There was strong evidence of B/Victoria-lineage viruses predominating in most countries, and these were close antigenically to B/Brisbane/60/2008. Viruses from China mainly fell into a separate phylogenetic clade. B/Yamagata-lineage viruses were antigenically closely related to B/Florida/4/2006 & B/Brisbane/3/2007 vaccine viruses. Three phylogenetic clades were apparent but were antigenically indistinguishable.

From March to July 2009, B/Victoria-lineage viruses predominated and were mostly antigenically closely related to vaccine strain B/Brisbane/60/2008. Many viruses isolated in China were closely related to B/Fujian Gulou/1272/08 and B/Hubei-Songzi/51/08. B/Yamagata-lineage viruses were antigenically closely related to B/Florida/4/2006 and mostly fell into their HA sequences of the B/Bagladesh/3333/07 clade.

2.2.8 **Global Surveillance**

Dr Tim Nguyen, WHO HQ, spoke of global surveillance during pandemics.

The importance and benefits of surveillance and information-sharing at the global level include vaccine sequence identification, informing updates for technical guidelines, communication with the public and media and information about the geographical spread of the disease and its characteristics in different settings.

Sources of surveillance include reporting from Member States and regional offices, the Global Influenza Surveillance Network (GISN/FluNet), information gathered from web and media screening, literature reviews and the “friend/acquaintance network”.

Global surveillance guidelines were formulated in 2007. These were in the process of being updated and field tested when the pandemic interrupted, allowing no time for this. To ameliorate this, interim guidelines were being used which require updating.

Surveillance assessment tools included IHR notifications, weekly summary report forms, case summary forms and FluNet. FluID has been designed to close the gap on any missing areas required to give an accurate analysis.

2.2.9 **Plenary 2 discussions and questions**

Discussion raised in relation to this session included questions regarding information about natural immunity to the influenza A (H1N1) virus and the percentage of people who may be protected without vaccine.

The following comments were made by different presenters:

1. Attack rates are currently unknown and, in terms of serological protection, very low levels exist within the general population. However, in some elderly populations, about 20% have low-level immunity to the virus.

2. The elderly group has about 40% immunity with cross-reactive antibody against influenza A (H1N1). This antibody is not simulated by seasonal vaccination i.e. seasonal influenza vaccine is not very effective for influenza A (H1N1).

3. About 2% of the elderly population (over 60 years old) had an antibody of more than 40. A majority of the population were susceptible to influenza A (H1N1), and seasonal vaccination cannot provide protective antibodies.

4. In Hong Kong (China), 2008 serum samples showed that about 33% of those over 60 years old have antibodies of more than 40. Some elderly people were polymerase chain reaction (PCR) positive. However, there were no outbreaks in nursing/elderly homes.

5. The China CDC has published a serological survey, and for those 60 years old and over, about 33% have a pre-existing antibody. Seasonal influenza vaccination seems to have minimal effect on increasing antibodies.

Questions were raised in relation to pregnant women and when it is safest to give the seasonal/influenza A (H1N1) vaccination. Presenters made the following comments:

1. Vaccination normally would be administered in the second or third trimester for seasonal influenza. Therefore it could be assumed that influenza A (H1N1) vaccination would be given then also.

2. In Europe, countries that have considered this issue have opted for the second or third trimester. As the probability of miscarriage is higher in the first trimester, people may make an association between miscarriage and vaccination.

Who to vaccinate is also an important question for countries, and an examination of the goals of vaccination strategy is required. Analysis suggests that the pandemic will hit the health sector the hardest, so health workers should be prioritized. If the health sector becomes too overwhelmed, people will be turned away from the hospital and die in the community, which must be avoided. Vaccine prioritization is an important issue that politicians will need to deal with.

Questions were raised in relation to how the elderly are prioritized for vaccination. The elderly are at a lower risk of infection than the rest of the population but are at greater risk of

complications if they do become infected. In some cases, the elderly would be included in vulnerable groups because of other coexisting conditions and be covered that way. In Australia, the average age of death from influenza A (H1N1) was 54 years old as opposed to 82 years old for seasonal influenza, which makes this a difficult question.

Questions were raised regarding qualitative data indicators and whether it is possible to establish the incidence of disease in specific age groups and populations such as health care workers. Unfortunately, qualitative data cannot provide this data but, WHO HQ is working with Western Pacific Regional Office to collect this information

2.2.10 **Plenary 3: NIC's roles in pandemic preparedness and response**

Dr Wenqing Zhang, WHO HQ spoke of NIC's roles during a pandemic and NIC's contingency plan.

NIC's roles during a pandemic include planning and coordination, situation monitoring and assessment, reducing the spread of the disease and communication. All activities should continue during higher phases unless replaced. NIC objectives include early detection of novel virus infections in humans, assisting in the decision to launch rapid containment, assisting WHO and national authorities in pandemic risk assessment and the development and update of vaccine viruses and diagnostics.

A successful NIC response to pandemics has to centre n teamwork with robust communication strategies in place to interconnect key stakeholders such as the ministries of health, national laboratory networks, WHO, WHO Collaborating Centres, NICs and other partners. After the pandemic, NICs need to rebuild capacity and prepare for the next wave since it is uncertain about how much time there will be to become sufficiently prepared.

