



Stopping HPAI H5N1

A complex communication challenge and landscape

Risk communication has been described as something that "...uses responsible speculation, it acknowledges uncertainty, it shares dilemmas about what to do, and it does not aim for zero fear."

Avian Influenza communication campaign strategies are working on the perception of risk in the public imagination, to catalyse change in behaviours and practices of millions of poultry producers, traders and sellers. However, Knowledge-Attitude-Practices (KAP) studies in several countries, as well as anthropological studies in some countries indicate, that while levels of awareness about the disease are high, the same has not translated into changes in behaviours. Clearly, poor communities and poultry farmers perceive the risk of avian influenza infections to themselves and their poultry as very low, especially in relation to other competing priorities. The 'international community' on the other hand, and especially the media and the on-line community seem to be seized with outbreak narratives and disaster metaphors, conjuring up a politics of fear and blame. The associated emergency/crises responses have tended to focus on the outbreaks themselves i.e. on disease incidence, and not on underlying factors or the drivers of disease emergence and spread.

Historically, and from a public health point of view, the story of global influenza pandemics has its roots in the 1918 "Spanish Flu" pandemic when an estimated 50 million people were killed. Two other pandemics -- the "Asian Flu" of 1957 and the "Hong Kong Flu" of 1968, respectively killed about 5 million and 1.5 million people world-wide. All three pandemics were sparked by influenza viruses of avian origin.

The story of a new 21st century virus with pandemic potential can be traced to the outbreaks of avian influenza in chickens in 1997 in Hong Kong, when 18 people were infected, and six of whom died (Nerlich and Halliday, 2007).

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Editor: Satyajit Sarkar, Coordinator and Team Leader, ECTAD Communication Unit
(Avian Influenza) (Satya.Sarkar@fao.org)

As a response measure to control this new and highly pathogenic avian influenza virus named H5N1, which seemed to have jumped the species barrier from birds to humans, over 1.6 million poultry were slaughtered within a very short time in Hong Kong and all exports banned. When no more human cases were reported, the disease was assumed to have been eradicated.

However, in 2003, there were further outbreaks of the H5N1 virus among poultry in Hong Kong, causing two human infections, including one which resulted in death. From 2003 onwards, the virus rapidly spread to several other countries in the South East Asia region, and subsequently reached Europe and Africa. Since 2003, the disease has affected about 60 countries, and over 250 million poultry have either died or have been destroyed as a result of the disease. As of 10 March 2009, the cumulative number of human cases and deaths due to infection by the H5N1 virus, reported officially to the WHO since 2003, stood at 410 cases including 256 deaths (WHO 2009). Practically all the human cases have been linked to the handling of sick and infected poultry and poultry products. However, scientists have so far been unable to explain the extraordinarily small number of human cases despite the millions of people who are in daily and direct contact with poultry and poultry products. The scientists continue to worry about the virus mutating, and sparking a human influenza pandemic.

According to Menon (2008), the tone of the rhetoric that ultimately shaped the current collective "imagination" around avian and human pandemic influenza, was set in September 2005, when the world was warned that up to 150 million people could be afflicted by the H5N1 virus. In subsequent months, the World Bank claimed that a human pandemic triggered by avian influenza could cost the global economy up to US \$ 2 trillion. The World Health Organisation warned that mankind may never have had a greater risk of a deadly epidemic, and the US Centers for Disease Control further fuelled public imagination by stating: "We know that a pandemic will eventually occur. We always say it's not a question of if; it's a question of when." According to Menon (2008): "The threat of a pandemic immediately catalysed responses ranging over a wide spectrum of

views and found expression in lengthy academic articles and weighty tomes, media reports, opinion columns, speeches and press releases." It also prompted a flood of scientific meetings and international donor conferences. The explosion of reports in the print and visual media, the Internet, as well as scientific conferences, constantly referenced and built on the dis-embedded memory of the human pandemics of 1918, 1957 and 1968, and their devastating human death toll, and at the same time drew on the more recent memories of the SARS epidemic in South East Asia.

Playing on the uncertainty of when, and not if, the H5N1 virus might mutate from afflicting poultry to one that would rampage through human populations, the public imagination was fuelled by a rhetoric of fear. Furthermore, the rhetoric, according to Nerlich and Halliday (2007) while "implicating the need for appropriate 'actions', has an air of ambiguity as to the nature of these actions, when to execute them and how many governmental resources should be allocated to them."

As hundreds of millions of chicken and ducks were slaughtered across the world in a bid to stop the spread of the disease, the visual media were saturated by images of poultry culling operations and which became iconic of the virus and the disease.

Poultry market shocks and disruptions as a result of negative consumer reactions which invariably followed reports of avian flu outbreaks within a country, sometimes showed trans-boundary effects when outbreaks in one country resulted in market shocks in other countries, which were geographically far removed.

According to Nerlich and Halliday (2007), the patterns of discourse clustered around: "... a scientific discourse of 'early warnings' which, once it entered the sphere of the media, contributed to a 'rhetoric of fear' in the newspapers that reported them and a governmental discourse of 'wait and see' which contributed to a 'rhetoric of blame' in the media." The two discourses together contributed to a general discourse of uncertainty. The scientific discourse was suffused by the use and repetition of adjectives describing the

pandemic as 'imminent', 'ominous', 'inevitable', and 'overdue'. Furthermore, the media amplified the rhetoric as 'a virus and disease that recognises no borders', and 'a virus and disease that has jumped the species barrier', creating further imagined vulnerabilities and driving scores of national governments to scramble and stockpile millions of doses of Tamiflu, and place advance orders for vaccines that were yet to be developed, against pandemic influenza. The discourse of uncertainty found further expression when international guidance on preparedness for 'the next pandemic' called for developing business continuity and contingency plans; and based on 'risk communications', 'attack rates', 'case fatality ratios', and 'scenario modelling', national governments were encouraged to conduct desk-top and full-scale field simulation exercises of an "imagined" pandemic situation, involving thousands of people within and across countries.

