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Avian Influenza and Pandemic Preparedness

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1. Introduction

Emerging infectious diseases are among the leading public health concerns in the South-East Asia Region. Of immediate concern is avian influenza which has the potential to cause a pandemic in the near future. Outbreaks of emerging infectious diseases occur frequently in Asia. In recent years, countries in the Region have reported SARS and rickettsiosis in 2003 as well as highly pathogenic avian influenza and Nipah virus in 2004. Apart from these, outbreaks of dengue fever, cholera, Japanese encephalitis, leptospirosis, malaria, cholera and viral hepatitis have been occurring with regular periodicity. The experience with SARS and other emerging diseases has shown that with the increasing speed and growing volume of international travel and trade the risks of trans-boundary disease outbreaks is high. Outbreaks cause significant health risks and a huge loss to the economy.

In view of these challenges, it is imperative for countries to strengthen their capacity in the areas of forecasting, early recognition, prompt investigation, confirmation and effective containment of outbreaks, in particular avian influenza. This needs to be supported with improving capacity to track, assess and verify rumours of outbreaks. Factors that delay containment measures which in turn contribute to lengthening the duration and increasing the risk of spread of infection include: inadequate epidemic and pandemic preparedness and response planning; weak surveillance systems to detect early and investigate an outbreak; and inadequate laboratory capacity to confirm the aetiology of the disease.

Hence, strengthening epidemic preparedness and response planning, particularly for an influenza pandemic, and networking of public health institutions within the Region to improve capacity for early detection, confirmation and control of emerging diseases is essential. The efficient implementation of the revised International Health Regulations (IHR 2005) requires, apart from several other activities, strengthening of core competence for early warning and response, and public health laboratories

in Member States. The proposed activity will help strengthen epidemic preparedness planning and networking of public health institutions within the Region and contribute to improving national and regional capacity for implementation of IHR(2005).

The Asia Pacific Strategy for Emerging Diseases is a bi-regional initiative based on the regional vision document for combating emerging diseases. It identifies key strategies including improving core capacities in surveillance and laboratory, research, risk communication and collaboration. Thus, the mechanisms and the next steps for implementation of this strategy shall be discussed in the context of avian influenza and influenza pandemic. Likewise, there is a need to identify mechanisms for boosting capacity development for implementation, particularly on how to scale-up the Field Epidemiology Training Programmes (FETP) in India and Thailand, and to have new initiatives in other countries, to benefit the Region as a whole.

Avian influenza is of particular concern because of the potential for the H5N1 virus to trigger a human influenza pandemic on a massive scale unless it is controlled. The current outbreak among poultry is unprecedented and the virus is becoming increasingly pathogenic. The host range of the virus has expanded from migratory birds to domestic birds and other species which increases the likelihood of transmission to humans. Although the number of human cases is currently 130, the case fatality rate is high (67 deaths, CFR: 52%). In addition, the risk factors for human infection are not fully understood; the major risk is in domestic settings where high risk human behaviour exposing people to animal disease, continues as do unhygienic animal husbandary practices.

In view of this, a regional meeting was organized in Bangkok from 21 to 24 November 2005 to discuss the control of emerging diseases in the context of avian influenza outbreak in the Region. The specific objectives of the meeting were as follows:

- (1) To review the status of avian influenza pandemic preparedness planning and discuss the follow-up at national and regional level
- (2) To formulate a mechanism to establish a network of public health institutions in South-East Asia Region

- (3) To share experiences related to the field epidemiology training programme (FETP) in the Region and identify steps for its expansion in the countries as a part of national capacity building
- (4) To discuss mechanisms for implementation of the Asia Pacific Strategy for Emerging Diseases.

The meeting was attended by global, regional and national experts and senior epidemiologists and laboratory experts from all 11 Member countries as well as technical staff from WHO Representative's Office along with, WHO staff from WPRO, SEARO and FAO.

The programme of work along with presentations, discussions and working groups focussing on several areas is listed in Annex 2.

Dr Ye Myint from Myanmar was nominated as chair, Dr Mehendra Bahadur Bista from Nepal as co-chair and Dr S Venkatesh from India as rapporteur of the meeting.

2. Inaugural session

The four-day meeting was inaugurated by the Regional Director, Dr Samlee Pliangbangchang. In his address, Dr Samlee stressed the fact that Asian countries have been at the epicentre of emerging infectious diseases, and especially the current Avian Influenza epidemic. These events are particularly worrying because they have a massive impact not only on health but also on the socioeconomic situation. The challenge is how to prevent and control avian influenza outbreaks successfully, in both animals and humans. An influenza pandemic would be a public health emergency that is inevitable but the timing and extent is still uncertain.

The Regional Director outlined the strategies needed to cope with a pandemic and urged Member States to develop comprehensive, multisectoral plans with political leadership and support at the highest level. Although National Pandemic Preparedness Plans exist in every country, they require further review, refinement, and updating; WHO will support countries in achieving this. Dr Samlee also outlined the importance of collaborations and partnerships and stressed the need for enforcement of the IHR and implementation of the Asia Pacific Strategy for Emerging Diseases in this regard. Networking of public health institutions and the

scaling up of FETP programmes in the Region were important elements of strengthening capacity to respond to the challenge of emerging infectious diseases in the Region, he added.

3. Overview of avian influenza situation

3.1 Global overview of avian influenza, pandemic preparedness and response

Although influenza pandemics are rare and their timing and severity are unpredictable, they have always occurred. We are closer to the next one than anytime since 1968 but we still have a window of opportunity to prepare ourselves. The purpose of national preparedness is to reduce death, disease, as well as social and economic disruption. The emergence of a novel influenza virus to which there is no human immunity could result in a pandemic affecting 30% of the global population. The current situation of avian influenza in Asia has resulted in the culling of over 150 million chickens and ducks because of the high level of contagion for poultry. Even though it is rarely transmitted to humans, the growing spread among animals makes it likely that human cases will continue to occur. A national pandemic is a dilemma for policy makers in terms of unknown timing and severity, prioritization, funding etc, especially in resource-poor settings. WHO has prepared several tools to assist Member countries with pandemic planning including guidelines for a pandemic plan, a checklist and other documentation on recommended strategic actions to be taken. Influenza pandemics cause global health emergencies and it is in everyone's interest to be prepared.

3.2 FAO/OIE strategy for the control of avian influenza in animals in Asia

The aim of the OIE/FAO strategy is to tackle the disease at source. There is an emerging pattern indicating that livestock production systems, virus eco-epidemiology and human health risk are inter-linked and contribute to an influenza pandemic. FAO has a global strategy for control of highly pathogenic avian influenza (HPAI), a disease which is zoonotic and transboundary in nature. Since HPAI is endemic in several countries of Asia

in multiple species, total eradication is unlikely, leaving a reservoir in animals. It has been shown to cause human disease, impact livelihood, and threaten regional and international trade. The strategy and implementation framework highlight Asia as a priority and has an element of phasing and networking, resulting in information exchange and concerted action. Major constraints are inexperience, inadequate depth in veterinary services, the endemic nature of the disease, poor production biosecurity, lack of data on disease impact, need for long-term regional coordination, and, most importantly, inadequate resources.