NIC contingency plans need to be prepared well in advance to ensure effectiveness and continuity of function since a significant increase in the demand for services is to be expected during pandemics. Plan formulation includes assessment, identification of the resources that are needed (staff, laboratory and office space, where to transfer excess work, additional freezer space), training needs, rotating work plan (need backup staff ready and a plan to accommodate for long work hours), equipment (backup power source), stockpiling supplies (reagents, personal protective equipment (PPE) and antiviral drugs) and testing of strategies.

2.2.11 **Antiviral resistance**

Dr Aeron Hurt, WHO Collaborating Centre for Reference and Research on Influenza, Australia, gave an update on monitoring antiviral resistance.

Virtually 100% of current seasonal A (H1N1) viruses are oseltamivir-resistant. However, the number of seasonal A (H1N1) viruses circulating has decreased significantly since the emergence of influenza A (H1N1).

To date, large amounts of neuraminidase (NA) inhibitors have been used to treat influenza A (H1N1) infections. Encouragingly, only a small number of resistant cases have been detected with no evidence of further transmission. Influenza A (H1N1) and seasonal A (H3N2) are all resistant to adamantanes. Continued monitoring of influenza A (H1N1) viruses is essential, particularly in patients under treatment, and their contacts.

2.2.12 **WHO External Quality Assistance Programme (EQAP) for the detection of Influenza A by PCR**

Dr Wilina Lim, Public Health Laboratory Centre, Hong Kong (China), gave an update of EQAP.

The objectives of this programme are to monitor quality and standards of performance, facilitate information exchange, identify problems with assays and provide mechanisms to remedy any deficiencies revealed. Participants benefit by being able to compare performance, provide evidence of quality, minimize errors and identify training needs.

Problems identified through this programme include positive control not used appropriately, laboratory contamination, misinterpretation of results and primers and probes mismatch.

The responses of participants are indicated by region. There is evidence that the percentage of laboratories performing well has increased since panel 1 and the scores indicate that the Region is improving overall. Panel 6 is yet to be completed (by the end of August). However, so far, the Western Pacific Regional Office and the South-East Regional Office scored 100% for this panel.

2.2.13 **Western Pacific Regional Office**

Dr Aeron Hurt, WHO Collaborating Centre for Reference and Research on Influenza, Australia, spoke of the Western Pacific Regional Office's NIC database

In February 2007, the WHO Collaborating Centre in Melbourne, Australia, provided a copy of its database to Western Pacific Regional Office for modification for use regionally. A series of meetings followed until an adequate system was established and the database was ready for use. China, the Philippines and Viet Nam are using this database. These countries administer their own databases and have created their own lab-specific versions. If the Western Pacific Regional Office performs any upgrade these countries are informed and can implement the updates on their version by copying the code from the latest Western Pacific Regional Office version.

Participants are advised to contact the Western Pacific Regional Office if they would like to implement the database in their country. The Western Pacific Regional Office will provide initial support but cannot provide a database that specially suits in-country laboratories, so some IT support is required.

2.2.14 **Plenary 3 discussion and questions**

Comments were made in relation to NIC capacities. Small NICs may be overwhelmed by the roles and responsibilities expected of them. WHO recommendations should be discussed with NIC before they are finalized. Different NICs function at different levels. Therefore implementation of WHO recommendations will depend on local resources and will be the decision of national authorities. The procedure to formulate recommendations is to involve NICs as much as possible in the creation of documents and invite all representative NICs to be involved.

Comments were made regarding the confusion of the pandemic influenza A (H1N1) 2009 name. The pandemic was renamed “pandemic influenza A (H1N1) 2009” for technical purposes and in order to provide clarity to the public.

It was questioned as to whether the influenza A (H1N1) virus came from swine or humans originally. There was no evidence of human-to-swine infection, but there is a lot of scientific debate surrounding this.

WHO was asked whether the organization could provide vaccines to populations in need. WHO recognizes that most vaccine production sites are in Western countries and that the capacity to produce vaccines in lower income countries is very poor. As such, WHO was working to improve the vaccine supply and was negotiating with industry about technical transfer so that lower income countries can set up their own production sites. WHO is also setting aside a percentage of production capacity and making that percentage available to countries in need and is working on the price of vaccines.

WHO was also in discussion with donors about prepurchase and predonation of vaccine supplies to lower income countries. These issues will be discussed further at the next SAGE meeting. Everyone needs to be aware that, realistically, there will not be enough vaccine for all.

2.2.15 **Plenary 4: Updates on pandemic and avian influenza**

Dr Xu Xiyan, Centres for Disease Control and Prevention, United States of America, gave an update on pandemic influenza A (H1N1) 2009.

All pandemic influenza A (H1N1) 2009 viruses are antigenically similar to A/California/7/2009, expressing minor genetic variability. No evidence of reassortment with seasonal or H5N1 viruses was identified. These viruses are resistant to M2 blockers and sensitive to NI (oseltamivir and zanamavir). Of the oseltamivir-resistant viruses, the majority had been documented after treatment.