According to Scoones et al (2008), the international response to avian and pandemic influenza has been dominated by an overarching "outbreak narrative", with features that create a particular style of policy and politics. According to them, "A central feature is public fear and worry which permeates public and media debates". Furthermore, it involves the construction of "the other" – that is, "dangerous places and people where diseases come from, and something to be feared". Yet another feature of outbreak narratives is that it "focuses on western anxieties about globalisation – that we are all connected, and can all be affected, by diseases or disasters that spread across the globe", and that such outbreaks "emerge from disrupted, primordial settings" pushed out of equilibrium. In these global narratives, this becomes linked to "concerns about protecting the conditions of modernity, where disease is controlled, unlike in the primitive, backward, unregulated contexts where diseases emerge." Even as the global politics of avian and pandemic influenza were being played out in high-level ministerial and donor meetings, on the ground -- millions of poor poultry farmers have been at the rough end of emergency disease control measures which included massive culling of poultry in outbreak areas, causing disruptions in lives and livelihoods. Simultaneously, to prevent spread of the disease

and stop human infections, national avian influenza communication campaigns to promote changes in behaviours and practices have been launched in scores of countries, using both mass media and inter-personal communication methods. Outbreak and risk communication strategies are being used to educate and influence communities to take action and change age-old poultry-keeping practices. But the outbreak narratives, and their associated emergency/crisis responses, have tended to focus on the outbreaks themselves i.e. on disease incidence, and not on underlying factors or the drivers of disease emergence and spread.

Globally, and over the past several decades, one new infectious disease has been emerging each year. Seventy percent of these diseases are zoonotic (i.e. they are of animal origin and can infect humans). Many of these emerging infectious diseases (EIDs) are also transboundary in nature, spreading well beyond their source of geographical origin (e.g., HIV, SARS, and avian influenza, to name a few). Several interrelated factors and global trends have contributed to the emergence, spread, and entrenchment of infectious diseases.

In 2007, over 21 billion food animals were produced to help feed a global population of over 6 billion people. By 2020, this demand for animal protein is expected to rise by over 50%. By 2025, the total population of the world is expected to rise to nearly 8 billion people, and 90% of this population explosion is expected to take place in Asia, Africa and Latin America. Although poverty will continue to rise in absolute terms, several Asian countries such as India and China are experiencing massive economic growth which is fuelling greater urbanisation and demand for animal protein, leading to unbelievable levels of intensification of livestock production, including poultry. To meet world-wide demand, globally interconnected transport systems are rapidly moving live animals and animal products from one part of the globe to another, often quicker than the incubation period of many disease-causing viruses. Climate change, combined with large-scale deforestation, land encroachment, and the global movement and trade of animals and animal products, is triggering the emergence of exotic, zoonotic diseases in countries and

latitudes which have never experienced those diseases. Highly pathogenic avian influenza is only one such disease.

In October 2008, the Government of Egypt hosted the sixth in a series of international ministerial conferences on avian and pandemic influenza. Attended by over 500 participants, the conference witnessed the release of the "One World, One Health" document, described as "A Strategic Framework for Reducing Risks of Infectious Diseases at the Animal – Human – Ecosystems Interface". The framework calls for working and intervening at the animal-human-ecosystems interface to prevent the emergence and spread of infectious diseases. And the slogan "One World One Health" captures the interconnected, globalized context within which the strategy is to be implemented. The conference also witnessed a pledging session by donors, which brought the cumulative total of pledges since the first pledging conference for avian and pandemic influenza in Beijing, to over 3 billion US dollars.

It is now a critical imperative, that the communication response to stop HPAI H5N1 be truly embedded in a multi-disciplinary approach. Furthermore, strategic advocacy and communication for risk reduction needs to be driven by a balance of high-level policy advocacy and ground-level dialogical processes.

These past few years, FAO has been very active in the provision of technical assistance to national authorities and building capacities for strategic communication planning. It has taken a multidisciplinary approach, through collaborating closely with epidemiology, biosecurity, socioeconomic and compensation experts. Four major regional multi-disciplinary workshops in communication planning and skill-building for prevention and control of Avian Influenza have been held for North Africa, West and Central Africa, Central Asia, and East Africa, involving 40 countries and over 100 participants and partners. Furthermore, FAO has led Integrated National Action Plan (INAP) assessments in nearly 30 countries of sub-Saharan Africa. This

is an initiative of the Alive Platform, and jointly organized by FAO, the World Bank, the African Union / Interafrican Bureau for Animal Resources (AU-IBAR), OIE and WHO, and includes assessing communication capacities and preparedness, and formulating planning assistance for HPAI communication strategies.

The overwhelming majority of the 40 countries who participated in the four regional communication skills-building and planning workshops, as well as the 30 INAP missions to Sub-Saharan Africa, have systematically identified and prioritised their need for support in:

1. Building in-country communication capacities, competencies and leadership.
2. Developing effective and evidence-based communication strategies and interventions.
3. Strengthening in-country collaboration and coordination.

Furthermore, the key thematic areas for focused support have been identified as : (1) Promoting and establishing appropriate bio-security as a professional/social norm along the whole production/marketing chain, especially in resource-poor settings, to ensure safe livestock production and market practices (in commercial, semi-commercial, backyard systems); (2) Promoting community-based surveillance /reporting, and active public engagement in control measures in case of outbreaks; (3) New ways of effectively and strategically collaborating at the animal-human-ecosystems interface; (4) Advocacy to ensure greater integration between national animal and public health systems and supporting public-private partnerships in terms of communication strategies, interventions and research.

To respond to these complex challenges of a global nature, there is clear need for a bold, ambitious, innovative and international program towards rapidly building a critical mass of globally networked, in-country, communication practitioners and specialists with appropriate competencies and leadership skills.

MOST RECENT HPAI OUTBREAKS 2006-09

Note: This list has been compiled on the basis of information up to 15 March 2009.

2009

March	Bangladesh, Germany, Viet Nam
February	China, China (Hong Kong), Egypt, India, Indonesia, Lao PDR, Nepal

2008

December	Cambodia
November	Thailand
October	Germany
September	Togo
July	Nigeria
June	Pakistan
May	Japan, Korea (Republic of), United Kingdom
April	Russian Federation
March	Turkey
February	Switzerland , Ukraine
January	Israel, Saudi Arabia

2007

December	Benin, Iran, Myanmar, Poland
November	Romania
October	Afghanistan
August	France
July	Czech Republic
June	Ghana, Malaysia
April	Kuwait
January	Côte d'Ivoire, Hungary

2006

August	Sudan
July	Spain
June	Mongolia , Niger
May	Bulgaria , Burkina Faso, Denmark
April	Djibouti, Sweden, West Bank & Gaza Strip
March	Albania, Austria, Azerbaijan, Cameroon, Croatia , Greece , Jordan, Kazakhstan, Serbia, Slovenia
February	Bosnia-Herzegovina , Georgia , Iraq, Italy , Slovakia

Green: areas which never had outbreaks in poultry

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

This overview is produced by the FAO-GLEWS team, which collects and analyses epidemiological data and information on animal disease outbreaks as a contribution to improving global early warning under the framework of the Global Early Warning for Transboundary Animal Diseases (TADs) including Major Zoonoses. glews@fao.org

WORLDWIDE

Eighty three outbreaks of H5N1 HPAI in poultry were reported officially worldwide in December 2008 from seven countries (Bangladesh, Cambodia, China, Egypt, India, Indonesia and Viet Nam). No cases of infection in wild birds were reported. The number of reported outbreaks/cases by country and their geographical location are illustrated in Figures 1 and 2, respectively.

