FAOAIDEnews
Avian Influenza Disease Emergency

Situation Update 46
31 May 2007

HPAI outbreaks reported in this publication refer to officially confirmed cases only.
The information is compiled from the following sources: World Organisation for Animal Health (OIE), national governments and their ministries, and the European Commission (EC) – these sources are responsible for any errors or omissions.

FAO hosting front-line technical meeting on HPAI H5N1 in run-up to New Delhi

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In the run-up to the Senior Officials Meeting on Highly Pathogenic Avian Influenza (HPAI) to be held in New Delhi in December this year, the world's leading agencies involved in the fight against HPAI H5N1 have organised a technical meeting from 27 to 29 June at FAO headquarters in Rome to assess current strategies and practices for the control of HPAI in poultry and reduction of the associated risk of human infection. Co-organised by FAO, OIE and WHO, in collaboration with UNICEF and UNSIC, the meeting is being seen as an invaluable stock-taking exercise prior to the Senior Officials Meeting in New Delhi, the fourth in a series of similar meetings (January 2006 in Beijing, China, June 2006 in Vienna, Austria, and December 2006 in Bamako, Mali).

One concrete outcome of the Rome meeting will be a report providing strategic guidance for the prevention and control of HPAI/H5NI in poultry and associated human infections, in the short, mid, and longer-term. That report, which will be circulated among the donor community and the participants of the New Delhi conference, is expected to inform and drive high-level policy and decision-making.

Addressing key questions

According to the organisers, the objectives of the technical meeting have been designed to address key questions facing international and national decision makers addressing animal disease prevention and control, the prevention of human infection, and pandemic preparedness.

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They include providing an authoritative assessment of risk; providing strategic guidance to partners on technical and policy options for cost-effective and cost-efficient measures for the effective prevention and control of highly pathogenic avian influenza in poultry and associated human infections; and identifying and building consensus on geographical and thematic priorities and key constraints that need to be overcome, in the immediate, medium, and longer term, to effectively address HPAI in poultry and associated human infection.

Information on the meeting (including background, objectives and a meeting agenda) is available for downloading (*http://www.fao.org/avianflu/en/conferences/june2007/index.html*).

Emphasis on cross-disciplinary issues

To achieve these objectives there will be strong emphasis on cross-disciplinary issues and the sharing and comparison of experiences across countries. Besides the standard opening and closing sessions, the preliminary agenda envisages four major thematic areas:

- Risk assessment
- Assessment of efforts over the last three years to address HPAI in poultry, reducing risk to humans and pandemic preparedness
- Strengthening strategic approaches
- Review of international agency programming and implementation mechanisms (this will be covered in a limited participation session)

Major talking points will include strategies for HPAI control and prevention, including socio-economic impact and communication; long-term biosecurity measures; strategies for pandemic preparedness; strengthening the relationship between public and private sectors; intra-governmental support to national and other stakeholders; strategies by types of countries (endemic, occasional outbreaks, at risk, etc.); and collaboration between veterinary and human health systems.

Satellites tracking Lake Poyang wild birds

Lake Poyang, located in Jiangxi Province, is the largest freshwater lake in China. It is fed by the Gan and Xiu rivers, which connect to the Yangtse. Widely known by birders as "the kingdom of rare birds", the Lake Poyang National Nature Reserve is home to around 520,000 wild birds at certain times of the year. The richness of its biodiversity has placed the lake on the Ramsar List of Wetlands of International Importance.

Poyang Lake is located in a globally important ecological area, housing almost 100 species of phytoplankton, 98 species of aquatic vascular plants, 65 species of molluscs, 122 species of fish, 74 plant species and, according to recent surveys, 332 wild bird species of which 124 are waterfowl.

However the wide diversity of living species, including transitory wild birds, and the health of its ecosystem are increasingly under threat from a variety of pressures including climate change, agricultural intensification and expansion, water diversion, water pollution, urbanization, and emerging infectious disease issues such as highly pathogenic avian influenza (HPAI).

In order to address the health and conservation needs of the diverse wild bird species in the Poyang Lakes National Nature Reserve, research is being carried out to better understand the ecology of wild birds, including local habitat use (lakes, wetlands and rice paddy fields), local movement patterns among these habitats, the timing of migration and migratory flyways.

An international team of scientists, biologists and veterinarians from the Food and Agriculture Organization of the United Nations (FAO), the Lake Poyang National Nature Reserve, the Chinese Academy of Sciences (Computer Network Information Center, Institute of Zoology, Microbiology, and Virology), the US Geological Survey (Western Ecological Research Center, Patuxent Wildlife Research Center and Alaska Science Center), and the University of New Hampshire (Complex Systems Research Center) is carrying out a wild bird telemetry project in the Lake Poyang National Nature Reserve.

The t eam has satellite-marked 20 wild ducks (Mallard, Eurasian Widgeon, Common Teal, Baikal Teal, Falcated Teal, Chinese Spotbill and Garganey) to learn more about migratory bird movements from this region and to document areas where transmission of the HPAI virus may be of concern in the wildlife and poultry sectors. Migration routes may also help provide insight into where HPAI might spread if wild birds play a role in this process.

For more about this research and maps of where the satellite-marked birds are now, go to http://www.werc.usgs.gov/sattrack/index.html

CRISIS MANAGEMENT CENTRE-ANIMAL HEALTH (CMC)

Bangladesh (13-26 April 2007)

CMC-Animal Health mission team returns with recommendations on how response to outbreaks of HPAI could be improved

The Bangladesh government publicly announced the country's first outbreak of highly pathogenic avian influenza (HPAI) H5N1 on 22 March 2007. Over the following month, 28 outbreaks of HPAI H5N1 were officially confirmed in nine districts (since then a further two districts have been infected), and a total of 38 farms were depopulated (more than 98,000 birds culled, according to official information). In addition to the presence of the H5N1 strain (which was confirmed by the OIE/FAO reference laboratory in Weybridge, United Kingdom), the low pathogenic H9N2 strain was identified in two samples.