Vaccination with contemporary seasonal influenza vaccines, with or without an adjuvant, induces little or no cross-reactive antibody to the influenza A (H1N1) virus in any age group. Individuals over 30 years old are serologically “naïve”, while a proportion of older adults appear to have pre-existing, cross-reactive antibodies. The virus is transmissible by respiratory droplets in ferrets, but the level of transmissibility is lower than the level generally seen in seasonal influenza viruses. Further adaptation in mammals may be required to reach the high-transmissible phenotypes observed with seasonal H1N1 viruses.

Genetic and antigenic characterization of viruses, serologic assays, animal models and epidemiologic assessments are all critical components for public health risk assessment. Substantial consistency between laboratory and epidemiologic results suggest novel H1N1 may not be fully adapted to humans. Epidemiologic and virologic surveillance are important for identification of future changes in, antigenic characteristics, transmission characteristics, severity of disease and antiviral resistance.

Points reflected in the influenza A (H5N1) virology update included the unique characteristics of the H5N1 epizoonoses; the unprecedented number and variety of species affected (avian and mammalian); the unprecedented numbers of humans infected by the virus and the numbers of deaths; and the variety and significance of viral mutations with potential human health implications. Overall, the influenza A (H5N1) influenza viruses continue to evolve rapidly and continue to be an important risk to global public health.

2.2.16 **Vaccine development**

Dr Masato Tashiro, WHO Collaborating Centre for Reference and Research on Influenza, Japan, gave an update of pandemic H1N1 and H5N vaccine development.

Since 2004, several laboratories have been working on H5N1 vaccines and, to date, more than 20 clinical trials have been conducted. Issues with H5N1 vaccine include standardization of neutralizing test and harmonization of expression of antibody titers; correlation between serum Ab titers and protective effect; establishment of evaluation criteria for efficacy of vaccines in clinical trials; cross-protection against different clades/subclades as well as antigen-drifted viruses; children, pregnancy, the elderly and other high-risk groups; and prime-boost effects by different formulation vaccines.

The pandemic influenza A (H1N1) 2009 has caused a significant disease burden and social impact. The current recommendation for vaccine development for the pandemic influenza A (H1N1) 2009 is an A/California/7/2009-like virus. Issues surrounding this vaccine development and use include quality, efficacy, safety and clinical studies.

Global pandemic vaccine production capacity is required to increase to 4.5 billion by 2010. WHO has provided grants to six countries to establish pilot production of H5N1 vaccines and prepared an international stockpile. The pandemic vaccine baseline capacity is estimated at 94.5 million doses per week. The vaccination strategy for pandemic vaccines are based on SAGE recommendations published in July 2008 and is based on seasonal influenza policy.

2.2.18 **Countries' situational updates on human avian influenza**

Dr Ly Sovann, Ministry of Health, Cambodia, gave an update on his country.

Avian Influenza was first detected in birds in Cambodia in January 2004. It was detected in humans a year later. The majority of the eight cases of human (H5N1) have occurred in the southeast of Cambodia near the Viet Namese border. Human transmission of the virus mainly has come from contact with dead poultry. However two cases indicated no direct contact with poultry. Rapid response teams from all levels have been activated in response to the outbreaks.

2.2.19 **China**

Dr Shu Yuelong, Chinese National Influenza Centre, China, said that since 2003, China has detected 38 human cases of avian influenza, most of which were reported after 2005. The majority of these cases were detected in the southeast of China in young adults. The surveillance system was reviewed in 2007 in order to ensure optimal case detection.

2.2.20 **Viet Nam**

Dr Le Quynh Mai, National Institute of Hygiene and Epidemiology, Viet Nam, said the last reported cases of human avian influenza were in April 2009. To date, 16 cities and provinces have been affected by the virus and outbreaks continue to circulate in animals. The clades differ between the north (predominantly 2.3.4) and south (predominantly 1) of the country. Reasons for this are not presently indicated.

2.2.21 **Plenary 4 discussion and questions**

The question was raised as to what is likely to be seen next as the majority of people in certain populations have already been infected with the influenza A (H1N1) virus. As the optimum virus temperature drops, transmission is likely to increase along with susceptibility. Those born after 1947 are likely to have no protective antibodies to the virus while those born before 1947 currently have significant antibodies. Once the virus changes, they are likely to become more infected.

Although the influenza A (H1N1) virus is perceived to be less transmissible than seasonal influenza, the comment was made that in New Zealand this is contrary. Transmissibility studies resulted in 1.9 for influenza A (H1N1) and 1.3 for seasonal influenza. However, these results were presented from an animal model so may not be representative of the true picture for humans. In the United States of America, the second wave may produce different results, although this is unpredictable. In Australia, studies on influenza A (H1N1) indicate 1.5 transmissibility, which is similar to seasonal influenza. However, these types of results are population- and data-dependent.

Questions were raised as to whether there were any findings from the H5 vaccination study conducted in Japan last 2008. Two doses were required over a period of 2 1/2 months to gain sufficient protective antibodies. The voluntary study was extended to include 6000 medical staff, and no significant adverse effects were evident during the trial. Cross-reactive immunity was tested after the second dose and a wide effect was evident. The pandemic influenza A (H1N1) 2009 has currently delayed this trial.