The evolution of the number of outbreaks/cases over the last six months by species group (wild or domestic) and by geographical area is represented in Figures 3 and 4, respectively. The evolution of the number of confirmed cases of H5N1 AI infections in humans reported to the World Health Organization (WHO) by country between November 2003 and December 2008 is illustrated in Figure 5.

FIGURE 1
H5N1 HPAI outbreaks/cases worldwide during December 2008
(Source: FAO EMPRES-I)

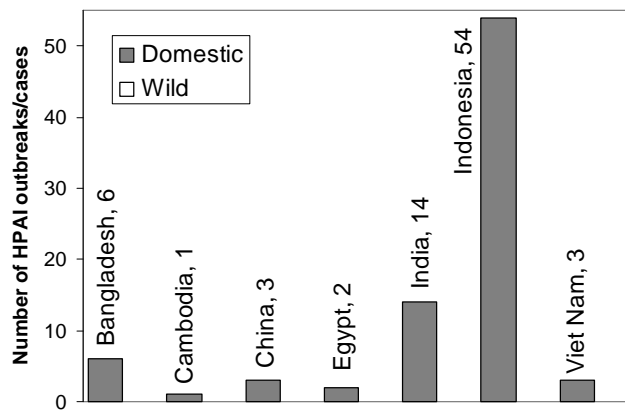
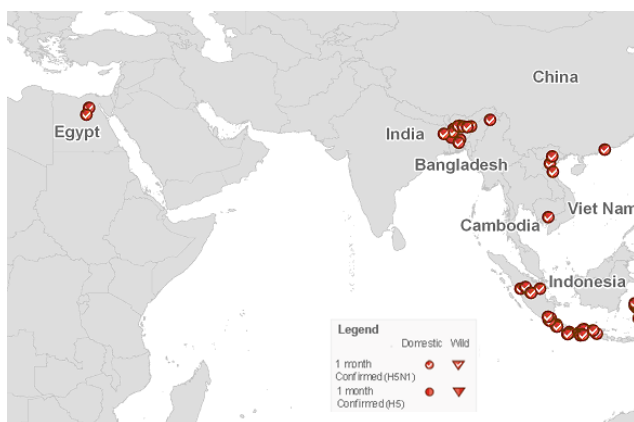


Figure 2
H5N1 HPAI outbreaks in poultry and cases of H5N1 infection in wild birds in December 2008
(Source: FAO EMPRES-I)



NOTE: H5 cases are represented for outbreaks 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 countries according to OIE status. The original data have been collected and aggregated at the most detailed administrative level and for the units available for each country.

FIGURE 3
Weekly numbers of H5N1 HPAI outbreaks in poultry compared with cases of H5N1 infection in wild birds between July and December 2008
(Source: FAO EMPRES-I)

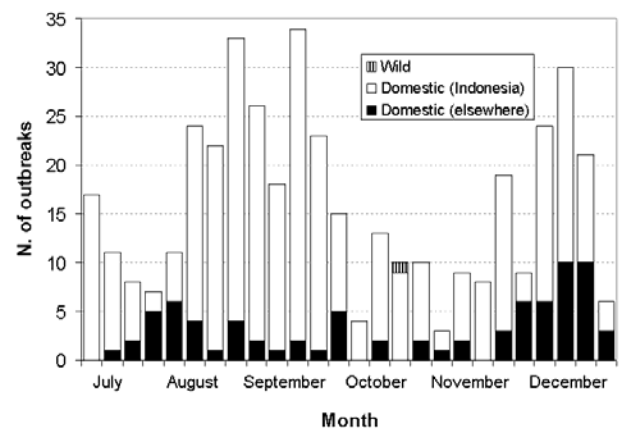


FIGURE 4
Weekly numbers of H5N1 HPAI outbreaks in poultry and cases of H5N1 infection in wild birds by geographical area between July and December 2008
(Source: FAO EMPRES-I)

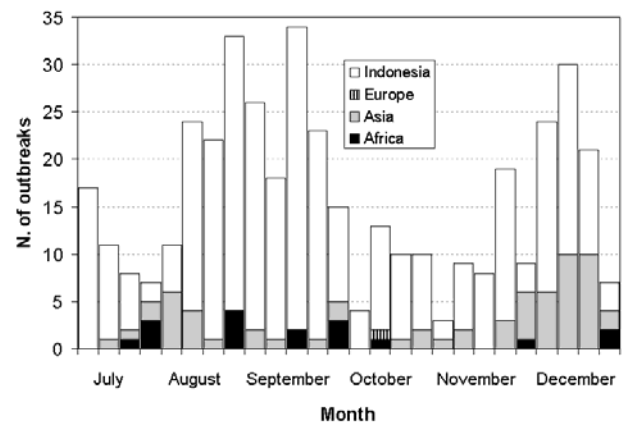
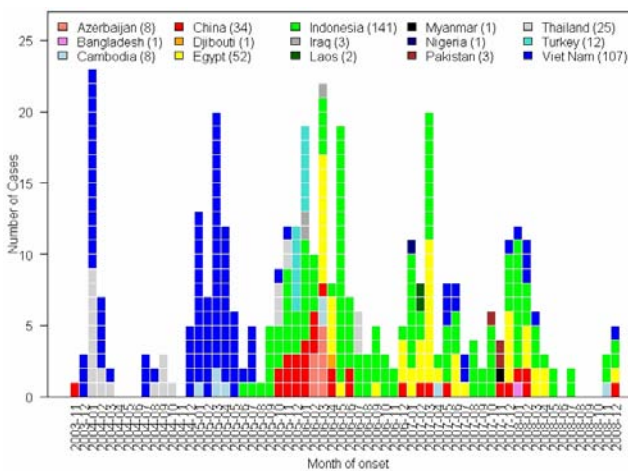