Immediately following the government's announcement, the FAO Crisis Management Centre-Animal Health (CMC) offered to field a technical response mission and sent its regional avian influenza coordinator for the South Asia region (one of FAO's senior epidemiologists) to provide assistance. He was subsequently joined by a FAO operational officer and FAO's Regional Manager for Avian Influenza in Asia and the Pacific. On 13 April 2007 three CMC experts joined the senior epidemiologist and the operations officer already in place: a team leader (veterinarian), a laboratory and vaccines expert, and a response manager.

Astrid Tripodi

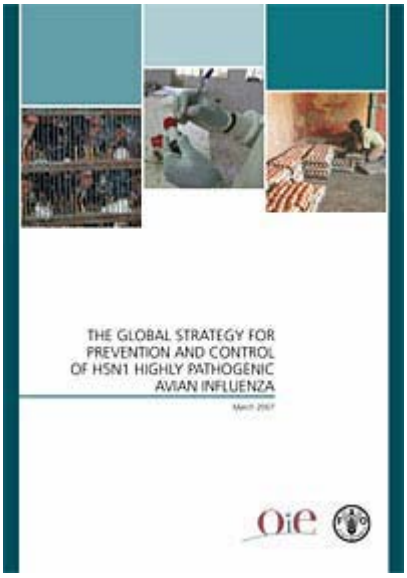
In its assessment report issued on return to FAO Rome headquarters, the team noted the commitment of the government to controlling outbreaks of avian influenza and identified a number of areas where effective response could be improved, including institutional aspects, outbreak control and surveillance activities, field and laboratory diagnosis, identification of risk factors, and information and awareness. Among others, the team called for:

- enforcement of movement control
- introduction of operational plans and standard operating procedures
- improvement of farm biosecurity measures and practices
- strengthening of outbreak investigation
- design and implementation of surveillance schemes
- strengthening and improvement of laboratory capacity for improved and timely diagnosis
- attention to risk points in the market chain, such as egg collection, trade with feed and day-old chicks, slaughtering facilities and practices in live bird markets
- strengthening of information to the general public, farmers and veterinary field staff and introduction of targeted information campaigns for specific groups

In order to assist Bangladesh in containing the spread of the virus and to strengthen its capacities for surveillance, diagnosis and outbreak response, the mission recommended the establishment of a technical assistance unit within FAO Bangladesh to include a chief technical adviser, support staff and national consultants.

The FAO/OIE Global Strategy for Prevention and Control of H5N1 Highly Pathogenic Avian Influenza (FAO/OIE)

Latest global HPAI strategy published



Although there remain serious gaps in knowledge, there has been an increased understanding of highly pathogenic avian influenza (HPAI) since the panzootic started in late 2003, and experience with various control approaches has allowed refinement of strategies at the global, regional and national levels.

The revised global strategy is based on the experience and lessons learned from the involvement of FAO and OIE in the global control of H5N1 HPAI over the last three years. It provides the long-term vision and goals, identifies priorities and strategic approaches, and proposes short-, medium- and long-term actions at national, regional and global level to control and ultimately eradicate the disease.

This strategy has been developed in collaboration with WHO and a number of experts from OIE/FAO reference laboratories.

To download a copy of the global strategy, go to ***Key Documents*** on the FAO Avian Influenza website http://www.fao.org/avianflu/en/index.html

AIDEnews offers its readers the text of the **Executive Summary** of the FAO/OIE *Global Strategy for the Prevention and Control of H5N1 Highly Pathogenic Avian Influenza*.

The FAO/OIE Global Strategy for Prevention and Control of H5N1 Highly Pathogenic Avian Influenza

Executive Summary

The *FAO-OIE Global Strategy for the Progressive Control of Highly Pathogenic Avian Influenza (HPAI)* was first developed by FAO and OIE in collaboration with WHO in response to a recommendation from the FAO/OIE Regional Meeting on Avian Influenza Control in Asia (23-25 February 2005, Ho Chi Minh City, Viet Nam). The strategy prepared in November 2005 was focused predominantly on control of the disease in East and Southeast Asia. Since then, the H5N1 HPAI situation has evolved dramatically.

The disease has spread widely in Asia, Central and Eastern Europe, the Near East and Africa, culminating in the current situation that is described in Annex 1. As of December 2006, it was estimated that over 240 million poultry had died or been culled worldwide due to H5N1 HPAI. The widespread nature of the disease, ìts mounting socio-economic impact, the increasing number of human infections and deaths and the potential threat of human pandemic influenza continue to underline the need for a global approach to H5N1 HPAI prevention and control. The revised Global Strategy presented here takes into account the accumulated experience of national, regional and global efforts to date and the lessons learned from various efforts to control the disease (summarized in Annex 2).

Global progress in HPAI control

Superficial appraisal indicates that HPAI has spread since late 2005 to affect many more countries. However, in reality, efforts over this period have been largely successful both in improving the HPAI situation in previously infected countries and in controlling or eliminating the disease in newly infected countries.

The situation has improved greatly in China, where outbreaks are now mostly limited to certain areas of the country. Progress in Thailand and Viet Nam, both of which experienced a high incidence of outbreaks in poultry and accompanying human infections has been substantial, with outbreaks in poultry now greatly

reduced and almost complete success in preventing human disease. Indonesia has struggled to establish appropriate HPAI control mechanisms but systems are being developed, with support from many donors.

India, Pakistan, Afghanistan, Myanmar, South Korea and Japan have all experienced outbreaks of HPAI that were effectively controlled, although in some countries re-introduction of disease has occurred. Most of the countries experiencing outbreaks in Central Asia, Eastern Europe and the Middle East were also able to eliminate the disease although again there have been some recent fresh outbreaks of disease in Russia, Hungary and Turkey. In Africa, Egypt and Nigeria are both facing substantial challenges in achieving effective control of HPAI; they deserve particular international assistance, since such endemically infected countries represent the highest risk both for perpetuation of the disease and for possible emergence of virus strains with human influenza pandemic potential.

