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Regional Conference on Avian Influenza Control and Human Influenza Pandemic Preparedness and Response

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**Proceedings
Annex: Country Presentations**

Introduction

In this Annex presentations of government delegates delivered on the second day of the Regional Conference are summarized (¹). On the first day, country-level preparedness was discussed by *Simon Strickland* (UNSIC), who compared the 10 countries attending the Regional Conference with those of 23 Asian countries, based on findings of a global survey conducted in May 2006 (²). A similar study is noteworthy, which was conducted by a London-based research institution and funded by the pharmaceutical industry (³). This survey assessed the preparedness of 21 European Union countries by reviewing their national plans with a standardized methodology.

National preparedness plans, as well as presentations, technical and policy documents from country delegations and international organizations have been distributed to participants on a CD-Rom and are made available online at the following address:

[\[http://www.adb.org/Documents/Events/2006/avian-influenza-control/default.asp\]](http://www.adb.org/Documents/Events/2006/avian-influenza-control/default.asp).

Afghanistan

Abdul Hamid Ahmadzai (Department of Communicable Diseases Control, Ministry of Public Health) and *Sayed Abul Hussain Qanee* (Veterinary Department, Ministry of Agriculture, Animal Husbandry and Food Production) presented their country's National Preparedness Plan for Avian Influenza, which was developed by the National Avian Influenza Committee. This Committee, co-chaired by the Ministries of Agriculture and of Public Health, is supported by two sub-committees: for financial support, and for information, education & communication activities.

Afghanistan has an estimated poultry population of 12 million (98% in village or backyard production system with minimal biosecurity, and the remaining 2% in commercial poultry production system with low to minimal biosecurity). H5N1 outbreaks in poultry were confirmed in 10 provinces, which were contained after culling 31,000 birds. During the epidemic phase (March-May 2006), a surveillance system was established that collected nearly one thousand samples from 25 provinces. Human infection control measures targeted poultry farmers, butchers and backyard chicken farmers, considered at highest risk. In addition, hunting of wild birds was banned, as well as importation of birds/ products from countries which reported outbreaks. Technical guidelines for human and animal health staff on the control of avian influenza have been developed. Posters and information leaflets have been distributed to the population.

After the outbreak phase, it remains unclear whether the highly pathogenic avian influenza virus strain has been eradicated. Thus, periodical animal surveillance activities continued focusing on the rural poultry sector (both backyard poultry and poultry in farms), live bird markets, and villages surrounding wetlands in 12 of 25 provinces, considered at highest risk. In these provinces, human influenza sentinel surveillance sites are also being established. The surveillance network for the human health sector will be expanded to monitor 6 high-priority diseases, and integrated into the National Health Information System.

The National Preparedness Plan involves: the establishment of a disease early warning system; awareness for the general population; training for human and animal health workers on surveillance; prevention and control measures; stockpiling essential material needed for outbreak investigation and response; enhancing the capacity of hospitals to diagnose and to treat acute

respiratory infections; and laboratory diagnostic capability strengthening.

The Afghanistan government has established an intersectoral coordination mechanism of government authorities and development partners, and hopes to be able to mobilize the technical and financial resources needed to implement this Plan.

Azerbaijan

Chingiz Akhmedov (Scientific Research Institute of Veterinary Services, Ministry of Agriculture) and *Aitan Agamaliyeva* (Medical University of Azerbaijan) presented the “Action Plan to Prevent and Control Highly-Pathogenic Avian Influenza”, adopted by Azerbaijan’s State Commission on 4 March 2006. Avian influenza outbreaks occurred in birds (in Rayons of Agdam, Biljasuvar, Khyzy and Fuzuli) and in humans (in Salyan and Tarter). These included: [1] outbreaks in wild birds (with a sudden rise of reported deaths in wild birds on 12 February 2006, reaching a peak of 1650 deaths 10 days later); [2] avian influenza outbreaks in two poultry farms, where 296,000 poultry have been destroyed; and [3] avian influenza virus infection of 8 human cases, of which 5 fatal. The three reports come from the Ministry of Ecology and Natural Resources, the Ministry of Agriculture, and the Ministry of Health respectively.