FIGURE 5
Confirmed cases of H5N1 AI infections in humans
by country between November 2003 and
December 2008
(Source: World Health Organization)

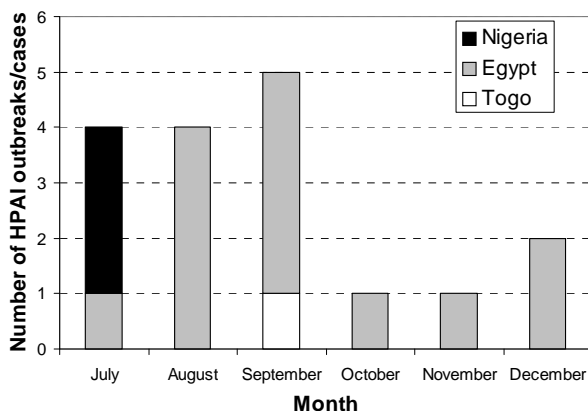


SITUATION BY CONTINENT/REGION

Africa

Confirmed outbreaks of H5N1 HPAI in Africa over the last six months are presented in Figure 6.

FIGURE 6
Number of H5N1 HPAI outbreaks
between July and November 2008 in Africa
(Source: FAO EMPRES-i)



In **Egypt**, a country considered endemic, there were two confirmed HPAI outbreaks in poultry. The first one occurred on 25/12/2008 in non-vaccinated backyard poultry at the capital city of El Menia Governorate. The second outbreak occurred on 31/12/2008 in backyard poultry at a village in El Fayom Governorate. The birds (chickens, ducks and geese) had been vaccinated with H5N1 on 18/10/2008. The virus is currently being examined for its antigenic characteristics to determine if this possible vaccine failure may have been due to antigenic variation. Earlier in the month (on 15/12/2008), the Ministry of Health and Population announced the death of a 16-year old girl from Assiut Governorate due to H5N1 AI

virus infection. However, samples collected from poultry in a targeted surveillance from the vicinity where the human case was reported revealed negative results on RT-PCR.

The current government policy is to vaccinate poultry in backyard settings and to permit commercial companies to vaccinate their flocks with registered vaccines of their choice. During the months of November and December 2008, the veterinary services in Egypt have reported the administration of 16,829,568 H5N1 and H5N2 vaccines free of charge to backyard birds. Absence of sustained surveillance in vaccinated flocks is one of the major problems of the system. There is a need to review the current vaccination strategy and effectively address the prevailing gaps. In general, some surveillance activities are being undertaken targeting both domestic birds and migratory wild birds around major lakes during winter. Poultry farms are required to test their birds and receive certification for negative HPAI infection prior to any planned transportation. Due to lack of proper monitoring and enforcement of transport regulations, however, compliance is sub-optimal.

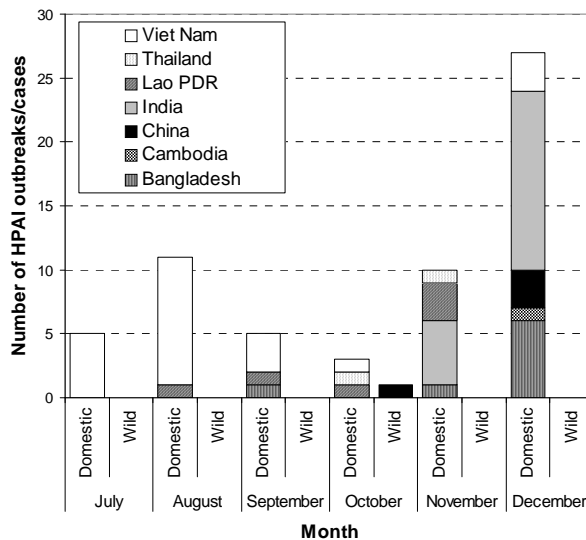
Analysis of the recent outbreak situation suggest the presence of weak coordination in terms of disease reporting and response between the central and governorate level veterinary services as well as in information exchange between the human and animal health sectors. Recently, the General Organization of Veterinary Service (GOVS), in close collaboration with ECTAD-FAO Country Office, initiated a strong move towards strengthening the coordination in disease detection, reporting and response at all levels.

In **Nigeria**, after the re-emergence of H5N1 HPAI in July 2008 in Kano and Katsina States, no additional disease events have been reported. Since 2006, the National Veterinary Research Institute (NVRI) has confirmed HPAI in 97 Local Government Areas in 25 states and FCT. So far, the Government of Nigeria has paid over 630 million naira (\$5.48 m) to 3,037 beneficiaries as compensation since the first detection of the disease in 2006. A total of 29,866 samples including 584 samples from wild bird's survey were collected from October 2005 to October 2008. Out of the total samples collected, 305 were positive and 29,561 negative for H5N1 HPAI virus. In **Togo**, no additional outbreaks of H5N1 HPAI have been reported since September 2008.

Asia

Confirmed outbreaks/cases of H5N1 HPAI in Asia over the last six months are presented in Figures 7 and 8.

FIGURE 7
Number of outbreaks/cases of H5N1 HPAI between July and November 2008 in Asia (excluding Indonesia)
(Source: FAO EMPRES-I)



In **Bangladesh**, HPAI outbreaks were reported in Kurigram (2), Gaibandha, Natore, Gazipur and Munshiganj Districts. There is a reduction of outbreaks in the last half of 2008 compared to the number of outbreaks in the second half of 2007 (eight versus thirteen). Based on the epidemic trend in 2007-08, it was expected to see an occurrence of a new epidemiological wave of HPAI outbreaks will occur in early 2009. With HPAI outbreaks reported almost every month since the first occurrence back in February 2007, the status of the country is believed to be endemic. The Government of Bangladesh has prohibited poultry vaccination against HPAI. As of 31 December 2008, a total of 295 outbreaks were recorded in 47 out of 64 districts. These include outbreaks in both commercial farms (248) and backyard holdings (42). 1,647,734 birds have been culled until 4 January 2009. FAO organized and supported active surveillance, which is currently conducted in 149 upazillas across the country. However, most HPAI outbreaks or suspect cases so far have been reported by the farmers to private veterinarians or livestock officers. A national HPAI toll-free telephone hotline to increase reporting has been recommended.