The objectives of the strategy covers three levels. At country level: to develop strategies for each country, prevent introduction of HPAI in risk countries, improve epidemiological information (including source and transmission dynamics), prepare contingency and emergency preparedness plans, develop economic and policy frameworks for reform, and improve long-term capacity in all these areas. At regional level: institutionalized and inter-sectoral coordination; programme management; regional capacity building in diagnosis, surveillance and epidemiology, policy and socio-economic impact assessment; public awareness; research and development; standardization; disease information sharing; regulatory frameworks for the management of animal movement; and adherence to OIE guidelines to facilitate regional trade. At international level: strengthen partnership among international organizations (FAO, OIE and WHO); provide analytical support and coordination of the subregional networks; develop the Global Early Warning System (GLEWS); coordinate research needs and evaluation; provide a global vision for HPAI control; and to mobilize and allocate resources through active donor liaison and advocacy. Besides policy and regulatory issues, capacity building is a key area of focus so that the following outcomes can be expected: HPAI spread in humans and poultry will be contained; HPAI incidence in poultry will be progressively reduced; progressive HPAI eradication in compartments and zones; prevention of establishment of HPAI in non-infected countries; and emergency preparedness plans for all countries in Asia. The impact could thus be felt in the following ways: global pandemic of HPAI averted; livelihoods of over 500 million poor smallholder farmers in Asia safeguarded; and improved market opportunities for poultry producers at all economic levels.

3.3 Regional situation of avian influenza and national pandemic preparedness

The current situation of avian influenza outbreaks in poultry is evolving rapidly in Asia. Human cases have also occurred in the Asia Pacific Region, namely in Thailand, Indonesia, Vietnam, and Cambodia. As of 18 November 2005 there were 130 cases and 67 deaths with two new cases (one death) in China. Member countries in the Region are finalizing their national pandemic preparedness plans, strengthening multi-sectoral involvement and coordination; establishing programme management structures; stockpiling antivirals and other supplies; building capacity of healthcare workers and strengthening mechanisms for inter-country and inter-regional collaboration. At the Regional Office, ongoing activities include: advocacy and partnership building both within departments and with regional and international partners; resource mobilization; information exchange and sharing; and technical and operational support including country missions, development of tools and guidelines, training courses, particularly to strengthen laboratory services; assessment of regional capacity for manufacture of vaccines and antivirals and stockpiling of the latter; and establishment of regional sub-units in Bangkok and Delhi. The current status of national pandemic plans is given below. Pending issues include providing support to countries for full implementation of national plans; strengthening of public health infrastructure, especially surveillance and laboratories; collaboration and coordination among various sectors; and enhancing access to antivirals and to pandemic influenza vaccines when available. A regional pandemic preparedness plan has been developed which outlines a detailed workplan with timeline and budget. All countries have a draft plan which would be revised in the light of new evidence and on the basis of further developments in implementation.

3.4 Latest developments on antivirals and vaccines in the context of avian influenza/influenza pandemic

More important than antivirals and vaccines is a strong surveillance and response network for early detection. Vaccine production and access is limited but the situation can be improved, particularly through research and development. WHO has a rapid response stockpile of antivirals (3 million doses donated by Roche by mid-2006) with a goal to prevent further spread from source of virus. This would be feasible only if there is early

detection with moderate virus transmissibility and is additional containment measures (movement restrictions, compliance) can be put into place. National stockpiles are available mostly in about 40 developed countries. The major issue is limited production capacity and affordability but these problems can be solved.

The goal for pandemic vaccines is to have equitable and timely access through early initiation of vaccine production built upon existing production capacity. With the current global production capacity, the most realistic scenario is that 900 million doses could be produced in an eight month period. Antigen sparing research is on-going as are H5N1 trials. WHO is ready to support increasing seasonal human influenza vaccination coverage in both developed and developing countries which would go a long way in increasing global production capacity. For the latter, support would involve development of a national vaccination policy including comparative costs, training national regulators, and exploring possibilities for technology transfer. For shortening the pandemic vaccine gap: in the short-term this would entail increasing production capacity and early initiation of vaccine production; and in the long-term, to push the R&D agenda for both pandemic and seasonal influenza vaccine.

4. Responding to avian influenza and pandemic preparedness plans

4.1 SEARO Experience in responding to AI

All Member countries in the South-East Asia Region have draft national pandemic preparedness plans. Many, however, need refinement and updating before they can be fully implemented. All countries represented at the meeting presented the major elements of their plans which included the following key strategies: enhancement of surveillance and early warning for avian influenza in both animals and humans, including laboratory capacities and facilities; planning, inter-sectoral coordination and programme management structure for responding to avian influenza and a pandemic; health systems responses including antivirals, vaccines, personal protective equipment (PPE), basic hygiene and infection control; prevention and control using public health interventions; and risk communication and IEC-related issues.

Each country also highlighted the specific challenges and gaps faced by them, as follows:

Bangladesh: Lack of funds, paucity of laboratories with expertise, need for training of personnel at different levels, need to strengthen intersectoral collaboration, and to mobilize regional and international support.

Bhutan: Lack of prior experience with HPAI; need to develop National Influenza Pandemic Preparedness Plans addressing issues of all stakeholders, no national expertise on HPAI; need to strengthen areas of diagnostics, human resources and financing.

DPR Korea: Poor laboratory capacity, lack of equipment, reagents and limited human resources for development and production of AI vaccine, constraints with preparedness for treatment and isolation of patients, lack of PPE.

India: Need to strengthen surveillance network and laboratories hospital surge capacity, capacity building and resource mobilization, IHR, media reporting and management, risk communication.

Indonesia: Different missions of Ministry of Health and Ministry of Agriculture; uncontrolled backyard farming; very weak early warning detection (no workers at grass root/village level); and very limited funds.

Maldives: Lack of veterinarian and animal sector staff, lack of trained laboratory staff for specimen collection and testing as well as lack of reagents; logistics for isolation facilities; inter-atoll transport; social distancing, especially in Male; human and financial resources; and protocols for action (lab guidelines, clinical management).

Myanmar: Limited resources.

Nepal: Developing an influenza component in EWARS [early warning and response surveillance system]; strengthening laboratory capacity; enforcing the animal quarantine act; implementing a comprehensive policy package for AI containment (compensation, culling etc.); strengthening hospital capacity for an influenza pandemic, especially infection control and bio-safety protocols.

Sri Lanka: Strengthening laboratory capacity; surveillance of migratory birds; training; lack of fully equipped laboratory, inadequate isolation facilities; and inadequate funds to manage epidemic situation.

