



# WHO activities in avian influenza and pandemic influenza preparedness

January - May 2006





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## Background: WHO Strategic Action Plan for Pandemic Influenza

From 7–9 November 2005, a meeting on avian influenza and human pandemic influenza was jointly convened by WHO, the Food and Agriculture Organization, the World Organisation for Animal Health, and the World Bank. Participants reached a number of conclusions and agreed on a 12-point action plan. Concerning human health matters, four main opportunities to act were identified: reduce high-risk behaviours associated with human infections; improve the detection, investigation, and reporting of human cases and, in so doing, strengthen the early warning system; contain an emerging pandemic virus; and increase pandemic preparedness. A fifth item – considered by many participants to be the most pressing need for adequate preparedness – concerned world capacity to manufacture sufficient quantities of pandemic vaccines and antiviral drugs, at sufficient speed, and to make these interventions broadly accessible to all countries.

These five actions form the basis of WHO's plan and its activities in avian influenza and pandemic influenza preparedness. The activities aim to achieve two over-arching objectives:

1. to exploit all feasible opportunities to prevent the H5N1 virus from developing the ability to ignite a pandemic and, should this effort fail,
2. to ensure that measures are in place to mitigate the high levels of morbidity and mortality and social and economic disruption that can be expected during the next pandemic.

Each strategic action has a goal that contributes to these larger objectives.

	<b>Strategic action</b>	<b>Goal</b>
<b>1</b>	Reduce human exposure to the H5N1 virus	Reduce opportunities for human infection and, in so doing, reduce opportunities for a pandemic virus to emerge
<b>2</b>	Strengthen the early warning system	Ensure that affected countries, WHO, and the international community have all data and clinical specimens needed for an accurate risk assessment
<b>3</b>	Intensify rapid containment operations	Prevent the H5N1 virus from further increasing its transmissibility among humans or delay its international spread
<b>4</b>	Build capacity to cope with a pandemic	Ensure that all countries have formulated and tested pandemic response plans and that WHO is fully able to perform its leadership role during a pandemic
<b>5</b>	Coordinate global scientific research and development	Ensure that pandemic vaccines and antiviral drugs are rapidly and widely available shortly after the start of a pandemic and that scientific understanding of the virus evolves quickly

## I. Reduce human exposure to the H5N1 virus

1. Operations - Deployment of international teams from WHO headquarters, regional offices, network mechanisms and the Global Outbreak Alert and Response Network (GOARN)

### Assessment and outbreak missions

- These missions were implemented by WHO staff from headquarters, regional and country offices, the WHO H5 Laboratory Network, WHO collaborating centres, UN agencies and technical experts from GOARN. National staff from ministries of health (MOHs), agriculture and the environment often accompanied the international teams in their investigations. The teams consisted of: epidemiologists, laboratorians, infection control experts, logisticians, social mobilization experts, and communications officers.
- **Personal protective equipment (PPE) and supplies for collection and shipment of specimen samples:** Each team was provided with sufficient sets of PPE and sample materials to operate in a contaminated area, if necessary. These sets and materials were left on site after the team finished their investigations and assessments.
- Up to end May, 4920 sets of PPE were dispatched from WHO headquarters, along with biopackaging for international shipment of infectious substances, viral transport media, testing apparatus for fitting masks, liquid nitrogen shipper and laboratory supplies to 22 country offices, 2 regional offices, 3 FAO country offices and 3 ministries of health.
- **Real-time global coordination:** An operations team (drawn from Global Influenza Programme, Alert and Response Operations, Food Safety, Outbreak Communications and Social Mobilization) with an Event Manager was established in the Strategic Health Operations Centre (SHOC) for the last 5 months. Coordination with regional/country offices/teams in the field has been through the SHOC: 310 teleconferences and 37 videoconferences were held with more than 30 countries. The SHOC in the Regional Office for South-East Asia has also coordinated activities in the region.