2.2.22 **Plenary 5: Pandemic preparedness and response**

Dr Takeshi Kasai, Western Pacific Regional Office, presented the result of gap analysis and the framework of action required in coming five months.

The different stages of influenza spread to wide community transmission were described. This starts with sporadic cases and no clusters, leading to the beginning of clusters commonly indicated as school outbreaks. Increasing transmission within the community then follows. At this time more severe cases and some deaths begin to occur as the virus reaches larger numbers of vulnerable people. Extensive community transmission across a widespread geographical range is then evident. There are different public health responses required at each transmission stage. However, it is important to be planning well ahead with the aim of minimizing deaths at the pandemic stage.

To help facilitate the required public health response, WHO established a framework for action for the coming five months. A rapid assessment was conducted to identify gaps in pandemic preparedness in countries with the South-East Asia Region and the Western Pacific Region to inform them about the framework.

This rapid assessment was conducted through WHO country offices using a modified APSED framework. Analysis of the results indicated an urgent need for action and allowed WHO to focus this framework to incorporate required actions under the five components of command and planning, surveillance, health care system response, public health interventions and communications. As time was limited, there was an urgent need for countries and areas to focus their efforts to implement the required actions of each of these five components to prevent severe cases and deaths.

2.2.23 **Workshop in Fukuoka**

Dr Satoko Otsu, Western Pacific Regional Office, presented an outline of the workshop in Fukuoka, Japan, on pandemic preparedness and response in the Region.

The workshop on the revised WHO-Guidance on Pandemic Influenza Preparedness and Response was held in Fukuoka, Japan, from 3-6 March 2009. The objectives of the workshop were to review progress of pandemic preparedness in the Region, introduce the revised WHO guidance on pandemic influenza preparedness and response and identify future steps to update pandemic preparedness plans.

Significant progress has been made by each Member State in relation to pandemic preparedness. All Member States have formulated a national pandemic preparedness and response plan, and most have conducted exercises to validate these. Areas for improvement include integration of pandemic response into emergency management processes, making plans more operational, including the formulation of local level plans, strengthening risk communication strategies, incorporation of the "whole of society" approach and the establishment and strengthening of comprehensive influenza surveillance systems.

A two-tiered approach to pandemic preparedness is required to improve capacity. This consists of plan formulation and increasing readiness. Public health strategies regarding containment and mitigation always should be determined by a local risk assessment. It is critical to recognize when to change strategies from containment to mitigation. However, there are no strict cut-off indicators and appropriate response may be a mix of strategies, depending on the local risk assessment.

To date, 15 countries and areas in the Western Pacific Region have completed the APSED capacity assessment. Strengthening of countries' and areas' core capacities will continue through implementation of the APSED work plans. These work plans provide the foundation to prepare for and respond to an influenza pandemic and other infectious diseases. Member States' pandemic preparedness and response should be accelerated by prioritization of key areas to be strengthened.

2.2.24 **Public health measures in mitigating pandemic (H1N1)**

Dr Li Ailan, Western Pacific Regional Office, commented on mitigating the impact of pandemic (H1N1) and the options for public health measures.

The goals of public health interventions are to delay the outbreak spread and reduce morbidity and mortality by reducing the number of cases. Public health interventions include individual and household measures (such as PPE use of masks in the community), societal measures, including social distancing (such as suspension of classes and child care programs) and measures at international borders (such as health declarations and temperature screening).

The local social impact, the severity and potential impact of any pandemic will affect the public's acceptance and compliance with public health measures. Aggressive measures may not be socially acceptable if the influenza A (H1N1) virus is generally perceived as mild in most cases. It is not possible or feasible to set gold standards for public health interventions. Instead, WHO has formulated an option paper that countries can consider and choose measures from based on assessment of their local situations. In addition, public health measures should be evidence-based whenever possible and countries should balance the benefits of measures against the costs and potential consequences.

An annual assessment of pandemic preparedness was conducted in May to June 2009 using the Western Pacific Regional Office and CDC Joint Assessment Tool. A supplementary questionnaire on public health measures was added to this readiness survey. Questions asked of Member States included whether certain public health measures were included in national response plans, consideration for applying certain measures and what triggered starting and stopping the public health interventions. The questionnaire was distributed to collect data from 17 countries and areas. A good response was indicated, with 15 countries and areas (88%) taking part.

Based on the risk assessment, most countries with community transmission have shifted from containment efforts to mitigation strategies. Public health interventions have been dynamic

in the Region, with most countries and areas implementing relatively aggressive border measures, including passenger screenings, personal hygiene behaviour interventions and school closures at the early stage of outbreaks. Available information indicated some public health measures have helped slow the spread of the virus. However, there is a need for continual planning, monitoring and evidence provision of public health interventions

2.2.25 **Monitoring and Evaluation**

Ms Ann Moen, National Centre on Immunization and Respiratory Diseases, Centres for Disease Control and Prevention, United States of America on the joint Western Pacific Regional Office and CDC assessment for influenza pandemic preparedness and response.

The monitoring and evaluation tool is a combination of the format and content of the CDC tool and pandemic preparedness components. Some further modifications were required to include specific APSED and IHR capacities. The main purposes of the project were to document core capabilities at a single point in time, determine progress toward enhanced preparedness for pandemics and core capacity for APSED over time, demonstrate accountability for use of resources to donors or stakeholders, guide continuing investments for enhancing core capacities for IHR and pandemic influenza, and inform strategic and program planning.