Thailand: Limitations in manpower, in the areas of human and animal health; operational difficulties in prevention and control of outbreaks, especially backyard chickens, fighting cocks, free-range ducks; large scale effort needed in securing risk avoidance behaviour of people and cooperation of the media; expensive and insufficient supply of antivirals; limited national and regional capacity for pandemic vaccine.

Timor-Leste: Poor veterinary, health system, laboratory and communication infrastructure; lack of human resources in health and veterinary sectors; need to strengthen multisectoral coordination and commitment.

Countries worked together in groups to complete a checklist for their pandemic preparedness status as well as their budgets according to the key strategies. Please see Annex 3 for the checklist.

4.2 WPRO experience in responding to AI

Country offices and the Regional Office in the Western Pacific Region have responded to the avian influenza situation keeping in view the following objectives:

- (1) Reducing the risk of a pandemic
- (2) Being better prepared for the next pandemic
- (3) Reducing the risk of human infection from animals, including:
- (4) Reducing the risk of possible human to human transmission

Several meetings and training workshops were held during 2005. Technical support to countries has been in the form of full-time and temporary epidemiologists based in Cambodia, Lao PDR and Viet Nam; laboratory experts to Viet Nam; and expert teams were deployed to Viet Nam and China to provide support for vaccines and AI investigation, respectively. Other WHO support has been in the form of emergency

equipment and supplies, funding for public awareness campaigns and operational research.

Among the major challenges is the endemicity of A/H5N1 in poultry in the countries of the Region. Lessons from South Korea indicate that with increasing compensation, resistance to culling can be overcome and the relationship between animal and human sectors can be strengthened. The opposite was seen in Viet Nam, where there is resistance to culling from farmers because of inadequate compensation (and thus reporting of animal outbreaks) and limited surveillance and laboratory capacity. The following five major operational issues hinder control and highlight the growing problem:

- (1) Delayed action may result in H5N1 becoming endemic;
- (2) Delay in reporting by farmers will adversely affect control;
- (3) Multi-sectoral collaboration was not optimal;
- (4) A weak public health infrastructure impairs detection and control;
- (5) Sustaining public awareness and government commitment has been difficult.

Assessment of the pandemic preparedness status in the Western Pacific Region (WPR) was conducted through two surveys covering the current status of pandemic planning and the gaps. One was the APEC-WHO Pandemic Preparedness Situation Assessment Survey in which 12 countries or areas responded and the other was for the Pacific Island Countries (PICs) in which 19 countries responded. The conclusions of the surveys indicated that (as of Nov 5 2005), finalized plans were available in six countries, were in progress in 21, and there was no activity in four. Pandemic influenza planning is underway in almost all Western Pacific countries. There are, however, barriers which include lack of multi-sectoral involvement and lack of funds especially for many Pacific Island Countries (PICs) and resource-poor countries. There are gaps in critical areas in most pandemic plans. All respondents indicated a need for international collaboration and assistance in filling the gaps in planning and preparedness. Regional solutions are a preferred strategy through meetings organized by the WHO Regional Office and working sessions with neighbouring countries. All the countries are willing to hold national desk-

top exercises and participate in an international desk-top exercise for pandemic preparedness.

Besides provision of guidelines, checklists and tools, WPRO has also supported national workshops and supported development of desktop exercises as well as development of advocacy material for pandemic preparedness. A UN Joint Mission for Pandemic Planning in Countries has been undertaken to provide technical support to governments in their preparedness efforts and to increase political commitment for pandemic planning. The UN joint mission included representatives from WHO/UNDP/UNICEF/OCHA AND FAO.

4.3 Surveillance and early warning: a key strategy for responding to the influenza pandemic

The global meeting to develop a common approach on AI and human pandemic influenza organized jointly by FAO, OIE, WHO and the World Bank in Geneva on 4 November 2005 indicated that strengthening disease surveillance should be a priority because: (1) early detection and rapid response mechanisms are essential for tracking the evolution of H5N1 virus and (2) strengthening of both veterinary and human health services so that H5N1 cases – in animals or humans – can be identified quickly.

Several WHO guidelines and checklists are available for pandemic preparedness planning which outline, as one of the key strategies, the surveillance needs. These include interpandemic (i.e., during the WHO phases 1 and 2), enhanced (phase 2 and beyond) and pandemic surveillance as well as early warning measures. Essential elements should be considered by all countries developing an influenza preparedness plan, regardless of their resources.

For interpandemic surveillance the general guidelines pertain to: establishment or enhancement of surveillance for influenza like illness (ILI) and case definition; establishing a sentinel system for virological characterization; participating in Global Flu Net through National Influenza Centre (NIC); and establish links with appropriate organization(s) for routine surveillance of disease in animals and birds. For early warning, surveillance should be designed to detect unusual events of acute respiratory illness to trigger public health and laboratory investigations, e.g.: sentinel hospital-

based surveillance; surveillance of unexplained deaths caused by acute respiratory illness or cluster of severe illness in the community; surveillance of unexplained deaths caused by acute respiratory illness in health care facilities; and other sources of report, e.g., hospital ER, schools, care facilities for elderly etc.

During phase 2 and beyond, enhanced surveillance is recommended with a system for revision of case definition for influenza like illness or influenza in routine surveillance (WHO website). Some types of surveillance are: early warning of human respiratory infection associated with unusual deaths of bird flocks; early warning of unusual human (at risk) cluster of respiratory disease with emphasis on health-care worker; monitoring of groups of individuals including incoming travellers from infected regions; cullers, farmers and veterinarians, laboratory workers, mortuary room workers; and conducting rumor surveillance.

For pandemic surveillance, it is essential to establish criteria for level of epidemic according to WHO guidelines as well as a system to revise the pandemic case definition (WHO website). It may be decided to continue ILI surveillance or limited sampling of virus to monitor characteristics, which may include: monitoring hospital admissions, deaths in suspected or confirmed cases; monitoring workforce absenteeism; monitoring vaccine use, adverse vaccine events, vaccine efficacy, antiviral use and adverse effect; define recovered workforce (immune) to facilitate resource of workers; and mechanism for data aggregation and interpretation for decision making.

Surveillance is also important in the animal sector but, of course, this is handled by the ministries of agriculture in all countries. In Thailand this involves migratory wild birds (both active and passive surveillance), in addition to domestic poultry, as well as other species such as pigs, cats, dogs, tigers etc since there have been outbreaks in all. Control of HPAI among poultry in Thailand has been ongoing since the beginning of 2004 and has involved laboratory-based surveillance, stamping out/culling operations in affected farms, increased surveillance in surrounding areas, and nationwide "X-ray" campaigns in which every household is visited for active surveillance of human and animal disease. Investigations of human-to-human transmission include extensive gathering data on individual cases, with attention to dates, times, places, and potential sources of exposure. All possible exposures are systematically evaluated, and narrowed down to the most plausible. Sources of information range from face-to-face interviews to

sampling of animals and environmental areas, to analysis of viruses and hospital records.