### Assessment missions took place in 30 countries:

Assessment missions	
WHO Regional Office for Africa (AFRO)	Burkina Faso, Cameroon, Côte d'Ivoire, Niger, Nigeria
WHO Regional Office for the Eastern Mediterranean (EMRO)	Egypt, Iran, Jordan, Lebanon, Pakistan, Sudan, Syria
WHO Regional Office for Europe (EURO)	Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Cyprus, France, Georgia, Italy, Moldova, Romania, Russian Federation, Tajikistan, Turkmenistan, Ukraine
WHO Regional Office for South-East Asia (SEARO)	Myanmar
WHO Regional Office for the Western Pacific (WPRO)	Cambodia, Lao People's Democratic Republic (Lao PDR)

- **Objectives:** Provide better understanding of the alert and response mechanisms in place, including the capacities for national early assessment; verify the capacity and effectiveness of health infrastructures and resources: alert systems, clinical management and containment measures, laboratory infrastructures and capacity to diagnose and confirm H5N1 and related influenza viruses; social mobilization for risk reduction; risk communications; identify potential intervention gaps and pandemic planning capacities.
- **Technical support:** Guidance on control measures, tools and operational information provided. On site visits carried out to health facilities at different levels, laboratories, ministries of health. Training provided to health professionals, laboratory staff. Short training modules for outbreak investigation targeting epidemiologists, logisticians working at country and regional levels are being developed. Reviewed national preparedness and response plans.
- Common framework developed for inter-regional collaboration with WHO Regional Offices in South-East Asia and the Western Pacific with FAO/OIE on reducing risk, preparedness and response.

**Outbreak missions took place in 9 countries/territories:**

<b>Outbreak missions</b>	
WHO Regional Office for the Eastern Mediterranean (EMRO)	Djibouti, Egypt, Iraq, West Bank and Gaza
WHO Regional Office for Europe (EURO)	Azerbaijan, Romania, Turkey
WHO Regional Office for South-East Asia (SEARO)	India, Indonesia

Turkey

- **Technical support:** A 17-person international team carried out risk assessments, supported development of a new data collection instrument for surveillance system, produced infection control guidelines and training seminars with PPE, provided technical advice on laboratory procedures and safety. Worked with UNICEF and MOH to develop messages for risk reduction and supported MOH in outbreak communication activities. Carried out risk assessment missions in neighbouring countries, Armenia, Azerbaijan and Georgia, and initiated preparedness strategies. Follow-up included a joint FAO/WHO meeting in April on intersectoral approaches to avian influenza in animal and human populations in Turkey.

Iraq

- **Technical support:** An international team conducted a rapid review of national health preparedness and response to the outbreak. Developed a national plan of action, revised the case definition, assessed case investigation tools and surveillance tools which were standardized across Governorates, provided advice on infection control and isolation in hospitals, revised case management protocols, reviewed biosafety in the national public health laboratory and held a WHO-UNICEF workshop to ensure consistency of risk reduction messages in the media and in the community.

#### Azerbaijan

- **Technical support:** A team of international experts in infection control, clinical management, epidemiology, laboratory and communications was deployed for nearly 3 weeks. Assessed preparedness levels, data collection for surveillance activities and contact tracing and biosafety procedures in national laboratory. Reviewed infection control issues in health-care facilities designated for human cases of avian influenza and provided proposals for implementation. A film on infection control for avian influenza is planned.

#### West Bank and Gaza

- **Technical support:** An international team carried out field visits to affected areas, providing guidance on the surveillance system and the animal/human interface, as well as communication efforts to prevent high-risk human behaviours. Assisted with national preparedness planning.

#### Egypt

- **Technical support:** Social mobilization expert from WHO assisted MOH in development of communications strategy to reduce high-risk behaviours; communications officer supported MOH on outbreak communications and media work.

#### Djibouti

- **Technical support:** An epidemiologist from GOARN provided support to intensive surveillance activities and follow-up of contacts and reviewed national preparedness plan; infection control specialist evaluated hospital control practices and provided training on safe use of PPE; social mobilization expert worked with MOH to develop a strategy to reduce high-risk behaviours.