Key results included:

1) evidence of continued strengthening of the response systems by formalizing surveillance;

2) the need for Member States to strengthen local government pandemic preparedness plans;

3) the need for continual support to Member States to review and distribute their standard operating procedures (SOPs) for collection, storage and transport within the country;

4) requirements for the provision of resources and training for infection control; and

5) the benefits of using lessons learned to improve health sector pandemic response planning and community mitigation measures.

Each country needs to use its scores for its own planning and should continue to improve readiness for pandemics and strengthen core capacity in all five programme areas of APSED. Exercises to test and validate the areas needing improvement should be conducted regulary. The use of lessons learned regarding country strengths and weaknesses during the current pandemic influenza (H1N1) 2009 are a valuable tool to target future improvements. Countries and areas should plan to reassess their core capacities for APSED and pandemic preparedness in 2010.

2.2.26 **Plenary 5 discussion and questions**

A question was raised in relation to country preparation for the next influenza wave. The framework has been established to help countries prepare for the increase in cases that are likely to be seen and needs to be adjusted to the specific country context.

Country capacity for event-based surveillance was questioned in relation to early detection of outbreaks. Event-based surveillance is important for the early detection of cases. Some

countries do not have the capacity for this type of surveillance. However, the Philippines and Cambodia provide examples of where this system is working well. The Lao People's Democratic Republic has finished piloting this system and Mongolia is in the early stages of implementation. Evaluation of the cost effectiveness of these systems is required.

The question was raised as to whether school closure was still effective during the early stage of the pandemic. Data from Japan indicates encouraging results. However, in Japan the media also frightened the public, so people stayed home, avoiding transmission in other venues. If school closures had not been implemented in Kobe, Japanese transmission would have been a lot more widespread.

A question was asked why there was no increase in cases once schools reopened in Japan. One reason for this may be that Japan took a very aggressive approach in intervention. For example, all schools were closed and schools with cases were closed longer. This resulted in more than 3 000 schools being closed for one to two weeks. During that time, an increase in cases in siblings was seen, but transmission did not go beyond this. After schools were reopened, there was no outbreak for some time. However, the outbreak reoccurred one to two months later, providing evidence that school closure bought time.

2.2.27 **Plenary 6: Response to pandemic (H1N1) 2009 – country experiences**

On the afternoon of the second day, a representative from each country was given the opportunity to present his or her experiences in the surveillance of and response to pandemic influenza (H1N1) 2009. Section 4.1 Conclusions include comments made by country participants.

3. CONCLUSIONS

The main conclusions of the meeting were as follows:

3.1 General

3.1.1 **Comments**

1) Countries are following a similar path, sporadic imported cases are seen first, followed by local transmission and then widespread community transmission

2) The appearance of severe cases and deaths are seen in several countries

3) Different responses are required for different stages, involving the shift from containment to mitigation measures. The decision to shift measures is difficult and should be based on a local risk assessment

4) Epidemiological patterns remain unpredictable; outbreaks are occurring in noninfluenza seasons, sudden increases and decreases are occurring with unknown triggers

5) The majority of cases are self-limiting, but some severe cases such as those from high-risk groups are occurring

6) The occurrence of seasonal influenza and other viral diseases at the same time as influenza A (H1N1) outbreaks can confuse the clinical picture in some countries

7) Coordinated and strengthened regional information-sharing is needed

8) Need expressed to formulate contingency and surge plans for NICs.

3.1.2 **Surveillance and laboratory**

1) Improved surveillance capacity in past years (laboratory capacity, sentinel surveillance systems) has been fully utilized for influenza A (H1N1) pandemic response

2) Surveillance is important to monitor changes in antigenicity, transmission, disease severity and antiviral resistance

3) Novel H1N1 viruses may evolve further

4) H5N1 viruses continue to evolve rapidly and remain an important risk to global public health

5) Changing surveillance strategies at each stage is required. Sampling, testing and case-counting is necessary for early detection, description, assessment and monitoring. However, this has not always been conducted in a timely manner, because NIC laboratories are overwhelmed with samples because of insufficient surge capacity and in later stages, case-counting is unsustainable and uninformative.

3.1.3 **Public health interventions**

1) Different responses are required for different stages of the pandemic. The decision to shift from containment to mitigation is difficult in some countries due to political and technical issues. This shift in response measures should be based on a local risk assessment

2) Different policies for public health interventions, especially school closures and border measures, are applied within countries. A lack of concrete evidence of the usefulness of these measures is a challenge. However, well-managed school closures may have some effect in delaying the spread of the virus

3) Potential benefits of public health interventions should be carefully balanced against potentially significant social and economic costs. Decisions should be based on the assessed situation and local context since there is no standard combination of measures that will fit all countries – "one size does not fit all"

4) Any public health measures implemented must be communicated to the public and other stakeholders

5) There is a need for continuous planning, monitoring and evidence of public health interventions.

3.1.4 **Communication**

1) Governments have been active in disseminating public health information. The importance of communication has been well appreciated. Use of media briefings, hotline implementation and information, education and communication (IEC) material development and distribution has been continuing.