In **Cambodia**, after the human case reported in Kandal Province, the Ministry of Agriculture, Forestry and Fisheries/ Department of Animal Health and Production dispatched two investigation teams to the field. Over 300 poultry were culled at the Cambodia-Indonesia Solidarity Camp and surrounding area, where the patient

had purchased chickens. Three duck samples were found positive for H5N1 virus. The zone was quarantined and poultry movements and raising in the area were banned. Cambodia regularly reports the results obtained from their surveillance activities through an animal health hotline that receives reports on suspicions or cases from the field. Cambodia had not reported any H5N1 HPAI incidence (in poultry or humans) since April 2007. In **China**, Hong Kong reported their first H5N1 HPAI outbreak on a farm since January 2003. A report of the epidemiological investigation of this case is expected in the next few weeks. Only one farm was found to be infected, all poultry on the farm and in markets were destroyed and trade in live poultry ceased for 21 days. Prior to this case the last H5N1 virus associated with poultry was detected through routine retail market surveillance in June 2008. In addition, two farms were affected in Jiangsu Province. There was also a human case in Beijing, who had contact with poultry in Hebei Province prior to her illness, but no poultry outbreak was reported. Moreover, no poultry outbreaks have ever been reported in Hebei Province and no positive surveillance results were reported there between January 2007 and October 2008 (the 380 virus samples submitted in October 2008 were all negative). There is a 93% vaccination coverage reported in October 2008, with 31,399 samples tested. More to be said on human cases which have occurred throughout the country and early detection of poultry cases must be emphasised.

In an effort to better understand the role of migratory birds in the ecology and epidemiology of avian influenza, a multi-partner project was launched to study wild bird migration from Hong Kong. 24 wild ducks were trapped, sampled, and marked with satellite transmitters on 10 December 2008. Swab samples collected from these birds were tested for avian influenza and Newcastle disease viruses at the Hong Kong University (HKU) and found to be negative. Although it is known that ducks from Hong Kong, specifically northern pintail and Eurasian wigeon, migrate to northeastern China and the eastern part of the Russian Federation in the spring, little information exists about their migration routes, stop-over sites, timing, or final destination. Last year around 89,000 migratory and resident water birds were recorded during winter from the Deep Bay area and 20,000 shorebirds during the spring/autumn migration periods. To date, over 30,000 samples from healthy wild birds collected by HKU from the Deep Bay area since 2003 have tested negative for notifiable AI viruses.

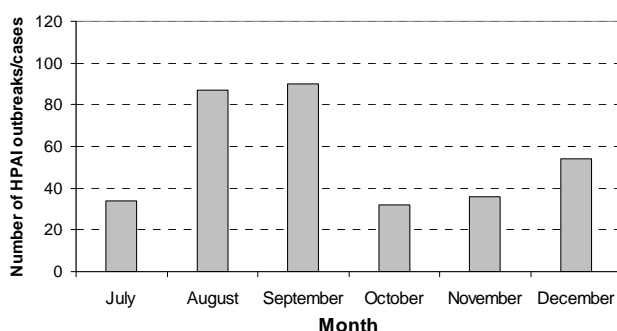
In **India**, 14 outbreaks were reported in Assam (12 - Goalpara, Dhuburi, Nagaon, Barpeta, Dibrugarh, Kokrajran and Kamrup) and West Bengal (2 - Maldah). This new wave of outbreaks started in November (5 outbreaks), when it had been over five months since the previously reported outbreak. However, H5 seropositive ducks had been found during routine surveillance

activities in previous months. During the period between 15 to 28 December 2008, 8,681 samples were received at the High Security Animal Disease Laboratory (HSADL), Bhopal. Testing was completed on 3,669 samples and another 5,914 are pending. The report (available on-line at <http://www.dahd.nic.in/birdflue.htm>) also includes the number of samples received and tested per state.

Indonesia continues to report a high number of H5N1 HPAI outbreaks in poultry in the last three years. HPAI remains endemic on Java, Sumatra, and Sulawesi islands with sporadic outbreaks reported from other areas. HPAI infection is considered to be established throughout most of Indonesia, although incidence varies widely. Only two of its 33 Provinces have not experienced the occurrence of H5N1 HPAI.

The high number of reported outbreaks monthly for Indonesia can be explained by the implementation of the 'participatory disease surveillance and response' (PDSR) 1 programme that targets village-type poultry production systems (both backyard and small-scale intensive) and has been very effective at detecting evidence of virus circulation in the village environment. The programme is supported by FAO, thanks to USAID financial support, and is operating in 331/448 districts (74%) through 31 Local Disease Control Centres (LDCCs) in 31/33 provinces including all known endemically infected areas 27 provinces in Java, Sumatra, Bali, Sulawesi and Kalimantan. Larger, less densely-populated provinces report HPAI outbreaks more infrequently than more densely populated provinces. It appears that H5N1 HPAI is more sporadic in the smaller, more dispersed poultry populations.

FIGURE 8
Number of outbreaks/cases of H5N1 HPAI between July and November 2008 in Indonesia
(Source: FAO EMPRES-I)



¹ PDSR case definition in Indonesia: When poultry mortality events are encountered in which more than one bird died suddenly, with or without clinical signs, Participatory Disease Surveillance and Response (PDSR) teams carry out an influenza type A rapid test. A mortality event consistent with clinical HPAI and a positive rapid test in affected poultry is considered a confirmed detection of HPAI in areas where HPAI has previously been confirmed by laboratory testing.

During December, PDSR officers visited 1,106 villages of which 54 were newly infected. This was a near doubling of the November infection rate of 2.3%. During the previous 6 months, PDSR officers visited 11,414 villages in the 331 Districts under PDSR surveillance. Thus far, 20.3% of villages under PDSR coverage have been surveyed. About four percent (4.2%) of all the villages visited during the previous 6 months were classified as infected at time of visit. As on 31 December, and in comparison with the situation on 30 November, the percentages of 'infected', 'suspect', 'controlled' and 'apparently free' villages were almost unchanged. Infected villages during December continued to be fairly evenly distributed between Sumatra, Central Java and West Sulawesi. No cases were reported in Kalimantan or Bali. Cases over the last 6 months were most concentrated in Lampung and Yogyakarta. Central Java was less affected than during the previous 6-month cumulative period.

In addition, the Ministry of Health has announced two new confirmed cases of human infection with the H5N1 avian influenza virus: a 29-year-old female from Banten Province and a 5-year-old female from West Java Province. Both cases were fatal. Of the 141 cases confirmed to date in Indonesia, 115 have been fatal.