#### India

- **Technical support:** Provided support to MOH and health officials in Maharashtra and Gujarat States where animal outbreaks were confirmed. Worked with MOH on technical epidemiological aspects; development of messages for reducing high-risk behaviours; and outbreak communications.

#### Romania

- **Technical support:** A WHO food safety specialist worked with MOH and the National Sanitary Veterinary and Food Safety Authority to review outbreak response practices and operations and coordination and communication with veterinary and public health services. Communication expert collaborated with the MOH and UNICEF on door-to-door campaigns with public health messages and the development of a dedicated web site to consolidate information on avian influenza.

#### Indonesia

- **Technical support:** Outbreak investigations carried out in 3 locations. Epidemiologists from WHO and Centers for Disease Control and Prevention supported active case finding and follow up of contacts. WHO logisticians provided support in the field and to the MOH in preparedness planning. An infection control expert trained over 100 clinicians and health-care workers on safe practices, clinical management and use of PPE. Social mobilization expert worked with local

health officials on increasing awareness in the community of avian influenza and its transmission. An outbreak communications expert supported the MOH's work with the media.

## 2. Social mobilization

- **Technical support:** Social mobilization experts from The WHO Mediterranean Centre for Vulnerability Reduction (WMC) Communication for Behavioural Impact group supported the MOH and country offices in Egypt, Iraq, Niger, Nigeria and Turkey. In collaboration with the Food Safety Department: developed short food safety/food handling messages for Turkey's human H5N1 outbreak; for Nigeria's first animal H5N1 outbreak; developed a generic food safety DVD; and provided information on preventive measures to food safety authorities in neighbouring countries of Turkey and Nigeria, through the INFOSAN network.
- Technical support provided to Cambodia for an assessment of avian influenza risk behaviours, and the development of key messages for schools, for the community using "5 keys to safer food" and guidelines on preventing avian influenza transmission in the marketplace. Published "Stop the Spread- Measures to Stop the Spread of Highly Pathogenic Bird Flu at Its Source" in May 2006.
- **Technical guidance:** Developed social mobilization assessment tools, checklists, toolkits and guidelines. Produced a CD-ROM of materials on guidelines for avian influenza and risk reduction messages in English and French for use in Africa. Rapid assessment surveys were carried out in Nigeria. Reviewed regional and country level communication plans (East Asia, Iraq, Niger, Nigeria, Pakistan) and behavioural messages from regions and countries.
- **Coordination:** Organized a WHO/UNICEF/FAO meeting on behavioural interventions for avian influenza risk reduction. Developed interagency consensus on key behavioural interventions to support Member States and mechanisms for interagency collaboration. Ongoing work with FAO and UNICEF on developing a generic toolkit and communication products for countries.

## 3. Infection control

- **Technical support:** The assessment and outbreak missions have included experts on infection control and case management, as well as the deployment of PPE. Provided training on infection control and personal protection practices in the affected areas and worked with health workers and hospitals in preparedness planning.
- The Regional Offices for the Americas and for Europe held workshops on pandemic influenza preparedness for health-care facilities.
- With the Asian Disaster Centre, WHO is developing a training workshop on hospital preparedness, looking at infection control procedures, hospital infrastructure, organization of teams and services, including community services in the event of a pandemic. This training course will be piloted with South-East Asian countries.
- Provided assistance on infection control for current infection control specialists and for new practitioners in the South Pacific in collaboration with the Pacific Public Health Surveillance Network (PPHSN) in the Pacific.
- **Technical guidance:** Revised *Avian influenza, including influenza A (H5N1), in humans: WHO interim infection control guideline for health care facilities*, with WHO Western Pacific Regional Office [http://www.who.int/csr/disease/avian\\_influenza/guidelines/infectioncontrol1/en/index.html](http://www.who.int/csr/disease/avian_influenza/guidelines/infectioncontrol1/en/index.html); Produced an Aide-Memoire on *Infection control recommendations for avian influenza in health-care facilities*. A second Aide-Memoire on *Standard precautions and respiratory hygiene* is being developed as part of a package of tools on infection control practices.