2) Rapidly changing situations are difficult to communicate, especially factors such as continually updating and changing guidelines, strategies, policies and unknown virus characteristics

3) Issues and challenges include communications being dependent on established trust with target groups, confusing messages to public through media reports, updated information not reaching target groups (e.g. health care professionals, vulnerable populations) and communication with other government departments, sub-national levels and the private sector.

3.1.5 **Health Sector Response**

1) Many countries have considered hospital preparedness a priority. For example, isolation facilities have been identified or are available. However, little surge capacity is available. For example, management of severe cases requires the availability of intensive care unit beds and respirators, which often are limited.

2) Infection control is not fully addressed in all areas. Both adequate training and sufficient availability of PPE resources are required.

3) Case management problems have included insufficient antiviral stockpiles and delayed treatment with antivirals.

4) Older people have been staying in hospital longer than younger people have.

3.1.6 **Command**

1) A high-level command system is in place in most countries involving interministerial and multisectoral coordination.

2) Responses have been based on existing national plans, which were developed with a pandemic caused by H5N1 in mind. Pandemic plans should be adaptable and flexible. As such there is a need to review and adapt existing national plans for the pandemic influenza A (H1N1) 2009 and re-examine planning assumptions.

3) Some issues for coordination include private sector involvement and communications.

3.2 Recommendations

3.2.1 **General**

Pandemic preparedness should continue even when in pandemic response. Framework for action can be used to guide country preparedness for community transmission.

3.2.2 **Surveillance**

Countries should continue to strengthen comprehensive national influenza surveillance systems, including surveillance of influenza diseases, viruses, severe acute respiratory infection (SARI) and outbreak events:

1) particular attention on SARI surveillance and event-based surveillance;

2) countries should adjust surveillance strategies based on the different stages of the pandemic;

3) existing systems (such as sentinel surveillance) should be maintained and fully utilized for pandemic surveillance;

4) all surveillance information (including historical data) should be utilized to make a risk assessment;

5) serological survey should be encouraged; and

6) integration with animal surveillance.

3.2.3 **Laboratory**

All NICs should have a contingency plan to manage a possible surge of pandemic activities (e.g. next pandemic wave):

(1) WHO pandemic contingency planning checklists for NICs can be used to guide this process, and

(2) acceptability.

Based on technical review and consultation, WHO should consider modification of its guidance on biosafety requirements; for example, from BSL-3 to BSL-2 for handling pandemic A (H1N1) 2009 virus.

3.2.4 **Public health interventions**

Countries with community transmission should plan for and shift from containment to mitigation strategies in a timely manner based on risk assessment.

Country experiences and data related to key public health measures (particularly school closure) in response to pandemic A (H1N1) 2009 should be collected and analysed.

3.2.5 **Regional information-sharing mechanisms**

A regional influenza information-sharing mechanism is needed and should be established and strengthened (e.g. regional influenza bulletin). The technical details of such a mechanism should be explored through consultation with the experts in the Region.

(1) countries are encouraged to contribute to such a collaborative regional mechanism for the benefit of all countries; and

(2) a review article summarizing national influenza surveillance systems and outcomes in the Asia Pacific could benefit regional and global public health communities and should be considered.

ANNEX 1

PROGRAMME OF ACTIVITIES

Day 1 – Tuesday, 18 August 2009

08:00-08:30 Registration

Opening session

08:30-08:45 Welcome and opening remarks by the Regional Director
- *Dr Takeshi Kasai (on behalf of Dr Shin Young-soo, WHO/WPRO)*

08:45-09:00 Welcome and opening remarks
- *Dr Xiao Donglou, Ministry of Health, China*

09:00-09:15 Welcome and opening remarks
- *Dr Wang Yu, China Centers for Disease Control and Prevention, China*

09:15-09:30 Welcome and opening remarks
- *Dr Li Dexin, China National Institute for Viral Disease Control and Prevention*

09:30-09:45 Overview of the meeting objectives, expected outcomes and agenda

09:45-10:00 Self introduction and administrative announcement

10:00-10:30 *Group photo and Coffee break*

Plenary One: Regional and Global Updates

10:30-11:00 Regional situation and response update on the new influenza A(H1N1) 2009
- *Dr Takeshi Kasai, WHO/WPRO*

11:00-11:30 Update of global situation and response to pandemic influenza A(H1N1) 2009
- *Dr Wenqing Zhang, WHO/HQ*

11:30-12:00 WPRO regional activities report and preparation for the upcoming influenza season
- *Dr Weigong Zhou, CDC*

12:00-12:15 Question and Answer and round table discussions

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12:15-13:30 *Lunch break*

Plenary Two: Influenza Surveillance (Seasonal and Pandemic)

13:30-13:50 Influenza surveillance in China
- *Dr Shu Yuelong, CNIC/CCDC, China*

13:50-14:10 Update on surveillance findings in 2008-2009 season in the Southern Hemisphere
- *Dr Ian Barr, WHO Collaborating Centre,VIDRL, Australia*

14:10-14:30 Update on surveillance findings in 2008-2009 season in the Northern Hemisphere
- *Dr Takato Odagiri, WHO Collaborating Centre, NIID, Japan*