4.4 Health systems preparedness and response to the influenza pandemic threat

An influenza pandemic will affect medical services and disease control functions and, equally, other essential community services such as public transport, police, the fire brigade, traffic control, grocery stores, schools etc. In terms of the implications for health services, up to 25% of the global population will be ill and up to 7.4 million deaths could occur which the health services may not be able to cope with. The health systems priorities would be: to reduce transmission the virus; to decrease the number of cases, hospitalizations, and deaths; to maintain essential services; and to minimize the economic and social impact of a pandemic. The need for planning a health systems response is to augment and manage emergency health services by rapidly building capacities of health facilities and human resources through training of health care workers, stockpiling and early use of antivirals, and social distancing.

The elements of a health systems response broadly include: (1) public health measures: antivirals, vaccine, quarantine, social distancing, infection control etc; (2) health care response: diagnosis, treatment, and care of the sick with appropriate and adequate health care infrastructure support for facilities (hospitals with isolation and biosafety); equipment (ICU beds, ventilators); human resources (trained health care personnel); supplies (drugs, vaccines, PPE); coordination and management (emergency response). Specific systems issues to be considered include: Triage systems, bed/personnel/supplies, surge capacity, human and material resource management including alternative arrangements; diagnosis and case management; biosafety (hospitals, labs, other facilities) including infection control procedures (e.g. specimen handling, patient isolation, standard precautions) to reduce transmission. Human resource capacity needs to be enhanced including: discharging patients and appropriate handling of bodies; training courses for clinicians/health managers in case management, infection control; development of a regional health care and referral systems plan; linkages with hospital labs for reporting; and a plan for registration and credentialing of volunteers.

The major steps in health services contingency planning are as follows:

- (1) Estimate potential number of outpatient visits, hospitalizations/hospital days, and deaths and develop a strategy to cope with expected shortages;
- (2) Develop guidelines for clinical management and infection control for hospitals and non-hospital sites;
- (3) Define a strategy to deal with excess mortality including making an inventory of current facilities and
- (4) Plan for mental health services for victim relief during the pandemic.

The key strategic actions during each pandemic phase will require the following inputs for health systems response. During the pre-pandemic period countries would need to: develop a stockpile of antivirals, PPE and diagnostics; develop guidelines for appropriate use; develop national consensus on vaccination against seasonal influenza and procurement of AI vaccine; strengthen logistic and operational aspects for rapid delivery of antivirals and lifesaving drugs and vaccines; if vaccine production capacity exists, review/develop strategies for emergency production, licensing and testing of pandemic vaccine; alert local healthcare providers to strengthen appropriate infection control practices and biosafety measures; alert the health system and prepare contingency plans (for hospital bed capacity, staff deployment, strengthening clinical care, isolation practices); and conduct table-top pandemic intervention exercises and use the results to improve planning. During the pandemic alert period health systems will need to focus on: the use of antivirals for early, strategic treatment of cases and prophylaxis of close contacts; consider administration of pandemic vaccine, if available; implement appropriate interventions as identified in the contingency plan including social distancing; review strategies for vaccine use including inventories of necessary supplies and use for mass or targeted emergency vaccination campaigns; orient public and private healthcare providers on case definitions, protocols and algorithms to assist with case-finding, management, and infection control; implement contingency plans for 'scaling up' human resources in healthcare facilities; commence triage arrangements and other emergency procedures for efficient use of healthcare facilities; and implement contingency plan.

The health systems response will be most severely tested during the pandemic phase when human morbidity and mortality will be the highest. It will be critical to mobilize all health systems and essential services at national and local levels where affected, to: monitor health system status, adjust triage system if necessary, deploy additional workforce and volunteers, ensure staff support, provide medical and non-medical support for ill people in alternative (non-healthcare) facilities, provide social/psychological support for health-care workers, victims and communities. In addition, health systems will need to ensure early and strategic use of antivirals; implementation of social distancing- close schools, ban public gatherings etc.; and implement a vaccination campaign according to priority status, in line with plans and availability of the vaccine.

4.5 Outbreak communication and pandemic preparedness

Outbreak communication is a tool to achieve the overriding public health goal to bring outbreaks under control as quickly as possible, with minimum social disruption. If done properly, outbreak communication speeds outbreak control, minimizes social turbulence, and maintains public confidence in the outbreak response efforts. During outbreaks, which by their very nature are unavoidable and unpredictable, good outbreak communication is necessary because the situation is frequently marked by uncertainty, confusion and a sense of urgency. Communication through the mass media is generally another feature of the outbreak situation. Communication must be part of any outbreak response at the early stage to make people aware of essential do's and don'ts. It serves as an important guide to the population so as not to create panic and unnecessarily fear. However, communicating what constitutes a public health threat is difficult and journalists are generally much better in spreading the scary news than the re-assuring messages. Rapid response to a large outbreak could be made more difficult when officials are reluctant to share information with the public. There is always a risk of over reaction, but the best way to deal with the problem would be to get the people informed. Through lessons learnt we now know that communication failure leads to delayed outbreak control, undermined public trust and compliance, and unnecessarily prolonged economic, social and political turmoil. Experience from outbreaks like Bovine Spongiform Encephalopathy (BSE), SARS and avian influenza show that efforts to recoup public confidence take time and are

expensive economically, socially, and politically. WHO's guidelines for communicating with the public during outbreaks are as follows:

- Build, maintain and restore TRUST
- ANNOUNCE EARLY, even with incomplete information
- Aim for TOTAL TRANSPARENCY
- LISTEN to the public's concerns
- INCORPORATE outbreak communication early as part of a complete response plan.

Effective implementation of guidelines will result in greater public resilience and guide public participation to support rapid containment of outbreaks. Effective communication minimizes damage to a nation's international standing, as well as fits economic, social and public health infrastructure.

WHO believes communication is an essential tool to outbreak control and is expanding outbreak communication activities by training communications staff so that they can support country offices during high-profile outbreaks. WHO is ready to assist Member States in building capacity in outbreak communication when requested. During the pandemic alert period (phases 1-3) the aim is to build trust; provide full, factual and transparent information; promote national pandemic preparedness; reduce risk to backyard farmers; educate healthcare workers and develop interagency / inter-governmental network. In the transition period (phases 2-5) when there is a new AI outbreak there is a fear that the pandemic has recurred in a new country. Communications during the "fire blanket" attempt include preplanned messages developed to minimize panic (especially if measures like quarantine, which can exacerbate fear globally, are to take place). The pandemic itself has critical challenges during which it is essential to provide fast, full and transparent information. The threat of a pandemic may lead to the following communication challenges:

- Pandemic approaching: isolationism, discrimination, fear of shortages of antivirals and vaccines, preparedness - what to expect;
- Pandemic a reality: Home care, hand and respiratory hygiene, what else people can do for themselves.