Culling, disinfection, zoning and movement control proved to be effective tools to control the outbreaks in poultry. In addition, laws banned the hunting and sale of wild birds, importation of birds/ poultry products from countries with reported outbreaks, and the sale of poultry meat fried barbecue-style (as there is no guarantee that this is properly cooked).

A government coordination mechanism was established, and international agencies responded quickly as well, a.o. to help ship samples abroad and to lend RT-PCR (⁴) laboratory equipment to the State Veterinary Laboratory. A stockpile of oseltamivir (“Tamiflu”) was purchased; health care staff was vaccinated against influenza, and received training and personal protective equipment. As of mid 2006, surveillance continues in poultry farms, but insufficient compensation after culling may hamper reporting of new cases both in backyard and commercial poultry. Information and communication campaigns for the general public are ongoing; and training on the prevention, control and treatment of avian influenza is provided for human and animal health care staff.

PR China

Tayier Amuti (Animal Husbandry Bureau of Xinjiang Uyghur Autonomous Region) and *Yang Bo* (Health Bureau of Xinjiang Uyghur Autonomous Region) explained his country’s experience with successful strategies used to control avian influenza applied following outbreaks, including swift compensation to farmers whose poultry is culled as a control measure to contain the spread of avian influenza. A well-functioning compensation scheme gives an incentive to farmers who report quickly any suspicion of outbreak, such as an increase of birds dying.

China has an estimated poultry population of 5.4 billion (4.4 billion chicken [26% of the world chicken population], 0.73 billion ducks [69%], and 0.27 billion geese [89%]). Since the start of recent animal H5N1 outbreaks in April 2005, 14 out of 31 administrative divisions with province-level jurisdiction (including Xinjiang Uyghur Autonomous Region) isolated H5N1 virus in

domestic and/or wild birds. In 2004, 16 divisions had isolated the virus. Culling, disinfection, zoning and movement control proved to be effective to control local outbreaks. By mid October 2005, veterinary services counted 4.7 million poultry lost or culled, and 14.5 million vaccinated.

China's Ministry of Health has expanded its influenza surveillance network to include also avian influenza, besides seasonal influenza. From October 2005 to June 2006, this network detected 19 confirmed H5N1 human cases, most of them found in rural areas. By October 2005, the network linked up 198 national-level sentinel hospitals and 63 influenza laboratories, including 4 sentinel hospitals and 1 influenza laboratory in Xinjiang Uyghur Autonomous Region. The virus strains which were most frequently isolated during the last 3 influenza seasons are A/H3N2, A/H1N1 and B strains. The network's capacity has been enhanced in recent years, a.o. by organizing training for more than 1000 staff in 2005 alone. Surveillance and laboratory staff use a secure website to report cases of influenza and atypical pneumonia. Training and educational material has been made available at a public website. By mid 2006, companies in 6 provinces have started manufacturing influenza vaccines for poultry. Progress has also been made in the research for vaccines which could be used to control human pandemic influenza. Still many challenges remain to face influenza threats particularly to expand the surveillance system in rural areas, where 70% of the population lives.

Georgia

Paata Imnadze (National Center for Disease Control and Medical Statistics, Ministry of Labor, Health and Social Affairs) presented actions undertaken to enhance influenza early warning and response systems, as late 2005, highly pathogenic H5N1 avian influenza have been detected nearby: i.e. in Turkey, Romania, Greece, and Russia (Siberian and Western regions).

Iran

Ali Safar-Maken Ali (International Affairs Department, Iranian Veterinary Organization) shared a successful preparedness strategy implemented by the country's animal health sector.

In Iran all commercial farms have to be registered at the Veterinary Services. This registration includes the payment of a mandatory insurance fee used to fund an emergency compensation scheme for farmers affected by an avian influenza outbreak. This fund works effectively as an incentive for farmers ensuring that they report quickly any suspicion of an outbreak.