14:30-14:50 WHO Guidelines on Pandemic Surveillance and FluID
- *Dr Tim Nguyen, WHO/HQ*

14:50-15:10 Question and Answer and round table discussion

15:10-15:30 *Coffee Break*

Plenary Three: NIC's roles in pandemic preparedness and response

15:30-16:00 NIC's role during Pandemic and NIC Contingency Plan
- *Dr Wenqing Zhang, WHO/HQ*

16:00-16:20 Update on monitoring antiviral resistance
- *Dr Aeron Hurt, WHO Collaborating Centre, VIDRL, Melbourne*

16:20-16:40 Update on WHO EQAP
- *Dr Wilina Lim, CHP, China-Hong Kong*

16:40-17:20 Update on the WPRO NIC Database Development
- *Dr Aeron Hurt, WHO Collaborating Centre, VIDRL, Melbourne*

17:20-17:40 Question and Answer and round table discussion

17:40-19:00 *WHO Welcome Reception*

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Day 2 – Wednesday, 19 August 2009

Plenary Four: Pandemic and Avian Influenza Updates

08:30-08:50	Update of the pandemic H1N1 and H5N1 virology - *Dr Xu Xiyan, WHO Collaborating Centre, USCDC*
08:50-09:10	Update of pandemic H1N1 and H5N1 vaccine development - *Dr Masato Tashiro, WHO CC, NIID, Japan*
09:10-09:40	Countries' updates on Human AI situation - *Cambodia, China, Viet Nam (10 minutes each)*
09:40-10:10	Question and Answer and round table discussions
10:10-10:30	*Coffee break*

Plenary Five: Pandemic Preparedness and Response

10:30-10:50	Framework for action in response to community level transmission - *Dr Takeshi Kasai, WHO/WPRO*
10:50-11:10	Outline of Fukuoka meeting on pandemic preparedness and response in the Region - *Dr Satoko Otsu, WHO/WPRO*
11:10-11:30	Options of public health measures for mitigating the impact of the new influenza - *Dr Li Ailan, WHO/WPRO*
11:30-11:50	Monitoring and Evaluation: Joint WPRO – USCDC assessment - *Ms Ann Moen, WHO CC, USCDC*
11:50 -12:10	Question and Answer and round table discussions
12:10-13:30	*Lunch break*

Plenary Six: Response to Pandemic (H1N1) 2009 – Country's experience

13:30-15:15	5 minutes presentation from each country/area x 21 countries/areas
15:15-15:45	Question and Answer and round table discussions
15:45-16:00	*Coffee break*

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16:00-18:30	Visit New China CDC/China NIC
18:30	*China CDC Welcome reception*

Day 3 – Thursday, 20 August 2009

Group Discussion: Pandemic Preparedness and Response

08:30-11:30	Success, challenges, lessons learnt in pandemic surveillance, response to the initial outbreaks and mitigating the impact of community transmission
	Areas for strengthening in pandemic surveillance and response
	Areas of focus for NIC's preparedness and response
	Priority areas of action
10:10-10:30	*Coffee break*

Group Discussion: Pandemic Preparedness and Response (continued)

12:00-13:30	*Lunch break*

Closing session

13:30-1510	Group feedback presentations (4 groups, 15 mins presentation + 10 mins Question and Answer)
15:10–15:40	*Coffee break*
15:40–16:30	Conclusion and Recommendation
16:30–16:45	Closing remarks from the Ministry of Health, China CDC and WHO
17:00	Leave Yuyang Hotel for the Crown Plaza Hotel
18:30	The Lancet Dinner

ANNEX 2

PROVISIONAL LIST OF PARTICIPANTS, TEMPORARY ADVISERS, OBSERVERS AND SECRETARIAT

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ANNEX 3

Address by Dr Takeshi Kasai, Regional Adviser,
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WHO Regional Office for the Western Pacific
On behalf of Dr Young-Soo Shin,
WHO Regional Director for the Western Pacific

THIRD MEETING OF THE NATIONAL INFLUENZA CENTRES
IN THE WESTERN PACIFIC
Beijing, China
18-21 August 2009

HONOURABLE DIRECTOR GENERALS,

PARTNER REPRESENTATIVES,

DISTINGUISHED PARTICIPANTS,

COLLEAGUES, LADIES AND GENTLEMEN,

I am pleased to welcome you all to the Third Meeting of the National Influenza Centres in the Western Pacific and South-East Asia Regions. I wish to convey my appreciation to the Government of China and the Chinese Centre for Disease Control and Prevention for its continuing financial support to this meeting. I sincerely regret not being able to join you this week but rest assured of my full support to you and the people of the Asia Pacific region. I greatly appreciate the work that you have done on influenza surveillance and control. I sincerely admire and acknowledge the tireless work that you are now doing in response to pandemic (H1N1) 2009.

To date, a majority of the world's countries have confirmed cases of influenza A(H1N1), many are experiencing community transmission and many more will inevitably progress to this stage. By the end of the year, we expect all countries to experience community transmission.