Lessons learned from tools and methods used for HPAI control

Risk factors

It has become clear that countries with well developed veterinary services, with strong early disease detection and response capacities, can effectively control and eliminate H5N1 HPAI. Countries that have had most difficulty in achieving effective control are those with weak veterinary capacities and that face major risk factors such as high poultry population densities with poor biosecurity, particularly related to large smallholder production sectors and substantial duck populations. Internal movement of poultry, particularly through live bird markets and illegal movement across international borders, are major contributors to spread of the disease. Migratory waterfowl have been implicated in global spread of the disease, although the epidemiological significance of H5N1 virus infection of wild birds and other species, including pigs and cats, is not well established.

Disease surveillance

It has become evident that many countries lack the expertise to develop and implement effective national HPAI surveillance plans and to collect and analyse data. These weaknesses have compromised efforts to clearly understand specific risk factors and disease epidemiology, poultry production and marketing systems, and to properly assess vaccination programmes. Additional technical support is required to strengthen national capacities and such support must be complemented by further strengthening of networks for information collection, analysis and dissemination at regional and global levels. Limited access to compensation funds and inefficient payment mechanisms discourage farmers from reporting suspicious disease occurrence.

Laboratory capability and capacity

National veterinary diagnostic laboratory capacities are often poorly developed and resourced. OIE/FAO reference laboratories have made a significant contribution in supporting national laboratories but additional support is needed, especially at the regional level. There needs to be improved sharing of virus samples and sequence information globally and there are opportunities for national public health and veterinary laboratories to collaborate more strongly.

Containment of outbreaks

While stamping out has proved effective for containing isolated outbreaks, efforts are compromised by weaknesses in poultry movement control and surveillance around outbreaks. There is an inadequate knowledge and capacity for safe and humane culling and disposal of infected poultry. As the incidence of outbreaks increases, disease control authorities can rapidly become overwhelmed through lack of resources.

Vaccination

Vaccination has been an effective response in reducing HPAI incidence and virus load in the environment, thus minimizing the risk of further spread and human exposure to infection. Planning must anticipate the reinstallation of classical control measures such as stamping out when the number of outbreaks is low. Vaccination has proved very effective in high-risk countries where re-introduction of disease is likely, but it must be conducted in accordance with guidelines, involve vaccines of assured quality and be accompanied by appropriate monitoring of immune response and infection status of vaccinated flocks.

Adjustment of poultry production and marketing chains

In Asian countries where the disease has been present for a long period and where the greatest combination of risk factors are present, experience indicates that stamping out of infected flocks provides short-term improvements in HPAI status but does not guarantee long-term freedom. Appropriate changes are needed in poultry disease management practices on farms and to high-risk marketing practices such as uncontrolled movement of poultry through live bird markets.

Communication

Communication serves as a facilitating mechanism for building an enabling environment, through which the global strategy for the prevention and control of HPAI can be successfully understood and implemented. In addition, despite recognition of the importance of public awareness and considerable efforts made to date, there has been only limited success in achieving the behavioral changes required to control HPAI. It has become very evident that over-reaction of communities to HPAI can have an adverse affect on poultry markets. Balanced, consistent and scientifically sound messages are needed to promote safe poultry production practices and appropriate consumer caution, without precipitating undue market disruptions.

Moving to a revised strategy

Experience and lessons learned at the global, regional and national levels in controlling H5N1 HPAI permit revision of the global strategy with greater understanding of the issues that need to be addressed and the means of achieving progress. The strategy identifies international initiatives at global and regional levels, and approaches that are appropriate for national implementation, in general terms but also in line with the HPAI status of individual countries.

The vision

The strategy envisages a world with greatly reduced threat of H5N1 virus infection in poultry, leading to reduced public health risk, secured national, regional and global markets and trade in poultry and poultry products, and protection of an important element of the livelihoods of poor farming communities.

The priorities

To achieve this vision, three priorities related to country HPAI status must be addressed concurrently:

- In the small number of endemically infected countries, particular attention must be given to reducing the incidence of HPAI.
- In countries in which sporadic outbreaks are currently occurring, intensive efforts to eradicate the disease must be supported; given the current disease situation, this is possible.
- In countries particularly at risk of incursion or in countries suffering severe consequences as a result of incursion, HPAI preparedness and capacity for early detection and response must be improved.

Strategic domains

The strategy proposes approaches at the global, regional and national levels. The global and regional approaches are those that FAO and OIE will follow themselves and will advocate to other donor and implementing agencies in the search for a harmonized approach to addressing the needs. The national approaches outline principles that FAO and OIE recommend as appropriate to various country situations.

The global domain

The goal is to provide global leadership in generating and providing sound technical and policy advice in coordinating and harmonising national, regional and global plans, and in improving the effectiveness and efficiency of programming and implementation of disease prevention and control.

The proposed activities focus on support to countries in planning and implementing their plans for HPAI prevention and control, including provision of technical advice and operational support, and international collaborative initiatives for supporting international research, surveillance, early warning and epidemiological analysis of disease outbreaks and information dissemination. The approach includes the development within FAO of the Emergency Centre for Transboundary Animal Diseases; within OIE, the establishment of the World Animal Health and Welfare Fund directed towards improving governance in veterinary services worldwide; and the establishment of the FAO/OIE Crisis Management Centre to increase capacity for early response to significant disease events.

The strategy also calls for general political support at global, regional and national levels and mobilization of donor funding to address the needs of HPAI prevention and control.

The regional domain

The goal is to enhance cooperation and collaboration among regionally-grouped countries through greater engagement and commitment from appropriate regional organizations for a harmonized and coordinated approach to control and eradication of H5N1 HPAI.