In Lao People's Democratic Republic, after four months reporting HPAI outbreaks, no event was reported in December 2008. Disease control measures for Sayaboury Province, where the last outbreak occurred in November 2008, were lifted on 31 December 2008. Regular active surveillance in live bird markets and commercial farms is implemented. Lao People's Democratic Republic appears to be a country at high risk of outbreaks because of some peculiarities – there are many ethnic Vietnamese duck farmers, who have established free range duck flocks in Lao People's Democratic Republic and similarly, there is an influx of duck farmers from China in the north of the country. These transboundary movements of people and their high risk production practices have resulted in HPAI outbreaks.

Thailand did not report any HPAI activity after the two outbreaks recorded in October and November 2008.

In Viet Nam, three HPAI outbreaks were reported during December affecting unvaccinated chickens, ducks and Muscovy ducks in the north of the country. Disease control measures include stamping out of infected farms, movement restrictions for 21 days, compensation (70% of market value) and vaccination. Vaccination is implemented throughout the country through two annual campaigns (March/April & October/November), but in many areas age-based vaccination is being applied. The vaccination strategy for 2009-10 has just been announced – continuation of two mass campaigns per year in high risk areas (main river deltas) with change in cost recovery being applied to flocks over 500 birds (compared with over 2,000 birds previously).

In addition, the Ministry of Health confirmed a human case in Thanh Hoa Province. Of the 107 human cases confirmed to date in Viet Nam, 52 have been fatal.

There have been no HPAI outbreaks in the **Pacific Community, Oceania, Papua New Guinea** (outbreaks have occurred in the Indonesian province of West Papua) or the **Philippines**. To date, no outbreaks have been reported in **Timor-Leste**, but here surveillance capacity is weak. In South Asia, **Sri Lanka, Maldives, and Bhutan** have not experienced disease. Some Asian countries regularly report the negative results obtained from their surveillance activities and suspected cases. Bhutan produces a clinical surveillance report weekly for each administrative level (available at <http://www.moa.gov.bt/birdflu/main/reports.php?show=all>). **Iraq**, where the last H5N1 HPAI outbreak was in February 2006, reported recent laboratory results of their surveillance activities for December 2008 for all governorates except Kurdistan Province, in the north of the country. All Iraqi samples taken were negative for H5N1 [poultry farms (498), backyard poultry (148), game and wild birds (1,355), and markets and slaughterhouses (256)]. Poultry farms in Babel were found infected with a H9 low pathogenic strain of AI.

Europe

The single outbreak of H5N1 HPAI in domestic poultry reported in Europe in the last six months, took place in October in a mixed poultry farm in Germany.

CONCLUSIONS

Since 2003, 61 countries have experienced outbreaks of H5N1 HPAI. Effective control measures for outbreaks in poultry have been associated with reduced risk of human infections in several countries. However, H5N1 HPAI remains entrenched in poultry in parts of Asia and Africa and thus the risk of human infection remains, as proven by the five human cases reported in four countries considered endemic.

It is difficult to undertake thorough epidemiological analysis of the situation of HPAI globally based only on official disease reporting, and knowing that the prevalence and incidence are likely greater. A number of countries that had not reported HPAI activity for some time have suffered outbreaks in the last two months. That is the case of Bangladesh, Cambodia, India, Lao People's Democratic Republic and Thailand. It remains unknown whether these new cases are because of a re-introduction of the infection or if the virus circulates in these countries at low levels without being detected. To support the latter, genetic analysis of viruses in a number of countries suggests that viruses have not been eliminated but continued to circulate at levels that

were not detected through existing surveillance programs.

In some instances, the disease has been detected first in human cases rather than poultry, as demonstrated by the recent human cases in Cambodia, Egypt and China. In the two latter cases, no poultry outbreak was found, even after the epidemiological investigations and testing that followed the human cases, despite both victims had been reportedly in contact with poultry (sick and dead poultry in the case of Egypt).

December 2006 showed lower HPAI activity in terms of disease reporting, particularly when compared to December 2007 (Figures 9 and 10).

FIGURE 9

Number of countries affected with H5N1 HPAI by continent in December 2006, 2007 and 2008
(Source: FAO EMPRES-i)

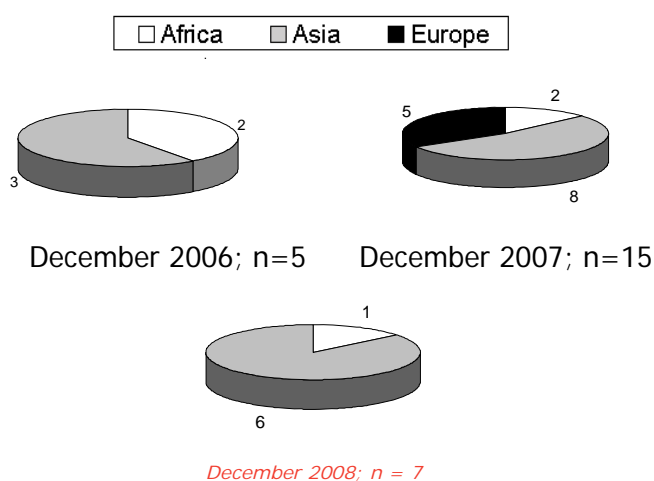
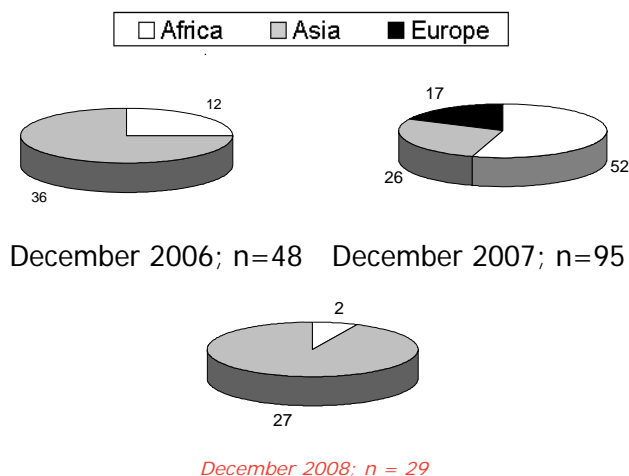


FIGURE 10

Number and distribution of H5N1 HPAI outbreaks/cases by continent in December 2006, 2007 and 2008
(Source: FAO EMPRES-i; Indonesia data are not included, because the epidemiological unit definition for the PDSR data was modified from household level to village level in May 2008)