- Developing strategies for sampling the avian influenza pathogen to ensure biosafety procedures, with WHO collaborating centre laboratories.

#### 4. Outbreak communications

- **Technical support:** Provided communication experts to field teams in Azerbaijan, Egypt, Indonesia, Iraq, Romania and Turkey.
- **Technical guidance:** Developing tools, including communications surveillance in the regions; table top exercises for staff, MOHs and journalists; attitude surveys about pandemic influenza knowledge among health-care workers and public; a tool to rapidly assess public trust as the pandemic evolves; and outbreak communication workshops, including journalist-specific workshops to be conducted in regional and country offices. Produced Standard Operating Procedures for communications during a pandemic. Contributing to the UN communication strategy for avian and pandemic influenza.
- **Media:** Responded to 50–200 media enquiries a day; organized virtual press conferences and coordinated press briefings.

#### 5. Dissemination of information

- Redesign of the avian influenza web site to incorporate general information, recommendations in relation to avian influenza and pandemic influenza preparedness; translated into 6 official UN languages. [http://www.who.int/csr/disease/avian\\_influenza/en/index.html](http://www.who.int/csr/disease/avian_influenza/en/index.html)
- Over 65 items published on avian influenza outbreaks, assessment missions and WHO activities in the affected areas. [http://www.who.int/csr/disease/avian\\_influenza/updates/en/index.html](http://www.who.int/csr/disease/avian_influenza/updates/en/index.html)
- Over 50 guidelines published on avian influenza and pandemic influenza preparedness. [http://www.who.int/csr/disease/avian\\_influenza/guidelines/en/index.html](http://www.who.int/csr/disease/avian_influenza/guidelines/en/index.html)
- Food safety issues web site translated into French. Key messages related to food safety translated into 6 languages. <http://www.who.int/foodsafety/micro/avian/en/index.html>

## II. Strengthen the early warning system

### 1. Technical support to enhance surveillance systems

- A virtual expert group is developing the standard case definition for avian influenza to be used in outbreak investigations and for surveillance. Surveillance systems have been assessed in 30 countries (see Operations).
- Supported Burkina Faso, Cameroon, Côte d'Ivoire, Niger, Nigeria in strengthening surveillance and establishing early warning systems.
- Supported the strengthening of field epidemiology in the South-East Asia region, with technical support provided to Myanmar to strengthen the surveillance system. Published the Asia Pacific Strategy on Emerging Diseases (bi-regional publication with the Western Pacific Region) to enhance surveillance capacities.

- Support provided to MOH, Viet Nam to establish early warning system and for workshop to develop a national field epidemiology training programme (FETP). Also supported Cambodia, China and Lao PDR in strengthening surveillance capacities; in Lao PDR conducted workshops on surveillance in hospital settings; in China supported early warning and response systems.
- A workshop of the South-eastern European Communicable Disease Surveillance Project assessed the current avian influenza situation in 8 European countries. Reviewed their influenza surveillance systems and enhanced surveillance approaches, the importance of early warning systems and improving laboratory capacities. Continued work on the operationalization of national preparedness plans.