This approach focuses on the development of formal long-term and sustainable cooperation and collaboration, taking into account regional specificities, for the development of policies and regulatory

frameworks related to regional trade in livestock and livestock products, harmonization of HPAI control strategies, HPAI surveillance and reporting and HPAI preparedness planning. Regional organizations, including OIE Regional Commissions and the elected Bureaus, are seen as the focal points for such initiatives, supported by OIE and FAO Regional Animal Health Centres, instituted with the coordination of regional GF-TADs steering committees. Strategic initiatives include building of regional capacity and enhancing the role of regional and sub-regional networks for epidemiological and laboratory expertise and networks of economists, social scientists and poultry production specialists. Regional laboratories will be identified and supported to provide reference services, reagents and training to national personnel.

The national domain

The goal is to progressively define the status of countries within the priority categories and, for most of them, eliminate H5N1 virus circulation in poultry populations using livelihoods-sensitive approaches. In those countries in which HPAI is currently endemic, the disease will either be eradicated or greatly reduced in incidence, with its geographic and sectoral distribution well defined.

Recommendations are made for general measures that need to be addressed for HPAI prevention and control and specific measures that apply to different disease situations. The broadly applicable key measures are:

- strengthening of veterinary services and related national capability, including compliance with OIE standards and guidelines on quality and evaluation of veterinary services;
- poultry industry adjustment and changes in husbandry practices to improve biosecurity;
- strategic research initiatives;
- support for public communication; and
- provision of technical assistance, as required

Key among these is overall strengthening of national veterinary services, including OIE assistance in assessing veterinary services by established procedures, strengthening capacity for disease surveillance and epidemiological analysis, and improving operational capacity for disease control, for which early detection and rapid response are essential. Poultry industry adjustment proposals need to take into account not only the benefits of improved biosecurity but also the potential threat of adversely affecting the livelihoods of poor farmers. This threat must also be considered when designing control strategies. Public awareness must be supported to promote practices that limit the risk of HPAI transmission and reduce the risk of human exposure to H5N1 virus.

There are significant gaps in our understanding of the H5N1 HPAI virus and technologies and tools to control it. Thus the strategy promotes strategic research initiatives, including epidemiological studies of HPAI in different farming systems (including risk analysis and critical control point definition within market chains), continuous monitoring of variation in H5N1 virus characteristics, monitoring of wild bird involvement in H5N1 virus dissemination, development of new vaccines and diagnostics, and studies of the socio-economic and biodiversity impacts of H5N1 HPAI incursion and control.

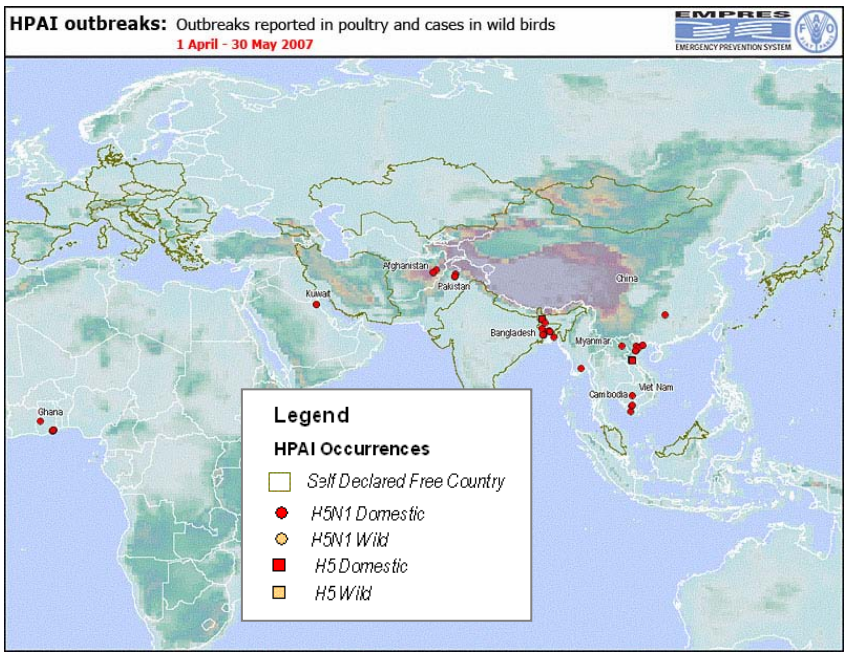
Implementing the strategy

The strategy is designed as a guide to FAO and OIE programmes of support for HPAI prevention and control. However, it is also advocated to other global, regional and national implementing agencies and donors as a means of achieving uniformity of approaches. This is described in Annex 3, together with proposed milestones for monitoring progress in HPAI prevention and control.

The strategy will be implemented progressively over the next ten years, as funds become available, beginning with the highest priorities for 2006-2008. It will be coordinated jointly by FAO and OIE and harmonized with the WHO Strategic Action Plan for Pandemic Influenza 2006-2007*.

* http://www.who.int/csr/resources/publications/influenza/WHO_CDS_EPR_GIP_2006_2c.pdf

Outbreak Map
(1 April – 30 May 2007)



NOTE: This map represents occurrences of H5 and H5N1 reported from 1 January 2007 to 19 February 2007. H5 cases are represented for countries where N-subtype characterization is not being performed for secondary cases or if laboratory results are still pending. Countries with H5 and H5N1 occurrences only in wild birds are not considered infected according to OIE status.

AT A GLANCE

The latest HPAI outbreaks for the period 1 March 2007 to 30 May 2007

Note
AIDEnews publishes reports of **confirmed HPAI cases only** to avoid any form of association with rumours or suspicions. AIDEnews uses the following sources, which are clearly identified for all reports: FAO, OIE, European Commission, United Nations and national governments.

AFRICA

Egypt

On March 15, the government reported five outbreaks of HPAI: among ducks in a backyard duck-raising system at Arment, in Qena Governate; backyard geese and chickens at Beni Mazar, Menya Governate; backyard geese and ducks at Ikhmeem, Sohag Governate; backyard ducks and chickens at Tanta, Gharbiya Governate; and backyard geese and chickens at Montazah, Alexandria Governate. In all cases, the infected birds were culled.