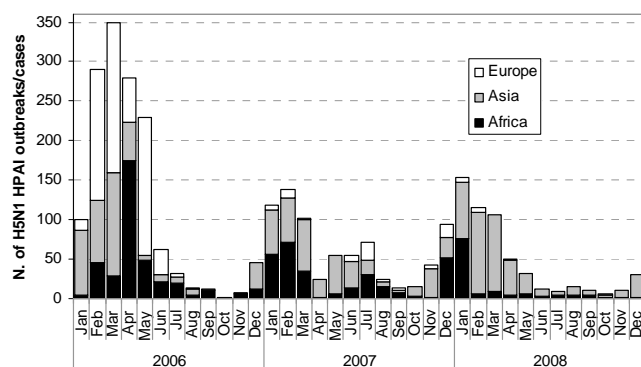
Although there has been an improvement in disease awareness, outbreaks/cases of HPAI are likely still under-estimated and under-reported in many countries and regions because of limitations in the capacity of veterinary services to implement country wide and effective disease surveillance for HPAI. The number of affected countries (Figure 9) is for this reason more representative of the situation than the number of outbreaks/cases reported (Figure 10) which is more approximate. Data from previous years (Figure 11) have shown a peak in the number of outbreaks/cases during the January-March period in both poultry outbreaks and human cases (Figure 5). Therefore, a higher HPAI activity is expected in the months to come.

An animated map showing the evolution of outbreaks over the last six months including December 2008 is available at: www.fao.org/ag/againfo/programmes/en/empres/maps.html

CONTACTS

This overview is produced by the FAO-GLEWS team, which collects and analyses epidemiological data and information on animal disease outbreaks as a contribution to improving global early warning under the framework of the Global Early Warning for Transboundary Animal Diseases (TADs) including Major Zoonoses.

FIGURE 11
Number of H5N1 HPAI outbreaks/cases by continent per month since January 2006
(Source: FAO EMPRES-I)



EMPRES welcomes information on disease events or surveillance reports on H5N1 HPAI (and other TADs), both rumours and official information. If you want to share any such information with us, please send a message to glews@fao.org.

AT A GLANCE

The latest HPAI outbreaks for the period 1 January 2009 – 15 March 2009

Note

AIDEnews publishes reports of **confirmed HPAI cases** using the following sources: OIE, European Commission, FAO and national governments.

AFRICA

EGYPT

Samples taken from poultry in Kerdasa and Osein Districts, 6 October Governorate; Damanhur, Kafr El Dawar and Hosh Eisa Districts, Al Beheira Governorate; Itsa and Faiyum Districts, Al Faiyum Governorate; Al Kaliobia Governorate; Al Menia, Ashmoun and Samalout Districts in Al Menia Governorate; Al Kenaiat and Belbeis Districts, Al Sharkeia Governorate; Assiut District, Assiut Governorate; Tanta and Samanoud Districts, El Gharbia Governorate; El Kenayat District, Elkenayat Governorate; Giza District, Giza Governorate; Helwan and Atfih Districts, Helwan Governorate; Shebin Elkom and Menof Districts, Manofia Governorate were found positive for HPAI.

ASIA

BANGLADESH

HPAI outbreaks have been reported in Chittagong, Gaibandha, Kurigram, Manikgonj, Mirpur, Thakurgaon, Rajshahi, Comilla Districts.

CHINA

A report has been submitted to OIE reporting an HPAI outbreak that started on 1 February 2009 at a farm in Zhawa, Moyu, He'tian, Xinjiang Province. 510 out of 13,737 birds died. Meanwhile, human cases have been reported in Jinan City, Shandong Province; Luliang City, Shanxi Province; Huaihua City, Hunan Province; Urumqi, Xinjiang Autonomous Region; Guiyang city, Guizhou Province; Beiliu City, Guangxi Province; Xupu County, Hunan province. Of the 7 human cases confirmed since January 2009 in China, 4 have been fatal.

CHINA (HONG KONG SAR)

A dead goose and the two dead ducks collected at a beach near Sha Lo Wan football pitch in Sha Lo Wan, Lantau on 29 January 2009; a dead large-billed crow found at the Ancient Kiln Park on Lantau Island on 5 February; a dead Crested Myna found and collected on 12 February in Sha Tau, Tung Ping Chau were confirmed to be H5N1 HPAI positive according to the AFCD.

INDONESIA

During February 2009, PDSR officers visited 1,483 villages of which 204 (13.8%) were infected. This was noticeably higher than the January infection rate of 8.5%. On the day of 28 February, and in comparison with the situation on the day of 31 January, an increased percentage of villages were classified as 'infected' (HPAI compatible event supported by a positive antigen test result). Infected villages are throughout Java, but with more in East Java than last month. Bali had HPAI positive villages for the first time since a single incident during March 2008. South Sulawesi has more infected villages than last month. Kalimantan continues to have no reported infection. PDSR teams operate in 331/448 (74%) districts across 31/33 provinces including all known endemically infected areas. During the previous 6 months, PDSR officers visited 11,345 villages (20.2%) in the 331 Districts under PDSR surveillance. An average of about six percent (6.4%) of the villages visited during the previous 6 months was classified as infected at the time of visit. Cases over the last 6 months were concentrated in Yogyakarta, Banten and Lampung.

INDIA

H5 HPAI has been reported in: Uttar Dangkoba Village, Mathabhanga-I Block, Coochbehar District, West Bengal; Nagar Bhagni Village, Dinhat-I Block, Coochbehar District, West Bengal; Baramahar Village, Harirampur Block, Dakshin Dinajpur District, West Bengal; Binay Krishnapally Village in Matigara Block, Darjeeling District, Bara Chenga Village in Mirik Block, Darjeeling District, West Bengal; Bansdhura Village in

Rangli Rangliot Block, Darjeeling District, West Bengal; Punding Forest Busty Village, Kurseong Block, Darjeeling District, West Bengal; Ravongla Municipality, South Sikkim District, Sikkim.

LAO PDR

Poultry mortality was first reported on 5 February 2009 in backyard chickens in five villages (Phosay Tai, Phosay Neua, Ban Muang Kua and Houey Mouane Neua, Hatpone) in Muang Khoua District, Phongsaly Province, carcasses received at the National Animal Health Centre (NAHC) laboratory tested positive for H5N1 on Real Time PCR. The outbreak started on 30 January 2009 and affected 730 out of 3,314 rural backyard poultry. The first onset of the cases occurred during Lunar New Year celebration. In the 11 villages within the three red zones in Muang Khoua District, Phongsaly Province, 2662 birds and 2462 eggs were destroyed.