## 2. Technical support to enhance laboratory systems

- The WHO H5 Reference Laboratory Network provided support to affected countries including Azerbaijan, Egypt, Indonesia, Iraq, Nigeria and Turkey for confirmatory diagnosis. Diagnostic reagents were provided to all affected countries. Guidance manual for influenza laboratory diagnosis and surveillance is being finalized.
- In conjunction with WHO collaborating centre laboratories, WHO is developing a training programme to improve regional influenza diagnostic capacity and the coverage of influenza surveillance; training sessions have taken place in individual WHO H5 Reference Laboratories. Laboratory capacity in 30 countries has been assessed (see Operations).
- Strengthened laboratory capacity for H5 diagnosis in 2 national reference laboratories in Nigeria and in Cameroon and Côte d'Ivoire, with the collaboration with Institut Pasteur, Cameroon.
- A training course on laboratory diagnosis and surveillance was carried out for 10 countries in South-East Asia. Provided laboratory equipment and staff training for strengthening laboratory capacities in Lao PDR, Philippines and Viet Nam.
- **Sharing of virus:** Monitoring of antiviral susceptibility and virus evolution for pandemic risk assessment is ongoing. Shipping of specimens was supported from Azerbaijan, Indonesia, Iraq, Nigeria, Thailand and Turkey to WHO H5 Reference Laboratory Network. An influenza laboratory specialist was recruited to organize the collection/transfer of suspected/confirmed H5N1 specimens to reference laboratories, track specimens and link results with clinical case information.

## 3. Risk assessment of animal outbreaks

- Real-time information on rumours and verified animal outbreaks has been maintained during the increased geographical spread of animal outbreaks (over 50 countries since January 2006), the fastest and most extensive geographical spread of any highly pathogenic avian influenza virus recorded since the disease was first described in 1878. Participated in FAO/OIE/WHO meeting on further development of tripartite collaboration and development of GLEWS and contributed to FAO/OIE meeting on highly pathogenic avian influenza in Europe. Coordinated assessment and outbreak missions with FAO/OIE.

## 4. Risk assessment of human cases

- From 1 January to 31 May 2006, followed up reports from a variety of sources about possible human avian influenza events and other events of unusual acute respiratory illness in 45 countries and territories distributed across all WHO regions. Of these countries, 5 (Cambodia, China, Indonesia, Thailand, Viet Nam) had confirmed cases of human avian influenza infection prior to 1 January 2006 and 5 (Azerbaijan, Djibouti, Egypt, Iraq and Turkey) have confirmed cases since 1

January 2006. With support from WHO HealthMap team, maps of human cases of avian influenza are available on the web site: <http://gamapservr.who.int/mapLibrary/app/searchResults.aspx>

- An internet site, accessible to regional offices, has been established in SHOC to maintain information on risk assessments and other information in affected countries.

#### 5. Voluntary compliance with provisions of International Health Regulations (2005)

- The World Health Assembly adopted a resolution on the application of the International Health Regulations (IHR (2005)). This calls upon WHO Member States to comply immediately on a voluntary basis with some of the general provisions of the IHR (2005) considered relevant to the risk posed by avian and pandemic influenza including: notification to WHO of human influenza caused by a new subtype; designation of National IHR Focal Point and WHO IHR Contact Points; information-sharing and consultation with WHO. Certain provisions pertaining to public health measures for travellers, treatment of personal data and the transport and handling of biological substances, reagents and materials for diagnostic purposes are also relevant. The resolution urges Member States to undertake actions specific to the management of the current influenza situation, such as dissemination to WHO collaborating centres of relevant biological materials; mobilization of financial resources in countries affected by avian or pandemic influenza. It further calls on WHO to use the Influenza Pandemic Task Force to advise the Director-General as a temporary mechanism, until entry into force of the IHR (2005) in order to advise the Organization on the response to avian and potential pandemic influenza. WHO is requested to continue and intensify support for countries in terms of stockpiles of drugs, guidance, technical cooperation and vaccine production.

### III. Intensify rapid containment operations

#### 1. Global technical meeting to finalize the Early Containment Protocol

- A meeting on early response to a potential influenza pandemic was jointly convened by the Government of Japan and WHO in Tokyo, Japan. More than 130 participants, representatives and experts attended from 14 Asian countries, donor countries and agencies, and regional and international organizations. Participants called for effective mechanisms for early response and rapid containment. The meeting contributed to the development of the WHO protocol on the rapid containment of pandemic influenza.
- More than 70 experts in epidemiology, virology, logistics, outbreak response, health legislation, social mobilization, media communications, public health and laboratory issues participated in a meeting in March to discuss how WHO and the global public health community might effectively contain the transmission of a pandemic virus at its source. The meeting focused on three areas: operations (the logistics for mounting such an effort), surveillance and epidemiology, and public health measures (quarantines, antiviral medicines, social distancing measures).
- The draft protocol was revised in May 2006 and is published on the web site at: [http://www.who.int/csr/disease/avian\\_influenza/guidelines/protocolfinal30\\_05\\_06a.pdf](http://www.who.int/csr/disease/avian_influenza/guidelines/protocolfinal30_05_06a.pdf)