Kazakhstan

Zholshorinov Aytmagambet Shetybaevich (State Sanitary-Epidemiological Surveillance Committee, Ministry of Health) and *Kozhumuratov Asylbeck Aubeterovich* (Department of Veterinary Services, Ministry of Agriculture) shared Kazakhstan's experience with facing influenza threats. After culling 13,000 birds, and imposing movement control and zoning, 8 outbreak foci of H5N1 among wild birds and poultry (geese, ducks and chickens) were contained in North-Eastern (late 2005: in Oblasts of Akmola, Karaganda and Pavlodar) and Western (March 2006: in Mangystau Oblast) parts of the country. Rapid response teams helped control the

outbreak foci, and investigate promptly any suspicion of infection. Serological testing was used to assess possible H5N1 infection in birds and in humans. Serosurveys were conducted in humans who were in contact with diseased fowl and in persons who had suffered from pneumonia nearby the outbreak zone. Up to 10,000 laboratory tests were performed to monitor birds with (suspicion of) disease residing nearby major water reservoirs, particularly nearby the Caspian and Aral Sea Basins.

After the first outbreaks, Kazakhstan launched an influenza vaccination campaign reaching 432,000 people (3% of the population of Kazakhstan) in 2005. Hereafter the reported seasonal influenza incidence fell from 31,918 cases in the 2004/2005 season to only 797 in the 2005/2006 season. About 9.2 million Russian-made vaccine doses were purchased to immunize poultry considered at higher risk. Stockpiles of disinfectants (enough for 63,000 outbreak foci), of 556 disinfection kits, of oseltamivir (“Tamiflu”, sufficient for 15,000 people) and of laboratory reagents were purchased. Emergency posts were equipped with 494 incinerators to be used for culling of poultry when needed. An increased number of sanitary-quarantine border check posts (from 58 to 84) verified transport of goods, animals and humans. Veterinary services drafted operational procedures for the control of avian influenza in poultry farms, organized information dissemination campaigns for the general population, and training on biosafety for poultry farmers. At the Republican Sanitary-Epidemiological Station (RSSES, Almaty), the Asian Development Bank and CDC supported the training of epidemiologists (in April 2006) and laboratory experts (in June 2006) working at sub-national levels. Influenza reference laboratories have been established in the RSSES and in the Kazakhstan Research Center for Quarantine and Zoonotic Infections. A law of 1 March 2006 banned the hunting of wild waterfowl.

Early 2006, the government demanded coordinated action to enhance preparedness because of an increase of perceived risk for avian influenza outbreaks during the first two months of spring, when mass migration of wild birds occurs from Africa and South–East Asia. On 22-23 February 2006 the Ministry of Emergency Situations conducted in collaboration with the Ministries of Health, Agriculture and the Interior, a national drill to test preparedness for avian influenza outbreaks; similar drills are now planned for all sub-national levels.

Following a government meeting held on 28 February 2006, the Prime Minister issued a Decree (published on 30 March) which established a new interministerial working group for influenza control, chaired by the Ministry of Agriculture. On 17 April 2006, another Decree specified measures to control avian influenza outbreaks. Also, responsible authorities started to draft a three-year action plan (2007-2009) for the control of avian influenza. Earlier (i.e. late 2005), an interministerial “Coordination Council for Avian Flu Prevention”, chaired by the Ministry of Emergency Situations had been established, with participation of representatives of the Ministry of Agriculture, Ministry of Health, Ministry of Science and Education, Ministry of Interior, the Customs Committee and other government agencies.

Kyrgyz Republic

Abdikarimov Sabyrzhan Toktosunovich (Sanitary and Epidemic State Department, Ministry of Health), *Zhumakanov K.T.* (State Veterinary Department), and *Chekirova Cholpan Abyshevna* (Medical Radiation and Chemical and Bacteriological Protection) presented the “National Avian

Influenza Control and Pandemic Preparedness Plan”, endorsed by the Kyrgyz government on 16 January 2006, which enabled securing funds successfully from the global influenza trust fund in March 2006. Although there are several large and a number of medium-size commercial poultry producers, the vast majority of poultry are kept by smallholders in backyards. More than 80% of all Kyrgyz households are estimated to raise poultry.