As we all know, within countries, the number of cases of influenza A(H1N1) is still increasing substantially, even in countries that have already been affected for some time. In most countries, we expect to see a doubling of case numbers every three to four days for two months until peak transmission is reached. At a certain point, it is likely that there will be an explosion in case numbers.

People with underlying medical conditions, pregnant women and maybe children under the age of two will suffer the most. The developing world will face bigger challenges. As this region contains many developing countries, high-risk groups within these populations will be inevitably affected the most. Health services will be under severe strain and the challenge for them, and for us, is to minimize the number of infections, and to prevent unnecessary deaths.

Those of us in this part of the world remember only too well the events of a few years ago when SARS, or severe acute respiratory syndrome, claimed nearly 900 lives and brought international travel and trade to a virtual standstill. We learnt many lessons from the experience

of those days. One of the most important lessons was the need to urgently share information about outbreaks of usual infectious diseases. This meeting in which will be sharing our experiences, is a vital part of that process.

After SARS, and in response to the emergence of avian influenza, Member States in Asia quickly went to work to further strengthen their alert and response systems.

One result of that process was the Asia Pacific Strategy for Emerging Diseases, or APSED as it is better known. This strategy serves as a road map for countries and areas in the Region to strengthen both national and regional core capacities required to deal with emerging diseases. APSED is a vital tool in our fight against this new pathogen and has already proved its worth in battle against avian influenza.

Over the past four to five years, countries in the Western Pacific and South-East Asia have been working very hard collectively to invest and strengthen the fundamental public health systems and capacities for managing emerging disease threats. Countries have developed their pandemic influenza plans. Most countries have conducted various exercise to validate them

Under the guidance of APSED, we have made significant progress in strengthening our capacities, hence we have improved our readiness.

The laboratory capacity of National Influenza Centres has been improved tremendously. External quality assurance results show that most of the National Influenza Centres have the capacity to produce quality diagnosis using Polymerase Chain Reaction. All of the National Influenza Centres in the two regions have made great contributions to the response to pandemic (H1N1) 2009.

The newly updated WHO guidance on Pandemic Influenza preparedness and response has been introduced to our Member States at the Fukuoka meeting held from 3 to 6 March. The Western Pacific Region was the first to explain the content of the new guidelines. Our Member States have been encouraged to review and revise their plans then.

The current evolving influenza A (H1N1) is now a real case to test whether and how our Member States in the Asia Pacific region are able to manage a public health emergency.

I would like to take this opportunity to express my highest gratitude to our Member States for efforts undertaken to strengthen surveillance and for timely reporting of cases. Early detection, rapid sharing of information and response to cases quickly are vital for the response to possible escalation.

Our understanding of the disease continues to evolve as new countries become affected, as community level spread extends in already affected countries, and as information is shared globally.

Many of you attended the previous two meetings. These meetings provided opportunities for National Influenza Centres, ministry of health officials, WHO collaborating centres and reference laboratories, and WHO to share experiences, successes and challenges that we all face. During the 1st Meeting of the National Influenza Centres in the Western Pacific and South-East Asia Regions which was held in Melbourne, Australia, in May 2007, a biregional, four-year workplan

for strengthening national influenza surveillance capacity was developed and endorsed. The workplan was subsequently endorsed by the biregional Technical Advisory Group as a sub-workplan of Asia Pacific Strategy for Emerging Diseases or APSED. The workplan requires

WHO to take action in strengthening the capacity of national influenza centres. The 2nd meeting was held in Tokyo, Japan, in April 2008. Two important guidelines, namely, "A Practical Guide for Designing and Conducting Influenza Disease Burden Studies" were reviewed and commented on during the meeting. The guidelines were published subsequently. "A laboratory database for National Influenza Centres was also presented during the meeting.

I would like to take this opportunity to emphasize again the critical role of the National Influenza Centres in the Western Pacific and the South-East Asia Regions in global influenza surveillance and response, in particular during the current pandemic (H1N1) 2009 and in any future pandemics we may face.

I would also like to take this opportunity to reemphasize the importance of specimen sharing in the control of the current and future influenza pandemics. As you all understand, emerging infectious diseases are of global concern. Consequently, control of outbreaks must be a global effort, with collaboration and cooperation from every country in the world. Rapid sharing of all animal and human influenza viruses is essential for assessing the current pandemic and subsequent risk of pandemic, producing up-to-date diagnostic tests, ensuring the effectiveness of antiviral drugs, identifying antiviral resistance and hastening the development of vaccines.

In closing, I would like to thank again the Government of China, through Deputy Director General Dr Xiao, and the Chinese Centre for Disease Control and Prevention, through its Director General Dr Wang, for hosting this meeting. I would also like to thank the WHO Collaborating Centres for Reference and Research on Influenza in the Victorian Infectious Diseases Reference Laboratory in Australia, in the National Institutes for Infectious Diseases of Japan, and in the US Centres for Disease Control and Prevention. I also want to thank the WHO H5 Reference Laboratory in the Centre Health Protection of Hong Kong (China) for their support of this meeting, as well as all the participants for taking part in this very important meeting. I would also like to take this opportunity to thank the individuals who have worked so hard in organizing this event. Your continued support will enable all the countries of the Asia Pacific region to accomplish their goals.

I wish you all a successful meeting and an enjoyable stay in Beijing.