Ghana

Avian influenza in poultry was officially reported May 2 on a small commercial poultry farm at Tema, Ghana's main port city, some 20 kms east of the capital, Accra. All 1,678 birds on the farm, mostly chickens and some ducks, were incinerated to control the disease. Following the outbreak, the country's first ever, the government issued a ban on the movement of live birds in the region to prevent the spread of the disease. The Tema metropolitan area was declared an avian influenza infected area, and a ban placed on movement of live birds from any farm in the area, including local birds within the area and outside the Tema metropolitan area. In addition, all live bird markets were immediately closed.

The country reported a second outbreak May 23 at a farm near the town of Sunyani, about 400 kms north of the capital. Gary Quarcoo, head of veterinary services at the Ministry of Agriculture, said veterinary officials culled thousands of birds in the area and destroyed animal feed and farm equipment.

Nigeria

FAO reported May 15 an outbreak of HPAI in Igando village in Alimosho, Lagos state. It said that on May 9, 310 chickens had died and 1,380 had been depopulated. Other outbreaks were reported May 4, one in Kaduna state and the other in Zamfara state. The Zamfara outbreak was said to have involved more than 100 local birds.

ASIA

Afghanistan

FAO reported May 1 that altogether 22 outbreaks had been registered in four provinces – Kunar (4 outbreaks), Nangharar (13), Kabul (4) and Kapisa (1), where the last outbreak occurred on 17 April 2007. Eighteen outbreaks affected households with a limited number of birds, one affected about 130 chickens, one was an isolated case concerning a pigeon, and two referred to ornamental birds in Kabul.
with outbreaks were

Bangladesh

Eleven outbreaks of HPAI H5N1 in poultry were reported May 24 concerning the period Apriol 3-17. The outbreaks occurred in Dhaka (5), Magura (1), Gaibandha (1), Jessore (3) and Noakhali (1), and killed 3,783 birds. A total of 24,297 birds were destroyed.

FAO reported April 20 that five suspected outbreaks of HPAI were recorded April 19. One of them, on Monia farm in Savar subdistrict, tested negative with a rapid test for two consecutive days, but was subsequently tested positive by PCR for H5 on April 19.

China

The government reported May 19 an outbreak of HPAI H5N1 in Hunan Province, where almost 11,200 ducklings had died on April 13 in the village of Shijiping, Fuqiushan Town, Taojiang County, Yiyang City.

On March 5, the National Avian Influenza Reference Laboratory conducted tests on 325 domestic poultry samples and 25 wild bird samples from Jian On City, Fujian Province, and isolated the H5 avian influenza virus from three wild birds (a pied magpie, a corncrake and a hawk) and from a chicken and a duck.

Outbreaks of HPAI were confirmed March 6 in chickens from Lhassa, Tibet Province. 680 birds died and 6,990 were culled.

Hong Kong SAR

The government reported March 9 that a long-tailed shrike found in Hung Hom had been confirmed as H5N1 positive after a series of laboratory tests. The carcass of the bird had been found at Hung Lok Road on March 3.

Japan

A case of HPAI H5N1 infection in a hawk eagle was reported April 20. The bird had been found more than three months earlier, in early January, in the village of Sagara, Kumamoto, on Kyusyu Island.

Lao PDR

Four outbreaks of HPAI were reported March 14 in backyard chickens and ducks in Ventiane, Savannakhet and Champasak.

Myanmar

An outbreak of HPAI H5 was reported May 28 in Yangon Province on a layer poultry farm, where 15 birds died and another 851 were destroyed.

An outbreak of HPAI was reported March 20 in layer chickens in Hmawbi, Yangon. Over 1,640 birds died and almost 20,700 were destroyed. It appeared that a low level biosecurity had facilitated virus introduction.

Three outbreaks of HPAI were reported March 14 in layer chickens, guinea fowls and quail in Yangon, southern Myanmar. Again, a low level of biosecurity was in place.

An outbreak of HPAI was confirmed March 7 in layer chicken from Kyon Su, Hlaingthayar, Yangon (North), Rangoon.

Pakistan

Four outbreaks of HPAI H5N1 were reported May 25, all in Islamabad Capital Territory. Three concerned commercial poultry farms and one a backyard farm with peacocks and native birds. A total of 5,627 birds died and 11,697 were destroyed.

Four outbreaks of HPAI H5N1 were reported March 31 in four farms (one with layer hens and three with broilers) in North-West Frontier Province. A total of 1,419 chickens died.

Seven outbreaks of HPAI H5N1 were confirmed March 21: five occurred in Peshawar in the Northwest Frontier Province in backyard poultry and zoo birds; one occurred in ostriches in Rawalpindi, Punjab Province, and the seventh occurred in Islamabad in wild crows.

Pakistan's National Reference Laboratory for Poultry Diseases confirmed March 14 two cases of HPAI H5N1 in crows and black partridges in Peshawar and Charsada, Northwest Frontier Province. Two birds of each species
were reported dead.

Republic of Korea

An outbreak of HPAI was reported March 8 on a breeding duck farm in Dong-myun, Cheon-An, Ch'ungch'ong-Namdo. Out of 13,560 susceptible birds, three died and the remainder destroyed.

Thailand

An outbreak of HPAI was reported March 20 in poultry in Bang Sai Yai, Mukdahan province. The birds (turkeys, muscovy ducks and native chickens) were being kept in two houses with no biosecurity in place.

Viet Nam

The government reported May 25 the deaths of 2,120 out of a total of 3,320 ducks in Unit No. 13 in Hoa Binh commune in Vinh Bao district, Hai Phong Province. All were 14-day-old unvaccinated ducklings. Samples tested positive with H5N1 virus. All remaining birds were destroyed.