NEPAL

Nepal has reported its first H5N1 HPAI outbreak. The outbreak started on 8 January 2009 in backyard poultry in Nagaar Nagarpalika Village, Jhapa District, Mechi Zone, where 14 out of 13,000 birds died. The property was alongside the main highway from India approximately 1 km inside Nepal. Another H5N1 HPAI outbreak was reported in Jhapa, Sharamatinamati, Jhapa District. It started on 17 February 2009 affecting 150 backyard poultry.

VIET NAM

The Department of Animal Health (DAH) reported HPAI outbreaks in: (North) Bac Ninh Province, Tien Du District; Quang Ninh Province, Ha Long City, Dam Ha District; Dien Bien Province; (Central) Khanh Hoa Province, Nha Trang City; Quang Tri Province, Trieu Phong District; (South) Bac Lieu Province, Gia Rai, Phuoc Long Districts; Ca Mau Province, Ca Mau City, Phu Tan, Tran Van Thoi, Thoi Binh, U Minh Districts; Hau Giang Province, Nga Bay Town, Long My, Vi Thuy Districts; Soc Trang Province, My Tu, My Xuyen, Nga Nam, Thanh Tri Districts.

EUROPE

GERMANY

Germany has detected H5N1 infection in a wild duck shot during a hunt on 10 January 2009 at Possenhofen, Starnberger Lake, Bavaria. Four Canada geese (*Branta canadensis*) and 35 mallards (*Anas platyrhynchos*) were shot on 10 January 2009, one mallard was positive for HPAI H5N1. The other 38 samples were negative for influenza A. This finding was a part of routine surveillance.

SUMMARY OF CONFIRMED HPAI OUTBREAKS (as of 15 March 2009)

Sources: OIE, European Commission (EC), FAO and national governments – WHO for human cases/deaths

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

AFRICA	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Benin	7 November 2007	15 December 2007	Domestic poultry	-
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	31 January 2007	Domestic poultry – wild birds	-
Djibouti	6 April 2006	6 April 2006	Domestic poultry	1 / 0
Egypt	17 February 2006	13 March 2009	Domestic poultry – wild birds	58 / 23
Ghana	14 April 2007	13 June 2007	Domestic poultry	-
Niger	6 February 2006	1 June 2006	Domestic poultry	-
Nigeria	16 January 2006	22 July 2008	Domestic poultry – wild birds	1 / 1
Sudan	25 March 2006	4 August 2006	Domestic poultry	-
Togo	6 June 2007	8 September 2008	Domestic poultry	-
ASIA	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Afghanistan	2 March 2006	2 October 2007	Domestic poultry – wild birds	-
Bangladesh	5 February 2007	14 March 2009	Domestic poultry	1 / 0
Cambodia	12 January 2004	16 December 2008	Domestic poultry – wild birds	8 / 7
China	20 January 2004	1 February 2009	Domestic poultry – wild birds	38 / 25
China (Hong Kong SAR)	19 January 2004	12 February 2009	Wild birds	-
India	27 January 2006	12 March 2009	Domestic poultry	-
Indonesia	2 February 2004	February 2009	Domestic poultry – pigs (with no clinical signs)	141 / 115
Japan	28 December 2003	8 May 2008	Domestic poultry – wild birds	-
Kazakhstan	22 July 2005	10 March 2006	Domestic poultry – wild birds	-
Korea, Rep. of	10 December 2003	12 May 2008	Domestic poultry – wild birds	-
Lao PDR	15 January 2004	25 February 2009	Domestic poultry	3 / 2
Malaysia	19 August 2004	2 June 2007	Domestic poultry – wild birds	-
Mongolia	10 August 2005	5 June 2006	Wild birds	-
Myanmar	8 March 2006	23 December 2007	Domestic poultry	1 / 0
Nepal	8 January 2009	17 February 2009	Domestic poultry	-
Pakistan	23 February 2006	16 June 2008	Domestic poultry – wild birds	3 / 1
Thailand	23 January 2004	10 November 2008	Domestic poultry – wild birds – tiger	25 / 17
Viet Nam	9 January 2004	9 March 2009	Domestic poultry	109 / 54
NEAR EAST	First outbreak	Latest outbreak	Animals affected to date	Human cases / deaths to date
Iran	2 February 2006	10 December 2007	Domestic poultry - wild birds	-
Iraq	18 January 2006	1 February 2006	Domestic poultry – wild birds	3 / 2
Israel	16 March 2006	1 January 2008	Domestic poultry	-
Jordan	23 March 2006	23 March 2006	Domestic poultry	-
Kuwait	23 February 2007	20 April 2007	Domestic poultry – wild birds – zoo birds	-
Saudi Arabia	12 March 2007	29 January 2008	Domestic poultry	-
West Bank & Gaza Strip	21 March 2006	2 April 2006	Domestic poultry	-

EUROPE	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	Wild birds – domestic poultry – dogs	8 / 5
Bosnia-Herzegovina	16 February 2006	16 February 2006	Wild birds	-
Bulgaria	31 January 2006	30 May 2006	Wild birds	-
Croatia	21 October 2005	24 March 2006	Wild birds	-
Czech Republic	27 March 2006	11 July 2007	Wild birds – domestic poultry	-
Denmark	12 March 2006	26 May 2006	Wild birds – domestic poultry	-
France	17 February 2006	14 August 2007	Wild birds – domestic poultry	-
Georgia	23 February 2006	23 February 2006	Wild birds	-
Germany	8 February 2006	6 March 2009 (mallard, wild)	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	16 December 2007	Wild birds – domestic poultry	-
Romania	7 October 2005	6 December 2007 (cat)	Wild birds – domestic poultry – cat	-
Russian Federation	15 July 2005	8 April 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	Wild birds – domestic poultry - game birds - mink	-
Switzerland	26 February 2006	22 February 2008	Wild birds	-
Turkey	1 October 2005	9 March 2008	Domestic poultry – wild birds	12 / 4
Ukraine	2 December 2005	11 February 2008	Wild birds – domestic poultry – zoo birds	-
United Kingdom	30 March 2006	22 May 2008 (H7N7)	Wild birds – domestic poultry	-

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