5. Responding to the pandemic threat

5.1 Role of FETP in strengthening national capacity in communicable disease surveillance and response: India and Thailand Experiences

The goal for the **India** programme in FETP at the National Institute of Communicable Diseases is to build sustainable state-level, epidemiologic capacity to identify and respond to public health emergencies; to conduct field epidemiologic research; and to support health departments. A regional three-month programme initiated in 1996 has also trained 142 senior health professionals in 10 courses for Member countries in the Region (some are in-country).

A second programme is a Master of Applied Epidemiology at the National Institute of Epidemiology under the Indian Council of Medical Research. This is a two-year academic degree that was started in 2001; by 2005 the course had produced 15 graduates and 24 scholars.

In **Thailand** the FETP has been administered by the MOPH Bureau of Epidemiology since its inception in 1980 as a joint MOPH, WHO, CDC collaboration. It is based on the philosophy of two years of supervised field work in epidemiology. The rationale of the FETP has been to respond to needs of public health services in the country.

For avian influenza, the FETP contributes to three (out of six) national strategies for avian influenza control and influenza pandemic preparedness: (1) disease surveillance and response during outbreaks; (2) knowledge generation and management; and (3) capacity building of organizations and manpower. The focus has been to increase production and capacity building of senior epidemiologists. The roles of the Surveillance and Rapid Response Teams are to: (1) conduct surveillance for diseases of potential outbreak; (2) detect public health emergency; (3) conduct prompt and effective investigation; (4) implement preliminary control measures; and (5) sharing surveillance information.

5.2 Role of International Health Regulations (2005) in building core capacities

The International Health Regulations (IHR) are an international legal instrument for the purpose of providing maximum security against the international spread of disease while avoiding unnecessary interference with international traffic. The IHR were last revised in 1969, the World Health Assembly adopted a new revision in May 2005, henceforth known as IHR (2005). Key changes include: (1) Notification: expanded scope – from three diseases (cholera, yellow-fever and plague) to include all public health emergencies of international concern (PHEIC) and linked to an established mechanism for response actions: notification is supported by verification and response; (2) national focal points at country-level to deal with all matters related to implementation of the regulations; (3) definition of core capacity at community-level to recognize early and report, at ports of entry/exit for public health screening, at intermediate health system for surveillance, investigation, response; and at national level in laboratory, surveillance, response, communication; (4) measures recommended for PHEIC and continuing risks; and (5) external advice regarding IHR through the IHR emergency and IHR review committees. Article 5 of the IHR (2005) gives up to five years to State Parties to develop, strengthen and maintain the capacity to detect, assess, notify and report events as stipulated in the regulations. WHO is obliged to assist Member States, upon request, to develop, strengthen and maintain required capacities.

5.3 Possible models and mechanisms for networking among communicable disease surveillance/public health institutions and facilities

Public health infrastructure includes the resources needed to deliver essential public health services to the community and comprises people who work in the field of public health; information and communication systems used to collect and disseminate accurate data; and public health organizations including laboratories at national, provincial and local levels. The strength of the public health infrastructure in SEAR include: public health institutions with a capacity to investigate and control infectious disease outbreaks; availability of health facilities for case-management; appropriate human resources for surveillance; programmes to upgrade skills of public health professionals (FETP and other training); centres of excellence for training and research; vibrant pharmaceutical sector; and laboratories for specimen referral, diagnosis and research. The major

deficiencies in responding to a pandemic in the Region are: limited experience to combat pandemics and avian influenza; inadequately trained insufficient public health staff; weak information and communication systems; limited public health laboratory capacity; and inadequate resources. The challenge in responding to influenza pandemic includes the timely detection and verification of outbreak events and; the rapid and effective response to: reduce human suffering, contain international spread, minimize impact on travel and trade; and sustained epidemic preparedness at all levels.

Many lessons were learned from the response to SARS, most importantly that inter-country collaboration and coordination was key to contain multi-country outbreaks assist as rapid and transparent information sharing was critical to contain multi-country outbreaks. Levels of networking at national level could be between animal and health sectors and sub-sectors; at regional level between national animal and health organizations; and at global level between FAO, OIE and WHO and their networks including laboratory networks. Some examples of networking at country level include integration of influenza surveillance into the existing national surveillance network or strengthening/establishing a National Influenza Centre and expanding its role to include influenza-specific surveillance or several networks within influenza (lab case management, risk communication etc.) can be created with linkages between each.

Issues that still need to be addressed include the following under a national network: mapping of existing public health institutes (identify candidates for network); exclusive network of influenza surveillance and response (requires a vertical programme in the country or National Influenza Centres or components of influenza); and integration of influenza into existing public health institutes. For a regional network the remaining issues are: National Influenza Centres or national public health institutes; mechanism for establishing a network (MoUs); mandate of network (sharing of resources, technology, information, material, laboratory specimens); a coordinator/secretariat; and a sustainability mechanism.

5.4 Critical issues in laboratory diagnosis of avian influenza in humans

Issues related to obtaining accurate and timely laboratory diagnosis include what specimens to collect; how to store and transport specimens; how and which test to use; how to interpret results; and safety. The quality of

specimens is crucial—the best test cannot give accurate results on a poor specimen. For AI diagnosis specimens can be: respiratory specimens (a throat swab is better than a nose swab), nasopharyngeal aspirate/swab, tracheal aspirates/broncho-alveolar lavage; blood for serology; and autopsy tissues. Infection control measures and personal protective equipment must be maintained at all times. Virus transport medium is to be used for all swabs and respiratory specimens should be maintained at cool temperatures, not frozen. The viral load and positive rate depends on the type of specimen and the time since collection. To detect virus, it can be grown in cell culture or through egg inoculation (days), viral antigen detection (hours), or viral nucleic acid detection using PCR (real-time takes hours and the conventional method takes a day). Rapid diagnostic tests are generally enzyme immuno-assay kits (EIAs) for influenza. The tests can diagnose influenza A versus B but cannot differentiate subtypes H3/H1/H5. Other molecular diagnostic tests are also available but are not yet widely used. Detection of an antibody response (serology) is done using complement fixation test (all influenza A), hemagglutination inhibition tests (good for human flu but not for H5N1), and microneutralization tests. The gold standard for diagnosis of H5N1 infection is culture (in BSL-3), RT-PCR, and sero-conversion by micro-neutralization tests (in BSL-3). Genetic analyses of recent H5N1 viruses show no evidence of avian-human reassortant virus.

The group work contributed to formulation of recommendations. In the laboratory group the focus was on developing infrastructure, especially appropriate biosafety level (BSL3). It was also recognized that no single institution can continuously provide comprehensive laboratory support. The importance of networking within the country and of intercountry networks was emphasized and discussed. Four areas where laboratory services need strengthening included having a rational policy, ensuring access at the right time, assuring quality of laboratory results and promoting biosafety practices.

The epidemiology group suggested that the national networks in all countries need to be strengthened. A regional network is also required, to be maintained by SEARO or other agencies, to facilitate sharing of experience and knowledge through websites, publications, and existing networks such as ASEAN. A contact institution should be identified in all Member countries and mapped so that sub-national networking can be established and is available to all parties concerned with transparency of

operations. The gaps identified were: political commitment; inter-sectoral; inter-country and inter-regional collaboration; linkage with laboratories; incomplete community surveillance data and limited funds. The proposed networks should be integrated into the national surveillance system which should be further integrated with other sectors; at the regional level this would be a specialized network.