Influenza surveillance has been enhanced, providing weekly updated data for the Internet Website of the Sanitary and Epidemic State Department. By mid 2006, influenza virus was isolated in 45 out of 255 persons tested, including A/H1N1, A/H3N2, and B virus strains. A serological survey showed that immunity to these viruses is low in the Kyrgyz population. Laboratory reagents and personal protective equipment for rapid response teams and for laboratory staff have been procured. Human and animal public health staff have benefited from training; and 11,000 booklets have been printed to build awareness in the population, targeting 8 different population groups. The Ministry of Health has issued several press releases.

An interministerial working group was established by government Decree on 15 January 2006. The Ministry of Health has elaborated a strategic plan, regulation about reporting of diseases caused by dangerous pathogens across borders, and an operational structure to control avian influenza. Despite of a lot of interest of the international community to support influenza control, many challenges still remain: a.o. lack of standard training tools, shortages of reagents and equipment, lack of food safety measures, poor surveillance among wild migratory birds.

Mongolia

Khun Tsegmed (Department of Health Policy and Planning, Ministry of Health), *Oyuntsetseg Dashtseren* (National Emergency Management Agency) and *Dorjsuren Pagvaa* (Veterinary Department, Ministry of Food and Agriculture) presented the “National Influenza Pandemic Preparedness Plan, 2004 – 2007” and the “Strategic Plan for the Prevention and Control of Avian Influenza Pandemic Prevention and Control” (the latter developed in 2006).

Mongolia has an estimated poultry population of 400,000 in 2005 (mostly raised in backyards); and counts 466 different bird species, including 385 migrating and 170 waterfowl species. In 2005 the veterinary services of Ulaanbaatar city counted 669 dead birds of 23 different species.

Following the H5N1 avian influenza outbreak of the summer of 2005, which affected migratory birds (wild ducks, geese and swans) nearby two lakes of northern Mongolia, movement restriction was imposed on people living nearby the outbreak zones. They underwent regular health checks, and 111 of them received influenza vaccination. Five mildly diseased children tested negative for avian influenza. Animal samples were sent promptly to an OIE Reference Laboratory in Japan, and human samples to a WHO Reference Laboratory in the USA.

Stockpiles of oseltamivir (“Tamiflu”, 2,000 doses through WHO, worth 0.5 million \$) were procured, as well as personal protective equipment (1,000 pieces), influenza vaccine for humans (9,800 doses) and for birds (60,000 doses from China), diagnostic kits, disinfectants and disinfection kits with spraying equipment. In August-September 2005, health staff of 3 regions benefited of training on the prevention and control of avian influenza and other infectious diseases. A manual on surveillance and prevention of influenza and influenza-like illness was

developed, which was used at a national training workshop held in Ulaanbaatar on 8-9 September 2005. Influenza surveillance was enhanced, starting with the establishment of 5 hospital sentinel sites in provinces and 20 such sites in the capital. Four provinces and Ulaanbaatar city benefited from a CDC-funded project to strengthen laboratory-based influenza surveillance. Vaccination of chicken covered 56,500 heads in 2005, and 186,000 in 2006 (twice). Seasonal influenza vaccination in humans has been expanded thanks to the procurement of 9,800 doses in 2005. During the previous 2004/2005 season 5,634 people had been vaccinated against influenza.

An intersectoral working group for the control of emerging and re-emerging diseases was established in 2006, which complemented an influenza advisory group that has been working since 2004. An operational framework was designed to implement the strategic plan to control avian influenza. The government allotted 0.9 million \$ to strengthen veterinary services, and 0.5 million \$ on other preparedness measures. Still many challenges remain to face influenza threats particularly to expand and upgrade the human and avian influenza surveillance system in remote areas (including transport of specimen), to strengthen its early warning and detection function, to enhance training for human and animal health workers, and to enhance public awareness building.

Russian Federation

Nikolay Anatol'evich Vlasov (Federal Service for Veterinary and Phyto-sanitary Surveillance) and *Albina Melnikova* (Federal Service for Surveillance, Consumer Rights Protection and Human Wellbeing, Ministry of Health and Social Development) presented actions undertaken by the Russian Federation's veterinary services to control and respond to influenza outbreaks.