## 2. Antiviral stockpile

- Standard operating procedures are being developed to support deployment of antivirals for outbreak investigations at national level as well as the deployment of the 2 million doses for emergency use.
- The Regional Office for South-East Asia has developed Guidelines on Managing a Stockpile of Antivirals.

## IV. Build capacity to cope with a pandemic

### 1. National preparedness plans

- Over 176 countries in all WHO regions have drafted or finalized their national preparedness plans. WHO is developing a series of scenarios for country-level table top exercises, covering different aspects of national pandemic preparedness plans with a compilation of lessons learned. A global inventory of national plans is under way and a clearing house of table top exercises will be maintained.
- A pandemic preparedness and response plan for 2006-2007 for the WHO African Region was developed and endorsed by 42 Member States and partners. The plan serves as a reference for the development of the health sector component of national multisectoral preparedness and response plans.
- WHO/European Commission/European Centre for Disease Prevention and Control workshop for 52 Member States of the WHO European Region updated the avian influenza epidemiological situation and lessons learned from joint missions, reviewed the state of preparedness in the European region and identified areas for further strengthening.
- The Regional Office for South-East Asia has developed a regional plan for pandemic influenza and is developing a series of table top exercises to test national pandemic preparedness plans in the region.
- Technical assistance was provided to Brunei Darussalam, China, Cambodia, Lao PDR, Papua New Guinea, Philippines, Samoa in reviewing national pandemic influenza preparedness plans and to the secretariat of the Pacific Community in the development of the Pacific Regional Influenza Pandemic Preparedness Project.
- The Regional Office for the Western Pacific produced two interim guidelines: Exercise Development Guide for Validating Influenza Pandemic Preparedness Plans; and Creating and Tracking Pandemic Preparedness Plans: A Guide.
- In collaboration with technical partners, WHO is developing a training package consisting of a core curriculum and materials for influenza pandemic preparedness that can be used by all regions and adapted locally as needed. They will include: basic information about influenza; preparation, surveillance, detection, alert and reporting; investigation and confirmation; response, control and clinical management.
- The Regional Office for Africa developed a package of training material for national health personnel. Training workshops will be held in June and July organized by the Regional Office for Africa and by the Regional Office for Europe; a meeting to identify remaining gaps is planned for the autumn.

## 2. Effectiveness of antiviral drugs

- The Department of Essential Drugs and Medicines assembled an international panel of experts in March 2006 to develop rapid advice for the pharmacological management of patients with H5N1 infection. The recommendations are classified as strong or weak and cover several specific patient and exposure groups for the treatment and chemoprophylaxis of H5N1 virus infection. All recommendations are specific to the current pre-pandemic situation and are based on careful consideration of the current evidence about benefits, harms, burdens and cost of interventions. As there are currently no clinical trials in patients with avian influenza H5N1 disease, the overall quality of evidence on which to base judgments is very low. The advice is posted on the web site at: [http://www.who.int/medicines/publications/who\\_psm\\_par\\_2006.6.pdf](http://www.who.int/medicines/publications/who_psm_par_2006.6.pdf)
- The Regional Office for South-East Asia organized a meeting of technical experts and potential pharmaceutical manufacturers of antiviral drugs to assess capacity in the region.