The government reported May 28 the deaths of 60 chickens and 510 muscovy ducks al of 3,320 ducks in the hamlet of Dai Trach, Dinh To commune, Thuan Thanh district in Bac Ninh Province. Samples tested positive with H5N1 virus. All remaining birds were destroyed.

The government also reported May 28 that since the beginning of the month, avian influenza had re-occurred in 10 provinces, including Ngh. An, Nam Đ.nh, Son La, H.i Phòng, Qu.ng Ninh, B.c Giang, Đ.ng Tháp, C.n Tho, Ninh Bình, B.c Ninh.

On May 23, the government reported that suspected cases of avian influenza had been found in unvaccinated poultry five days earlier in the village of Tan Lap, Tan Viet commune, Dong Trieu district, Quang Ninh Province. Laboratory analysis confirmed the H5N1 virus as the cause of the death of 256 out of 270 60-day-old muscovy ducks, and 40 out of 50 60-day-old chickens.

The government reported May 21 that HPAI had occurred in a household in village No 7, Hai Yen commune, Mong Cai town, in Quang Ninh. Out of a flock of 443 35-day-old unvaccinated ducks and muscovy ducks, 116 died.

On May 17, HPAI was detected in two duck-raising households in the commune of Thach Loc, Vinh Thanh district, in Can Tho. 375 out of 1,500 ducks died. The following day, an outbreak was reported in another household raising ducks and muscovy ducks in the village of Ban, Chieng Mai commune, Mai Son district in Son La. 100 out of 600 ducks died and 100 out of 360 muscovy ducks died. All were aged between 20 and 30 days, and all were unvaccinated.

On May 19, avian influenza was notified among smallholders raising ducks in three communes in three districts in Nam Dinh. in the first household in Thuong Dong hamlet, Hien Khanh commune, Vu Ban district, 150 out of 450 ducks died; in the second, in hamlet No. 7, Nam Toan commune, Nam Truc district, 975 out of 1,400 ducks died; in the third, in hamlet No. 1, My Thanh commune, My Loc district, 150 out of 1,100 ducks died. The ducks in all three cases were unvaccinated.

Outbreaks of HPAI H5N1 were reported May 17 in three unvaccinated duck flocks in Hung Nguyen and in two unvaccinated 40-day-old duck flocks in Dien Chau, all in Nghe An Province. In total, 1,534 ducks died.

On May 9, Regional Animal Health Office No. 3 (RAHO No. 3) reported that 1,298 out of 3,800 unvaccinated ducks had died in three households in Block No 5, Hung Nguyen town, Hung Nguyen district. Laboratory results confirmed the presence of the H5 avian influenza; the following day, RAHO No. 3 said that 50 unvaccinated ducklings had died since May 7 in Village No. 11 , Dien Tho commune, Dien Chau, in Nghe An Province.

NEAR EAST

Kuwait

Two outbreaks of HPAI H5N1 were reported May 7 in Wafra Wafra, Al Ahmadi, on two commercial chicken farms (the reports referred to outbreaks on March 25 and 26 March). A third outbreak was reported on the same date (referring to April 20) on an ostrich farm. A total of 44 birds died and 463,826 were destroyed.

Eleven outbreaks were reported March 13 on backyard farms in various locations: Moubarakal al Kabeer, Al Kuwayt, Al Ahmadi, Al Farwaniyah, Hawalli and Al Jahrah. The birds affected were mostly chickens, and some turkeys, guinea fowls, pigeons, falcons and quails.

Saudi Arabia

An outbreak of HPAI was reported March 30 in Al-Gamma at a private rest house, where 106 out of 670 birds died.

EUROPE

Russian Federation

Two outbreaks of HPAI were reported March 20 in backyard native chickens in Krasnogvardeisk, Republic of Adygeya, south-west Russia.

MOST RECENT OUTBREAKS 2006-07

Bangladesh, Ghana (May 2007)
Cambodia, Kuwait, Pakistan (April 2007)
China, China (Hong Kong SAR), Egypt, Korea (Republic of), Myanmar, Russian Federation, Saudi Arabia, Thailand, Turkey, Viet Nam (March 2007)
Lao PDR, Nigeria (February 2007)
Hungary, Japan, United Kingdom (January 2006)
Cote d'Ivoire (November 2006)
Indonesia (October 2006)
Germany, Sudan (August 2006)
Spain (July 2006)
Mongolia, Niger, Romania, Ukraine (June 2006)
Burkina Faso, Czech Republic, Denmark (H5), Poland (May 2006)
Afghanistan, Djibouti, France, India, Sweden (H5), West Bank & Gaza Strip (April 2006)
Albania, Austria, Azerbaijan (H5), Cameroon, Croatia, Greece, Israel, Jordan, Kazakhstan, Malaysia, Serbia, Slovenia, Switzerland (H5) (March 2006)
Bosnia-Herzegovina, Bulgaria, Georgia, Iran, Iraq (H5), Italy, Slovakia (February 2006)

Green: wild birds only

Sources: FAO, World Organisation for Animal Health (OIE), European Commission (EC), United Nations and national governments

SUMMARY OF CONFIRMED HPAI OUTBREAKS IN AFFECTED COUNTRIES

(as of 16 May 2007)

Sources: FAO, World Organisation for Animal Health (OIE), European Commission (EC), United Nations and national governments – World Health Organisation (WHO) for human cases/deaths

Note: Highlighted countries indicate those in which there has been only one officially confirmed outbreak or occurrence