Russia has an estimated poultry population of 470 million poultry, with half of them in about 650 larger poultry farms, and the other half in smaller-size backyard farms. Between 1978 and 2005, no highly pathogenic avian influenza has been detected in Russia. During the Summer 2005/ Spring 2006 H5N1 influenza outbreaks affected 83/ 56 villages in 10/ 11 Districts respectively of Siberia (southern Russia) and Northern Ural (western Russia). These outbreaks had started with reports of chickens, turkeys, ducks and geese dying in backyard holdings in 9 villages in late July 2005. In total, 2.5 million poultry was lost or culled (compensation was paid for every killed bird). Continued serological monitoring has been established covering a 720,000 km² large area considered at highest risk because of low-pathogenic and/or highly-pathogenic avian influenza infection; more than 90,000 laboratory tests were performed during one month. Genetic analysis showed that the same virus strain that was isolated in China in spring 2005 at Qinghai Lake had infected birds in Russia. Movement control and zoning, disinfection barriers and closed farming proved to be effective tools to control the outbreaks in poultry.

After the 2005 outbreak, new laws were endorsed to improve veterinary services; and investigation methods were improved (a.o. mapping of risk areas at macro- and micro-levels). In January 2006, Russia started production of vaccine for poultry, which is being used currently to vaccinate in high-risk zones (target: 146 million poultry). Laboratory capabilities have been enhanced at all levels. The Russian Federation has now a 4-tier laboratory network to monitor avian influenza, with 20 laboratories at the Federal Interregional level covering the 7 Federal Districts, 86 at the Oblast level, and about 800 at the Region level. At the national level there are three laboratories with a reference function for avian influenza surveillance in animals (Federal

Centre for Animal Health [FGI-ARRIAH, Vladimir City], Central Veterinary Research Laboratory [CNIVL, Moscow] and Federal Veterinary Laboratory [FGI-NIVL, Novosibirsk]), in addition to two laboratories conducting influenza surveillance among wild birds (National Institute of Virology [Moscow], State Scientific Centre for Virology and Biotechnology [NPC Vector, Novosibirsk]). Joint research projects are underway in collaboration with research groups of CIS-countries, Italy, the Netherlands, and USA. Although capabilities of local veterinary services have been improved considerably in the Russian Federation, the Districts bordering Caucasian countries and those in the south of Central Siberia are considered to remain most at risk.

Tajikistan

Murodali Sharipov (Republican Epizootic Field Investigation Centre, Ministry of Agriculture), *Navruz Jafarov* (Republican State Sanitary and Epidemiological Surveillance Center, Ministry of Health), and *Khakima Saidova* (Medical and Biological Protection Department, Ministry of Emergency Situations) presented the “Comprehensive Action Plan for Avian Influenza Control”, which was developed following a joint donor assessment of April 2006, and which enabled securing funds successfully from the global influenza trust fund in May 2006.

Tajikistan has an estimated poultry population of 2.3 million chickens; about three quarters of them is raised by households in backyards. In spring 2006, epizootic surveillance has started in wild migratory birds. By mid 2006, 1000 samples were collected from 5 different species, residing in high-risk areas nearby water basins and large poultry farms. None of the specimens were found positive for H5N1 influenza virus. More than 50,000 leaflets have been distributed to support a public awareness campaign. Initial preparations have been undertaken to establish up-to-date laboratories for the diagnosis of influenza in animals and in humans.

Tajikistan has established an interagency and interministerial Avian Influenza Task Force, (with facilitation of WHO and FAO), and an Operational Working Group for the Control of Avian Influenza. An “Emergency National Programme for the Prevention of Avian Influenza, 2006 - 2010,, has been developed to improve the capacity of veterinary services.