## 3. Ethical issues in preparedness and response

- The project developed by the Ethics, Trade, Human Rights and Health Law Department is to aid Member States in addressing the ethical issues in influenza pandemic planning and response. The focus is on fairly prioritizing access to scarce prophylactic and therapeutic measures, balancing the risks and benefits of accelerated testing and use of vaccines, and clarifying the ethical obligations of public health authorities and health-care workers. The project also examines ethical issues arising in border control, isolation, quarantine and social distancing measures and international obligations. Four working groups have been established to develop guidance on these questions. A technical meeting of the working groups was held 18–19 May in Geneva, at which draft background papers and provisional recommendations were discussed. These will be refined for the consideration of an international consultation, which will be held in October 2006 and will be open to Member States.

## 4. Preparedness activities and meetings with key stakeholders

- Participated in Beijing Pledging Conference on Avian and Human Pandemic influenza: US\$ 1.9 billion was pledged for avian influenza control and pandemic influenza preparedness. Informal working level follow up consultations were held in March.
- Meeting with the **Asian Development Bank** to discuss collaboration with WHO on pandemic influenza preparedness in the Asia Pacific region.
- Meeting with **African Development Bank** to discuss collaboration with WHO on pandemic influenza preparedness and response in Africa.
- Meeting of directors of animal and human health from **46 African countries**, FAO, UN, UNDP, WHO, World Bank, African Union, African Bank for Development, and European Union to discuss the current situation in Africa, share national preparedness plans, and mobilize resources.
- Briefing to IMF seminar for 15 **European countries** on avian influenza and human influenza pandemic risk.
- Briefings to **UN missions** in Geneva on WHO's rapid response strategy in the event of the emergence of pandemic influenza and in New Delhi on the current avian influenza situation in South-East Asia and WHO's regional activities.
- Meeting on Pandemic Influenza in **Refugee and Displaced Populations** for UN and other international organizations, NGOs and donor agencies, including UNHCR, UNICEF, Centers for Disease Control and Prevention, Epicentre, European Commission Humanitarian Aid Department,

International Committee of the Red Cross, International Office for Migration, International Rescue Committee, Médecins sans Frontières. Discussed practical preparedness steps field staff can take to reduce impact of pandemic influenza on refugees/displaced populations and to protect agency staff. Agreed on list of supplies to be pre-positioned, importance of public health measures and interventions to implement in a camp setting. WHO guidelines now available on the web site at: [http://whqlibdoc.who.int/hq/2006/WHO\\_CDS\\_NTD\\_DCE\\_2006.2\\_eng.pdf](http://whqlibdoc.who.int/hq/2006/WHO_CDS_NTD_DCE_2006.2_eng.pdf). The Programme on Disease Control in Humanitarian Emergencies is the focal point for follow up, and is developing training material based on the guidelines for first-line health and essential services workers in refugee and displaced people settings.

- Establishment of a virtual **clinicians** network as part of the response to avian influenza in Turkey, including clinicians from South-East Asia, Turkey and experts in influenza. Three teleconferences have discussed therapeutic regimes, various treatment options, priorities for clinical management of H5 infection and research priorities.
- Presentations to Annual International School **Nurses** of Asia Conference, in Malaysia and to the **Hospital Authority** Convention 2006, Hong Kong, SAR.
- Briefings of Control Risk Seminars in Copenhagen and Stockholm on **private sector preparedness**, to the Danish national parliament and to the Danish Society for Food Science.
- Briefings and presentations to international partners in the **tourism, travel and transportation sectors**.
- Briefings to the Financial Stability Forum, a high level global committee of **finance ministry officials, central bankers and financial regulators** on pandemic risk and public health response measures. Participated in International Monetary Fund seminars for central banks and financial sector supervisors on preparedness of financial sector in the event of an influenza pandemic.
- Elaboration of a pandemic preparedness plan for "**International Geneva**" that will support harmonization of pandemic preparedness action by UN agencies and other international organizations, serving as a model for other international capitals.
- International Civil Aviation Organization (ICAO) meeting on preparations for a possible influenza pandemic from the perspective of **airlines, airports and aviation authorities**. Provided technical guidance to plans of the World Tourism Organization, IATA and the Airport Council International.
- Development of UN Medical Services Staff Contingency Plan Guidelines for An Influenza Pandemic for **WHO staff**, recommending a set of measures to protect staff and their dependants. **WHO Operations Continuity Plan** under way.