6. Coordination and programme management for control of influenza pandemic

6.1 Indonesia experience in coordination and programme management

The avian influenza situation is dynamic with the pandemic and all the steps leading up to it being difficult to predict. There is poor understanding of the source of infection and transmission and the lack of adequate resources makes this a particularly difficult issue to tackle. The agricultural perspective is based on economic loss, competitiveness and cost-benefit of interventions whereas the human health perspective is based on optimal health status by avoidance of risk factors and cost-effectiveness of interventions. The control of H5N1 among animals will contribute significantly to the prevention of a pandemic in humans. There is a need for inter-sectoral approaches with the involvement of various programmes and multiple disciplines. Programme management requires that the following different aspects are considered: infrastructure (by level, decentralized, organizational behaviour); policies and strategies (economic versus human welfare); manpower (quantity and competencies); budgeting scheme (emergency or unusual event); logistics and distribution (vaccine, antivirals, PPE, hospital equipment and supplies); span of control (number of provinces, unit, Rapid Response Team); guidelines and SOPs (quantity, clarity and sufficiency); and supervision and money schemes (frequency and quality). Coordination involves the following issues: among whom (related parties at which levels, inter- and intra-sectoral); on what (policy making or implementation); how to (harmonized policies and strategies, agree on common objectives that H5N1 spread will be contained); and potential constraints (insufficient expertise, inadequate information, poor understanding on risk reduction vs case management, source of infections and transmission dynamics, "burn-out" due to long term activities).

6.2 Intercountry collaboration and cooperation in responding to emerging diseases

The reasons for intercountry collaboration in responding to emerging diseases are manifold: outbreaks of SARS and avian influenza have caused massive social, economic, and political disruption; few countries are fully prepared to detect and control such events; borders are not a barrier to the spread to humans; and geographical proximity and the intensity of their interactions through modern trade and travel leave countries of the South-East Asia Region particularly vulnerable. Threats of PHEIC faced by countries in the Region have included SARS, avian influenza, NIPAH virus, HIV, plague, ebola, dengue, cholera, malaria, TB, JE etc. as well as chemical and nuclear incidents. No country alone can deal efficiently with these threats because there are disparities in response capacity, level of development, public health infrastructure, technical expertise available to national authorities, interdependence for timely and effective prevention and control of cross-border spread, and the fact that most countries face financial resource constraints. Horizontal cooperation and multi-country activities take several forms including technical support on a bi-lateral basis, MCA (multi-country activities undertaken jointly by a number of countries with EB funds) using the WHO country budget, direct donor support facilitated by WHO, and technical support through sub-regional units. A Regional Sub-Unit for CSR (the first of two planned) is being set up in Bangkok, Thailand to increase the reach and efficiency of the SEARO-CSR Alert and Response Operations and to take the technical support operations closer to the countries. It will facilitate implementation of IHR-2005 to build core capacity to detect and respond appropriately to PHEICS and contribute to the implementation of Asia Pacific Strategy for Emerging Diseases (APSED). Bangkok was chosen because it has a well-developed communicable disease surveillance and response system; a good health network and infrastructure; a renowned training programme for FETP; extensive experience in Emerging Infectious Diseases, especially SARS and AI; other centres of excellence and academic, laboratory and management; highly developed communications and transportation infrastructure; and important international institutions and donors. A similar sub-unit is planned for New Delhi. The key functions of the sub-unit will be to: (1) review epidemic intelligence, information sharing and risk communication, and conduct risk assessment, when needed; (2) provide technical support to countries for epidemic preparedness, as well as for rapid outbreak detection and response operations, particularly related to PHEIC; (3)

facilitate rapid access by countries to global and regional technical expertise (including lab testing of samples), as well as to critical supplies, reagents, medicines, and vaccines; (4) collaborate and coordinate with key partners to strengthen capacity in countries for epidemic preparedness, detection (epidemiologic surveillance and laboratory services); and facilitate technical cooperation between countries, including exchange of national consultants. Organizational and operational aspects of the sub-unit will be looked after by a coordinator/team leader who will report to CDS, SEARO in close consultation with WR, with administrative and logistical support from the WHO-Thailand office and in close cooperation with technical units at the Regional Office. Initially, it will have one international staff and two national professional officers and support staff. Additional technical staff from the Region will be sought, either through secondments or as consultants.

6.3 Inter-regional collaboration: Asia Pacific Strategy for Emerging Diseases and the next implementation steps

The Asia Pacific Strategy for Emerging Diseases (APSED) is a bi-regional cooperation strategy based on the fact that 61% of the world's population lives in the South-East Asia and Western Pacific Regions with countries which are at risk of emerging diseases. Diseases know no boundaries and globalization, increased international travel and population movements facilitate the spread of emerging diseases across borders. Lessons from tackling SARS and avian influenza have shown that intercountry collaboration is key. Continuing public health threats due to emerging diseases in Asia and the new requirements of the International Health Regulations (2005) mean that there will be increasing demands for supporting country core capacity building and emerging disease response, which will subsequently increase the need for strategic directions and more coordinated efforts from partners. Countries in the Asia-Pacific region share common challenges and opportunities to address emerging diseases. Therefore, the need for a common strategy and framework to enhance the health and protection of people across Asia and the Pacific.

The consultation process involved initial discussions within and between WHO SEARO and WPRO to prepare a draft followed by consultations with country experts/focal points and the WHO Eastern Mediterranean Office and WHO/HQ. The feedback has used to revise the

draft document. At a further consultation in Manila, in which many Member countries of the Region participated, the strategy was finalized.

APSED was endorsed by the respective Regional Committees of both regions in the latter half of 2005 and serves as a road-map for countries to strengthen capacities required to cope with emerging diseases. Member States are required to: strengthen their capacity and implement APSED; foster cooperation among themselves and between sectors; and develop, share and implement national plans. WHO must: support Member States in strengthening capacity; facilitate networking and stockpiling of medicines, vaccines and PPE; support developing/implementing National Influenza Pandemic Plans; assist in mobilization of resources. APSED is a framework for the development of stronger collaboration and coordination (avoiding duplication) and a stepping stone towards implementing the IHR (2005). In addition, it is a document for advocacy for financial support and human resource development in the Region. The guiding principles, as it builds on SEAR's vision document on emerging diseases, are that it provides a framework for: enhancing intercountry and interregional cooperation for jointly combating emerging diseases and mobilizing resources for strengthening country capacities.