Still many challenges remain when facing influenza threats: a clear need for expansion and upgrading of human and avian influenza surveillance systems in remote areas (as three quarters of Tajikistan’s 6.8 million people live in rural areas), shortage of personal protective equipment, of disinfectants and of disinfection kits, lack of knowledge about bird migration routes in Tajikistan, lack of activities to increase biosafety in backyard farms, lack of training for human and animal health workers on the field, and of training for laboratory diagnosis in humans and animals. As of mid 2006, the veterinary services of Tajikistan can rely on two research institutes, 11 field offices equipped with computers, and 2,500 field workers.

Thailand

Chakrarat Pittayawonganon (Department of Disease Control, Ministry of Health) presented his country’s experience with planning and programming. The Thai government endorsed 3-year integrated national influenza plans (one for avian influenza and one for influenza pandemic

preparedness) in January 2005. Hereafter, operational plans have been drafted, as well as several sector-specific guidelines and standard operational procedures. Also, several types of exercises have been conducted to operationalize the plans (table-top, drills, full-scale exercise) at national, provincial, and local levels. Based on new knowledge, improved technology, changes in the circulation of viral strains, in behaviour, and in the environment, there is need for periodic revisions of the strategic and operational plans. Thailand is also participating in vaccine trials of international collaborative research initiatives.

Turkmenistan

Orazov Annamurad (Sanitary-Epidemiologic Service, Ministry of Health and Medical Industry), *Hudayberdy Mukhammedov* (State Veterinary Inspection, Ministry of Agriculture), and *Saparmuradov Jumamurad* (National Institute of Deserts and Environment, Ministry of Nature Protection) presented the “Interdepartmental Action Plan to Control Avian Influenza”. The plan has been costed at 1,277,000 \$; and contains three components: human health (703,000 \$), animal health (310,000 \$), and communication & family empowerment (264,000 \$).

Epizootic surveillance of migratory birds has started. By mid 2006, samples were collected from 300 birds; all of them gave negative results for H5N1 influenza virus. In addition, a standard reporting form has been designed for regular inspection of all poultry farms and of sites where migratory birds nest. The same form can be used by staff of State Veterinary Inspection, of the Ministry of Nature Protection and of the Sanitary-Epidemiologic Service. Two national-level laboratories have started performing tests to diagnose H5N1 infection based on antigen detection: one in the Ministry of Agriculture, and one in the Sanitary-Epidemiological Service (which has now polymerase-chain-reaction equipment). Limited specimen transport capacity has been made available (6 biosafety containers) by WHO, during an assessment mission conducted in April 2006. Virology testing capability development has been initiated at Oblast level in laboratories of the Sanitary-Epidemiologic Service, and of Turkmenbashee city (located at the Caspian Sea coast). Special patient isolation units have been set up in every city and every etrap (minimum 4 beds per health care facility). In total, 200 hospital beds have been allocated to admit patients with (suspected) avian influenza. Operational plans about the control of extremely dangerous pathogens in health facilities have been updated, and training for health care workers on infection control has started. Stockpiles of oseltamivir (“Tamiflu”) and other drugs have been procured. As of January 2006, the hunting of wild birds was banned, as well as import of chicken and chicken produce from countries which reported avian influenza outbreaks. In February 2006 public health training was initiated at a national-level avian influenza workshop, which was supported by WHO and UNICEF, and organized for laboratory specialists, and staff of 4 Ministries (Health & Medical Industry, Nature Protection, Interior Affairs, and Agriculture), of the Veterinary Inspection, of the Sanitary-Epidemiologic Service, and of health facilities. The Ministry of Health and Medical Industry produced and distributed printed and audio/video materials to enhance awareness on the prevention of avian influenza in the general population.

In January 2006, a presidential Decree designated the Minister of Health and Medical Industry as the coordinator of a newly established intersectoral “National Epidemiological Commission on Prevention of Avian Influenza”, which counts 14 agencies and governmental sectors as members.

During two meetings (held in August 2005 and February 2006), the “Interdepartmental Action Plan” (see above) has been prepared. Three Ministries submit weekly activity reports on avian influenza control measures to the Commission. Still many challenges remain to face influenza threats, particularly the lack of training for laboratory staff, laboratory reagents, laboratory diagnostic equipment, biosafety containers for the transportation of specimen, personal protective equipment, anti-viral medicine (oseltamivir or “Tamiflu,,), material for health education.