EUROPE Country	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Albania	16 February 2006	9 March 2006	Domestic poultry	-
Austria	10 February 2006	22 March 2006	Wild birds – cats	-
Azerbaijan	2 February 2006	18 March 2006 (H5)	Wild birds – domestic poultry – dogs	**8 / 5**
Bosnia-Herzegovina	16 February 2006	16 February 2006	Wild birds	-
Bulgaria	31 January 2006	9 February 2006	Wild birds	-
Croatia	21 October 2005	24 March 2006	Wild birds	-
Czech Republic	27 March 2006	19 May 2006	Wild birds	-
Denmark	12 March 2006	26 May 2006	Wild birds – domestic poultry	-
France	17 February 2006	26 April 2006	Wild birds – domestic poultry	-
Georgia	23 February 2006	23 February 2006	Wild birds	-
Germany	8 February 2006	2 August 2006	Wild birds – domestic poultry – cats – stone marten	-
Greece	30 January 2006	27 March 2006	Wild birds	-
Hungary	4 February 2006	23 January 2007	Wild birds – domestic poultry	-
Italy	1 February 2006	19 February 2006	Wild birds	-
Poland	2 March 2006	7 May 2006	Wild birds	-
Romania	7 October 2005	6 June 2006	Wild birds – domestic poultry – cat	-
Russian Federation	15 July 2005	20 March 2007	Domestic poultry – wild birds	-
Serbia	28 February 2006	16 March 2006	Wild birds – domestic poultry	-
Slovakia	17 February 2006	18 February 2006	Wild birds	-
Slovenia	9 February 2006	25 March 2006	Wild birds	-
Spain	7 July 2006	7 July 2006	Wild birds	-
Sweden	28 February 2006	26 April 2006 (H5)	Wild birds – domestic poultry - game birds - mink	-
Switzerland	26 February 2006	30 March 2006 (H5)	Wild birds	-
Turkey	1 October 2005	1 March 2007	Domestic poultry – wild birds	**12 / 4**
United Kingdom	30 March 2006	27 January 2007	Wild birds – domestic poultry	-
Ukraine	2 December 2005	11 June 2006	Wild birds – domestic poultry – zoo birds	-

AFRICA Country	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Burkina Faso	1 March 2006	20 May 2006	Domestic poultry - wild birds	-
Cameroon	21 February 2006	28 March 2006	Domestic poultry – wild birds	-
Côte d'Ivoire	31 March 2006	9 November 2006	Domestic poultry – wild birds	-
Djibouti	6 April 2006	6 April 2006	Domestic poultry	**1 / 0**
Egypt	17 February 2006	15 March 2007	Domestic poultry – wild birds	**34 / 13**
Ghana	14 April 2007	2 May 2007	Domestic poultry	-
Niger	6 February 2006	1 June 2006	Domestic poultry	-
Nigeria	16 January 2006	14 February 2007	Domestic poultry – wild birds	**1 / 1**
Sudan	25 March 2006	4 August 2006	Domestic poultry	-

NEAR EAST Country	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Iran	2 February 2006	2 February 2006	Wild birds	-
Iraq (H5)	18 January 2006	1 February 2006	Domestic poultry – wild birds	**3 / 2**
Israel	16 March 2006	30 March 2006	Domestic poultry	-
Jordan	23 March 2006	23 March 2006	Domestic poultry	-
Kuwait	23 February 2007	20 April 2007	Domestic poultry – wild birds	-
Saudi Arabia	12 March 2007	12 March 2007	Domestic poultry	-
West Bank & Gaza Strip	21 March 2006	2 April 2006	Domestic poultry	-

ASIA Country	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Afghanistan	2 March 2006	17 April 2006	Domestic poultry – wild birds	-
Bangladesh	22 March 2007	14 May 2007	Domestic poultry	-
Cambodia	12 January 2004	6 April 2007	Domestic poultry – wild birds	**7 / 7**
China	20 January 2004	14 March 2007	Domestic poultry	**24 / 15**
China (Hong Kong SAR)	19 January 2004	6 March 2007	Wild birds	-
India	27 February 2006	18 April 2006	Domestic poultry	-
Indonesia	2 February 2004	October 2006	Domestic poultry – pigs (with no clinical signs)	**81 / 63**
Japan	28 December 2003	30 January 2007	Domestic poultry – wild birds	-
Kazakhstan	22 July 2005	10 March 2006	Domestic poultry – wild birds	-
Korea, Rep. of	10 December 2003	8 March 2007	Domestic poultry – wild birds	-
Lao, PDR	15 January 2004	28 February 2007	Domestic poultry	**2 / 2**
Malaysia	19 August 2004	21 March 2006	Domestic poultry – wild birds	-
Mongolia	10 August 2005	June 2006	Wild birds	-
Myanmar	8 March 2006	29 March 2007	Domestic poultry	-
Pakistan	23 February 2006	2 April 2007	Domestic poultry – wild birds	-
Thailand	23 January 2004	20 March 2007	Domestic poultry – wild birds – tiger	**25 / 17**
Viet Nam	9 January 2004	22 March 2007	Domestic poultry	**93 / 42**

ANNEX 1 CONTACT POINTS

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ANNEX 2 LABORATORIES AND SAMPLE SHIPPING INFORMATION

ITALY

OIE/FAO and National Reference Laboratory, Istituto Zooprofilattico Sperimentale (IZS) delle Venezie, Padova

Types of specimen
Specimens for analysis may be virus isolates prepared in a submitting country or clinical specimens, such as tissues or swabs, collected from diseased birds.

Note:
Venice Marcopolo Airport only accepts material classified as "diagnostic samples" (code UN3373).

Packaging requirements
All materials should be in leak-proof containers. Packaging should be made up of three layers: (1) primary container, (2) secondary packaging and (3) rigid outer packaging.

Packaging of "diagnostic samples" (code UN3373) should comply with IATA PI650 standard. Packaging of "virus isolates" (code UN2814 for avian influenza virus and UN2900 for Newcastle virus) should comply with IATA PI602 standard.

Contact couriers to confirm the provision of boxes complying with these requirements.

Accompanying documents for clearance
Import permissions of the Italian Ministry of Health (formerly provided by the IZS).
A signed pro forma invoice (original with signature, no photocopy accepted) should be attached firmly to the box.

Shipping
Air freight or couriers via Milan Malpensa Airport (recommended, airport code: MXP), Rome Fiumicino Airport (couriers only, airport code: FCO) or Venice Marcopolo Airport (airport code: VCE, for diagnostic samples only, no isolates – code UN3373).