The scope of APSED is to complement and develop global and regional communicable disease programmes and frameworks. This would be through the identification of a wide range of actions to achieve the expected results that will contribute to strengthening global health protection through preparedness for emerging diseases and their prevention, detection and control. The vision of APSED is to minimize the health, economic and social impact of emerging diseases in the Asia Pacific Region. Its goal is to improve health protection in the Asia Pacific Region through productive partnerships for planning, prevention, prompt detection, characterization, and the containment and control of emerging infectious diseases. There are five objectives of APSED with the following expected results:

- (1) Reduced risk of emerging diseases
 - through strategic communication and community participation
 - acquired from animals
 - through health care acquired infections

- from laboratories
- antimicrobial resistance
- (2) Early detection of outbreaks of emerging diseases
 - Strengthened early warning systems
 - Coordinated and integrated surveillance system
 - Established and strengthened public health functions of laboratories
 - Strengthened local capacity for surveillance and risk assessment
 - Strengthened information management for early detection of emerging diseases
- (3) Early response to emerging diseases
 - Established systems to respond to emerging diseases
 - Strengthened capacity to respond to emerging diseases
 - Strengthened information management to respond to emerging diseases
 - Strengthened risk communication
- (4) Preparedness for emerging diseases
 - Strengthened human resource development
 - Strengthened local preparedness to respond to public health emergencies
- (5) Sustainable technical collaboration within the Asia Pacific Region
 - Development and strengthening of technical partnerships in the Asia Pacific Region

The next steps in Implementing APSED are to establish a Technical Advisory Group (TAG) and working groups; to develop a regional plan of action to highlight priority activities; to conduct country consultations on the implementation of the strategy; to organize a partners' forum for coordination and collaboration with key stakeholders; to develop advocacy packages for resource mobilization and increase awareness; and to develop

tools for monitoring and evaluation. APSED's future direction is the key to achieve national and regional health security to build sustainable country core capacities for surveillance and response through investment in public health and partnerships. Some examples of collaborative activities between the two regions are: mapping of expertise/institutions; SEARO/WPRO Outbreak Response Network (SWORN); MoU between countries on rapid release of experts under SWORN; establishing world class laboratories within Asia Pacific for each emerging pathogen; regional network of laboratories; common guidelines e.g. outbreak management; lab. diagnosis, risk communication etc.; and documenting best practices.

7. Conclusions and recommendations

Participants deliberated on the meeting discussions and outcomes and finalized the following recommendations:

- (1) There is a need for strong collaboration between the animal and human health sectors in preparing for and tackling an avian influenza pandemic. Surveillance is key to containing an outbreak at the local level and to prevent rapid spread. There is therefore an urgent need to advocate for strengthening animal and human surveillance (and related issues e.g. the environment) and investigation of episodes and outbreak containment in animals as well as in humans.
- (2) Countries need to improve their preparedness plans. This will require sustained efforts to address gaps and to continually update their plans in line with new knowledge. Countries should also develop contingency plans to support their NPPPs. An essential component of planning is working out the resource gaps in terms of human resources, equipment and the finances to support these. There is an urgent need for resource mobilization at country and regional levels. In addition to outlining country requirements, the budget component will be used by donors in their determination of which activities to support.
- (3) In view of difficulties in accessing antivirals and vaccines, there should be an emphasis on public health interventions including environmental sanitation, food safety, personal hygiene etc.

- (4) In preparing their plans, countries should consider operational research aspects.
- (5) WHO should facilitate and provide technical assistance including guidelines, checklists, and other tools to develop contingency plans.
- (6) Ongoing, sustained and realistic risk communication will help in reducing the impact of a pandemic.
- (7) The challenge posed by AI outbreaks and the requirements for preparedness for an influenza pandemic should be utilized to build core capacity within public health units, health care facilities, hospitals, laboratories etc. This would also help in implementation of IHR 2005.
- (8) Field epidemiology training of healthcare workers is a key component for strengthening surveillance and outbreak investigation capacity. FETPs currently exist in India, Indonesia and Thailand; additional FETPs (including tailor-made FETP courses) may be required to address the needs within the Region. Existing FETP capacity should be augmented and utilized to meet the needs of various countries within the Region. Countries may also consider joint programmes for training of animal health workers.
- (9) Countries should strengthen/designate National Influenza Centres to provide essential laboratory facilities for diagnosis of AI (animal and human). Countries should establish efficient mechanisms for the collection and transportation of material for diagnosis from peripheral to national laboratories. WHO should assist in upgrading laboratory expertise and facilities where required. WHO may facilitate sending of samples to reference laboratories.
- (10) There should be intra-and intercountry (regional) networking of public health institutions. Consideration should also be given to strengthening and complementing existing networks.
- (11) Intercountry and interregional collaboration should be enhanced for responding to threats of emerging infectious diseases. The Asia Pacific Strategy is a mechanism for improving such collaboration.

Annex 1

Programme

Monday, 21 November 2005

- 8.30 – 09.00 hrs Registration, Cattareeya Conference Room, 1st Floor
Rama Garden Hotel, Bangkok
- 09.00 – 09.15 hrs Welcome and Introduction
Dr. Jai P Narain, Director CDS/SEARO
- 09.15 – 10.30 hrs **Global overview of avian influenza, pandemic
preparedness and response.**
Speaker: Dr Klaus Stohr , Coordinator Global influenza
Programme, WHO/HQ
**FAO/OIE strategy for the control of avian influenza in
animals in Asia**
Speaker: Dr. Wantanee Kalpravidh, Regional Coordinator for
Southeast Asia HPAI Surveillance Network, FAO
- 11.00 – 11.30 hrs **Regional situation of avian influenza and national
pandemic preparedness**
Speaker: Dr Subhash Salunke, Regional Advisor CSR/SEARO
- 11.30 – 13.00 hrs **National pandemic plans – challenges, strategies and
priority activities**
Indonesia
Thailand
DPR Korea
- 14.00 – 15.00 hrs **Inaugural address by Dr Samlee Plianbangchang**
Regional Director, WHO/SEARO
Group Photograph

- 15.00 – 15.30 hrs **Latest developments on antivirals and vaccines in the context of avian influenza/influenza pandemic**
Speaker: Dr Klaus Stohr , WHO/HQ
Coordinator Global influenza Programme
- 15.30 – 16.30 hrs **Presentation: Status of pandemic plan development and issues relating to implementation**
7 minutes for each presentation
Bangladesh
India
Myanmar
Nepal
- 16.30 – 17.00 hrs **Discussion**
- 17.00 – 17.30 hrs **Presentation: Status of pandemic plan development and issues relating to implementation**
7 minutes for each presentation
Bhutan
Maldives
Sri Lanka
Timor Leste
- 17.30 – 18.00 hrs **Discussion**

Tuesday, 22 November 2005

- 9.00 – 9.45 hrs **Responding to avian influenza and preparation of pandemic preparedness plans: Experiences from WPRO**
Speaker: Dr Tee Ah Sian, Director, Communicable Diseases, WPRO
- 9:45 – 10.30 hrs **Surveillance and early warning: a key strategy for responding to the influenza pandemic**
Speaker: Dr Khanchit Limpakarnjanarat, CDC-MoPH, Thailand
- 11.00 – 11.45 hrs **Health system preparedness and response to the influenza pandemic threat**
Speaker: Dr Subhash Salunke, Regional Advisor CSR/SEARO