Uzbekistan

Rakhimov Ravshan (National Influenza Centre, Ministry of Health), *Omarov T.* (State Department of Veterinary Services, Ministry of Agriculture and Water Resources) and *Saparov H. B.* (Republican Central State Sanitary-Epidemiological Station, Ministry of Health) presented the “National Programme of the Republic of Uzbekistan on Avian Influenza Prevention and Control and Pandemic Preparedness”, which was endorsed by the Cabinet of Ministers in January 2006. Deputy-Prime Minister Kasymov, responsible for emergency preparedness, has coordinated the drafting of this plan, which integrates the planning for avian influenza outbreaks (in birds and humans) as well as influenza pandemic preparedness.

Uzbekistan has an estimated poultry population of about 7 million chickens. Epizootic surveillance has started, targeting mainly poultry in industrial units and in backyard farms. The surveillance was undertaken mid 2006 by a multi-sectoral team which consisted of 47 veterinary staff, 135 staff of Sanitary-Epidemiological Stations, and some from the Nature Protection Agency. Daily the number of poultry which died is reported to the “National Anti-epidemic Committee” (also “Anti-epizootic Epidemiological Headquarters”), a working committee formed by the Cabinet of Ministers, to coordinate all actions related to the response to avian influenza threats undertaken by sub-national administrative divisions (i.e. territorial Hakimats) and by Ministries and government agencies (Health, Defense, Interior, Agriculture, Finance, National Security Agency, Nature Protection Agency, Emergency Situations, tax committee, national railway and airline companies). Action plans for sub-national administrative divisions and for each Ministry and agency are being drafted, based on the scenarios outlined in the “National Programme”. This text includes a list of priorities for action during both the interpandemic period and during different epidemic phases; and an outline of operational guidelines for the control of avian influenza outbreaks in wildfowl, domestic birds and humans. At sub-national level, anti-epidemic committees are being established.

As of early 2006, the capability to perform laboratory diagnosis to test human and animal samples remained deficient. Only the Republican Central State Sanitary-Epidemiological Station laboratory had acquired polymerase-chain-reaction (PCR) equipment, but staff with relevant experience was not yet available. In May 2006, CDC organized training in Tashkent for about 12 laboratory scientists of 3 national level laboratories on quality assurance, and on the diagnosis of 4 dangerous pathogens (anthrax, Congo-Crimean haemorrhagic fever, plague, and tularemia), including the use of PCR. In June 2006, the Asian Development Bank supported training workshops on avian influenza early detection, reporting and control measures for public health workers of all regions (organized as a cascade in 4 locations outside the capital). ADB supported also the development of operational guidelines for the surveillance and reporting of suspected

human cases of avian influenza, which includes the development of reporting forms and case definitions to be used for public health surveillance in Uzbekistan.

The challenges to enhance preparedness to face influenza threats are outlined in the “National Programme,, (see above). These include the development of operational guidance, the training for animal health workers on epizootic surveillance and control measures, the training for human public health workers and of laboratory scientists, the stockpiling of personal protective equipment, and other material needed to ensure biosafety on the field and in laboratories, and an awareness and health information campaign, which reaches out to the population using the mass media, the education system, and local information networks.

Notes

¹ When summarizing, the following order of topics has been maintained: national strategic plan, outbreak response, actions for preparedness against influenza threats, intersectoral coordination, challenges.

² Strickland S. Preparedness at Country Level in Asia: Findings of a Global Survey. Regional Conference on Avian Influenza Control and Human Influenza Pandemic Preparedness and Response Almaty, Kazakhstan, 12-13 June 2006 (Presentation, 12 slides).

³ Mounier-Jack S, Coker RJ. How prepared is Europe for pandemic influenza? Analysis of national plans. *Lancet* 2006; **367**: 1405–11 (DOI:10.1016/S0140-6736(06)68511-5).

⁴ RT-PCR: reverse transcriptase - polymerase chain reaction