Arrange for shipments to arrive in Italian airports from Monday to Thursday only.

Shipping address
Istituto Zooprofilattico Sperimentale delle Venezie
Virology Department
Viale dell'Universita' 10
35020 Legnaro, Padova
Italy

Notification of shipment
Before shipping, please supply the IZS contact person with the following information:

- Date of embarkation
- Airline name and flight number
- Date of arrival in Italy
- Name of destination airport
- Airway bill number (fax as soon as possible to: [+39] 049 808 4360)
- Person to contact with the results of analysis (supply name, fax number and e-mail address)

Contact people at IZS

For diagnostic samples and viral isolates
Micaela Mandelli (mmandelli@izsvenezie.it)
Maria Serena Beato (msbeato@izsvenezie.it)
Phone: [+39] 049 8084371
Fax: [+39] 049 8084360

For reagents
Micaela Mandelli (mmandelli@izsvenezie.it)
William Dundon (wdundon@izsvenezie.it)

Other contact persons
Giovanni Cattoli (gcattoli@izsvenezie.it)
Alessandro Cristalli (acristalli@izsvenezie.it)

Important: Contact the IZS to discuss testing and testing materials before shipping. Provide details of the contact person with whom IZS should keep in touch.

UNITED STATES OF AMERICA

National Veterinary Services Laboratories (NVSL), Ames, Iowa

Import permit
Packages containing diagnostic specimens or organisms (infectious materials) imported from foreign locations into the United States of America must be accompanied by a permit issued by the U.S. Department of Agriculture. This permit, together with proper packaging and labelling, will expedite clearance of the package through U.S. Customs. One copy of the permit should be attached to the outside of the shipping container and a second copy placed just inside the lid of the outer shipping container. The permit can be obtained from NVSL.

Packaging requirements
All materials should be in leak-proof containers and packaged to withstand breakage.
All materials should be properly labelled.

Shipping address
National Veterinary Services Laboratories
Diagnostic Virology Laboratory
1800 Dayton Avenue, Ames, Iowa 50010
United States of America

Notification of shipment
Please provide the Diagnostic Virology Laboratory with shipping information (date of arrival, airline/courier, weigh bill number, etc.) as soon as it is available. Fax information to (+1) 515 663-7348 or telephone (+1) 515 663-7551.

Contact
Dr. Beverly J Schmitt
Tel (+1) 515 663 7532
Fax (+1) 515 663-7348
Beverly.J.Schmitt@usda.gov

AUSTRALIA

Australian Animal Health Laboratory (AAHL), Geelong

Type of specimen
Specimens submitted to AAHL for disease diagnosis may be either virus isolates prepared in the submitting country or clinical specimens, such as tissues or swabs, collected from diseased birds.

Import permit and packing
Copies of Australian import permits, suitable transport containers and packing instructions are available from AAHL by contacting aahl-accessions@csiro.au.
All specimens must be packed in leak-proof containers in accordance with appropriate IATA regulations and appropriately labelled. Copies of the import permit and other consignment details should be attached to the outside of the package to expedite clearance through Australian customs.

Notification of shipment
When submitting specimens, please contact the accessions clerk at accessions@csiro.au, the Duty Veterinarian at dutyvet@csiro.au or Dr. Peter Daniels on (+61) 3 5227 5000 and provide consignment details (including consignment note/air weigh bill number, courier/airline and expected arrival date) so that the specimens can be collected upon arrival in Australia. Alternatively send the information by fax to
(+61) 3 5227 5555.

Shipping address
The Director
Australian Animal Health Laboratory
5 Portarlington Road, Geelong, 3220
Australia

Telephone (+61) 3 5227 5000
Fax (+61) 3 5227 5555
http://www.csiro.au/aahl

Contact
You may also wish to discuss the testing required with Peter Daniels (peter.daniels@csiro.au) or Paul Selleck (paul.selleck@csiro.au) on (+61) 3 5227 5000 prior to submitting the specimens.

UNITED KINGDOM *(from outside the European Union)*

Avian Virology Laboratory, Veterinary Laboratories Agency, Weybridge

Packaging requirements
All materials should be in leak-proof containers, packed to IATA regulations by a registered IATA packer. At least two layers of packaging should be used and the inner layer treated lightly with disinfectant.

The outer packaging must be marked as follows:
ANIMAL PATHOGEN - PACKAGE ONLY TO BE OPENED AT THE AVIAN VIROLOGY SECTION, VETERINARY LABORATORIES AGENCY, WEYBRIDGE, SURREY

The packaging must also be marked with one of the following IMPORT LICENCE NUMBERS:
For Newcastle disease: AHZ/2232/2002/5
For avian influenza, other viruses, avian tissue, serum, faeces and eggs: AHZ/2074C/2004/3

Shipping address
Ruth Manvell
Avian Virology Laboratory
Veterinary Laboratories Agency (VLA)
Weybridge, New Haw, Addlestone, Surrey KT15 3NB
United Kingdom

Shipment instructions
A letter should accompany parcels with as much history about the isolates as possible (including species and age, area/country of isolation, clinical history if any, etc.).

If sending by air freight, it is essential that the airway bill number is given to the Avian Virology Laboratory, VLA-Weybridge by fax, telephone or e-mail before the arrival of the materials in order to facilitate early delivery.

Notification of shipment
Before dispatch, notify the Avian Virology Laboratory, VLA-Weybridge of the shipment details and the person to contact with information on results (name, fax number, e-mail address).

Tel : (+44) 01932 357736
Fax: (+44) 01932 357856
e-mail: r.manvell@vla.defra.gsi.gov.uk

Contact
If you wish to discuss a submission and options for support from the International Reference Laboratory for Avian Influenza and Newcastle Disease, please contact:
Dr. I. H. Brown
Tel: (+44) 01932 357 339
Fax: (+44) 01932 357 239
e-mail: i.h.brown@vla.defra.gsi.gov.uk