## 5. Global electronic communications

- The Information Technology and Telecommunications Group is completing the Global Public Network linking Member States through email, voice and videoconferencing.
- The Strategic Health Operations Centre (SHOC) has been the focus for the operational teams on assessment and outbreak control missions (see Operations). SHOC has also hosted over 65 briefings for the Director-General's Office on avian influenza and pandemic influenza preparedness; the SHOC in the Regional Office for South-East Asia has also been the hub for operations in the region.
- Videoconference with technical staff and web site managers from all 6 regional offices to develop standard procedures for managing web postings on avian influenza and pandemic influenza preparedness on WHO web sites.

## 6. Developing surge capacity

- A human resources plan for avian influenza and pandemic influenza preparedness was developed; twenty-two staff in the Department of Epidemic and Pandemic Alert and Response have been transferred to support the Global Influenza Programme and Alert and Response Operations. Recruitment and selection processes for required staff have been intensified. Surge capacity plans are under way for key areas of the avian influenza response in headquarters and in the regions.

## V. Coordinate global scientific research and development

### 1. Pandemic vaccine development

- Informal discussions were held with vaccine manufacturers about pandemic vaccine clinical trials (30 currently ongoing) and increasing vaccine production capacity.
- The WHO Initiative for Vaccine Research and the Department of Epidemic and Pandemic Alert and Response organized a series of 3 meetings in Geneva to facilitate processes that can provide pandemic vaccines in large quantities and more quickly than current approaches:
  - **WHO/OIE/FAO consultation on the technical feasibility of human vaccine production in veterinary vaccine production facilities during a pandemic**, with representatives from national regulatory agencies for both human and veterinary influenza vaccines, and veterinary influenza vaccine producers. The objective of the meeting was to discuss and review issues on the technical feasibility of using veterinary facilities to produce human influenza pandemic vaccines. The meeting report and presentations are posted on the WHO web site at: [http://www.who.int/csr/disease/influenza/WHO\\_OIE\\_FAOMeetingreport.pdf](http://www.who.int/csr/disease/influenza/WHO_OIE_FAOMeetingreport.pdf) . The option of using veterinary vaccine production facilities will be considered in the Global Pandemic Vaccine Action Plan, in particular for production of live attenuated vaccines.
  - **WHO consultation for the development of a global action plan for increasing pandemic vaccine supply**, with influenza experts, representatives from national immunization programmes and national regulatory authorities, and human vaccine manufacturers from both industrialized and developing countries. A draft Global Pandemic Vaccine Action Plan outlining short-, mid-, and long-term options to reduce potential pandemic influenza vaccine shortage will be available in the coming weeks. Specific web pages for the draft, background documents and working papers are being developed.
  - **WHO meeting on clinical trials of influenza pandemic vaccines**, with representatives from the vaccine industry, researchers from universities/academic institutions with ongoing pandemic vaccine clinical trials. The presentations of each company and final report will be available from the WHO web site.
- New H5N1 prototype strain for influenza pandemic vaccine: WHO collaborating centres and reference laboratories have been selecting, reviewing and developing several new recombinant H5N1 prototype vaccine strains. The latest 2 strains, developed by the WHO Collaborating Centre in St. Jude's Children's Research Hospital Memphis, Tennessee, USA were made available in May to interested manufacturers and institutions. See the web site at: [http://www.who.int/csr/disease/avian\\_influenza/guidelines/2strains2006/en/index.html](http://www.who.int/csr/disease/avian_influenza/guidelines/2strains2006/en/index.html)

## 2. Global scientific research

- The Regional Office for South-East Asia produced a bibliography of research on avian influenza and has used it as the basis for its research priorities. Participated in the second meeting of the Asian Research Partnership in Beijing.