11.45 – 12.30 hrs **Outbreak communication and pandemic preparedness: experience sharing**

Speaker: Ms Aphaluck Bhatiasevi, CSR/SEARO

13.30 – 15.00 hrs **Individual country discussions to review respective draft pandemic plans and to identify follow up actions**

17.30 – 19.00 hrs **Reception hosted by WHO**

Wednesday, 23 November 2005

09.00 – 10.30 hrs **Country presentations on the outcome of the discussions from Day 2 on pandemic preparedness plans**

Venue: Leerawadee Conference Room 1st Floor

10.30 – 11.00 hrs **Role of FETP in strengthening national capacity in communicable disease surveillance and response: Experience from India**

Speakers: Dr Shiv Lal, Director NICD, India and Dr M.D. Gupte, Director NIE, India

11.30 – 11.50 hrs **Role of FETP in strengthening national capacity in communicable disease surveillance and response: Experience from Thailand**

Speaker: Dr Chuleeporn, Director FETP, MoPH, Thailand

11.50 – 12.10 hrs **Role of International Health Regulations in building core capacities**

Speaker: Dr A Samad Abdullah, Coordinator, CDC/SEARO

12:10 – 01.00 hrs **Discussion: Scaling up FETP in Member countries**
(Introduction by Dr A Samad Abdullah, Coordinator, CDC/SEARO)

14.00 – 14.30 hrs **Possible models and mechanisms for networking among communicable disease surveillance/public health institutions and facilities**

Speaker: Dr Rajesh Bhatia, Regional Advisor, BCT/SEARO

14.30 – 15.00 hrs **Critical issues in laboratory diagnosis of avian influenza in humans**

Speaker: Dr Malik Peiris, Director WHO Reference Laboratory Hong Kong

- 15.00 – 17.00 hrs **Group work:**
Networking and strengthening collaboration among public health institutions for avian influenza and pandemic preparedness
Introduction to group work: Dr Rajesh Bhatia, Regional Advisor-BCT, SEARO
The participants will be divided into two groups. The outcome of the group discussion is identification of needs and gaps and the possible means of implementing networking of public health institutions for pandemic response in their countries and the region. Each group will have consensus on and come up with prioritized actions.
Group A: Laboratories
Group B: Epidemiological surveillance

Thursday, 24 November 2005

- 9.00 – 10.00 hrs **Presentation and discussion of group work from Day 3**
- 10.00 – 10.30 hrs **Coordination and programme management for control of influenza pandemic**
Speaker: Dr Hariadi Wibisono, Director MoH Indonesia
- 11.00 – 11.30 hrs **Inter-country collaboration and cooperation in responding to emerging diseases**
Speaker: Dr A Samad Abdullah, Coordinator, CDC/SEARO
- 11.30 – 12.00 hrs **Inter-regional collaboration: Asia Pacific Strategy for Emerging Diseases and the next implementation steps**
Speaker: Dr Tee Ah sian, DCC/WPRO and Dr Jai P. Narain, Director CDS/SEARO
- 12.00 – 12.30 hrs **Discussion**
- 13.30 – 14.00 hrs **Discussions on meeting conclusions and recommendations**
(Working group)
- 14.00 - 14.30 hrs **Closing**

Annex 2

List of participants

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Annex 3

Checklist for Countries to Assess their National Pandemic Preparedness Plans since October 2005

Strategies and Activities		Yes		No	Remarks
		P	I		
1	Leadership, Planning and Coordination				
	Management structure e.g. national steering committee established; technical committees Command and control				
	Country situation outlined – risk assessment				
	Integrated multisectoral (at all levels) plan Describe roles and responsibilities				
	Workplan				
	Monitoring and evaluation – indicators/targets to monitor activities included				
	Budget (with country contribution for each activity) to support workplan: Immediate need Medium term need				
	Animal vaccination policy				
	Desktop exercises to test various components of the plan				
	Incident rooms (with facilities for extra phone lines; fax) identified				
	Mechanism outlined for regular review of the plan with named persons responsible				
2	Reduce exposure of humans to H5N1				
	OIE/FAO recommendations included				
	Policy re importation of birds				

Strategies and Activities		Yes		No	Remarks
		P	I		
	Migratory birds:- Risk assessment Monitoring movement				
	Stockpiling PPE for animal workers				
	Distribution strategy for PPE				
	Educational messages to animal health workers				
	Food safety measures				
	Wet Markets				
	Safe animal husbandry practices				
	Policy re safe handling and disposal of sick/culled birds				
3	Enhance Surveillance and Early Warning				
	Surveillance and early warning systems for: Animals Humans				
	Reporting system for notification of cases described: Animal Human Lay reporting Rumour verification				
	Laboratory: Capacity for animal testing Capacity for human testing Networking within the country Links made with external reference laboratories if applicable Mechanism for transporting specimens				
4	Containment and Response				
	Rapid response teams				
	Stockpile of antivirals				
	Strategy for antiviral use				
	Strategy for vaccine use				
	Stockpile of PPE				
	Distribution strategy for PPE				
	Case management guidelines				

Strategies and Activities		Yes		No	Remarks
		P	I		
	Infection control policy				
	Isolation facilities identified				
5	Health Systems Response to reduce morbidity and mortality				
	Staff capacity: Case management Infection control				
	Medical supplies considered – antibiotics, antipyretics; syringes etc				
	Additional equipment considered e.g. ventilators				
	Hospital surge capacity – bed capacity earmarked				
	Additional mortuary facilities identified				
6	Social measures should a pandemic virus emerge				
	Port health capacity – border control measures				
	Facilities for isolation				
	Quarantine facilities				
	Cordoning off – who will advise/enforce?				
	Social distancing e.g. mass gatherings; school closure; workplace attendance				
	Legal issues e.g. enforcing social distancing – human rights vs. public good Compensation for farm owners				
	Ethical issues e.g. who will get scarce antivirals/vaccines				
7	Communication				
	Strategy for risk communication included- IEC material, media, interpersonal approaches				
	Protocol for internal communication within government should a case (human/animal) be notified. e.g. whose responsibility and who should be informed				
	Protocol for external communication e.g. from Government to WHO or other agencies				
	Nominated spokespersons from various sectors				

P = Planning phase
I = Implementation phase

Budget requirements

Key Strategies		Immediate term 2005-06 (USD)		Medium term 2007-08 (USD)	
		Donor contribution	Country Contribution	Donor Contribution	Country Contribution
1	Leadership, planning and coordination				
2	Reducing exposure of humans to H5N1				
3	Enhancing surveillance and early warning				
4	Rapid/effective containment and response				
5	Health systems response to reduce morbidity and mortality				
6	Social measures should a pandemic virus emerge				
7	Communication				
	Total (USD)				