FAOAIDEnews
Animal Influenza Disease Emergency

Situation Update 81
13 October 2011

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).

Farm Biosecurity: fewer diseases, better performance and higher profits

The size of the global poultry industry has more than doubled in the last 20 years in developed and developing countries. This growth has been supported by improvements in genetics, nutrition, growing methods, processing and marketing. However, intensification of poultry production renders the industry more susceptible to threats of poultry diseases, including Newcastle disease or Gumboro, and in some cases diseases that can affect human health, such as H5N1 highly pathogenic avian influenza and Salmonella. All these diseases pose significant economic threats to the poultry industry.

Preventing and controlling the incursion of such detrimental diseases into poultry farms, regardless of size and type of production, requires the implementation of measures, such as biosecurity, vaccination, and preventative medication. Importantly, it should be noted that prevention is always cheaper than treating diseases or suffering the effects of an outbreak.

Studies in the U.S. in the 1980s and 1990s confirmed that biosecurity is the cheapest, most effective means of disease prevention. The studies demonstrated how a relatively small investment in developing and implementing a biosecurity plan, educating staff, and improving poultry housing and equipment could yield healthier birds and greater profits. Comparatively higher costs are associated with disease outbreak and concomitant bird mortality. Also, diminished performance occurs due to slow growth, poor feed conversion rate, drops in egg production and hatchability, increases in carcass condemnations, and high costs of medication and decontamination.

Biosecurity plans require the adoption of a set of attitudes and behaviours that reduce risk in activities involving poultry production and marketing. A comprehensive, detailed, practical and easily understood plan is most effective. It is achievable if it is farm-specific. There is no panacean formula for all poultry farms: each farm has its own unique conditions requiring specialized solutions. A farm's staff should participate in the development and implementation of the plan, assuring understanding, involvement, and commitment to the success of the biosecurity plan.

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AIDEnews is an FAO ECTAD publication
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Consistency in following biosecurity rules is crucial. Likewise, regular follow-up evaluations of the plan's efficacy assure success. The plan should be dynamic, ever-evolving, and able to adapt to new field conditions.

A typical biosecurity plan includes three essential elements:

1. Segregation and traffic control,
2. Cleaning, and
3. Disinfection.

The following four presentations have been crafted to serve as training manuals for on-farm biosecurity (PDFs):

- Prevention and control of poultry diseases for better farm profitability
- Cleaning & disinfection of poultry farm
- Calculation and application of disinfectants
- Composting of dead birds and manure

Ilaria Capua: winner of the 2011 Penn Vet World Leadership in Animal Health Award

Ilaria Capua, DVM, PhD, has been named the winner of the 2011 Penn Vet World Leadership in Animal Health Award. Dr. Capua's expertise as virologist, epidemiologist, and communicator uniquely positions her as a worldwide leader in the field of avian influenza. She has used that position to foster a closer working relationship between the animal and human health professions.

Since 1995, Dr. Capua has been involved with the European Commission (EC) through working groups related to viral diseases of animals, and, since 2003, on issues related to influenza pandemic preparedness.

In 2005 she was nominated as Chairman of OFFLU, the World Organisation for Animal Health (OIE)/FAO network on animal influenza that offers veterinary expertise and crisis management support to developing countries.

In 2006 she opted to deposit the genetic sequence of the first African strain of H5N1 into the publically-available GenBank, the National Institutes of Health (NIH) genetic sequence database, rather than into a private database to which only 15 laboratories had access. This ignited an international debate on data sharing, which resulted in the launch of the Global Initiative on Sharing All Influenza Data (GASAID), endorsed by 70 medical and veterinary virologists and six Nobel laureates.

Dr. Capua's vision to share avian influenza virus sequences to allow a better understanding of animal and human influenza infections using a transdisciplinary approach has become a core part of the global influenza preparedness strategy.

Dr. Capua has had extensive experience in the direct management of several avian influenza and Newcastle disease epidemics and, in 2000, developed the DIVA (Differentiating Infected from Vaccinated Animals) vaccination strategy. This innovate strategy enabled the continuation of trade while combating avian influenza by vaccination. As a result, avian influenza was eradicated from Italy at that time.

Dr. Capua's contributions to global health are evident in a review of her most recent professional assignments, including: Senior Policy Advisor to the Director NCZVED, CDC; Member of the Scientific and Technical Advisory Group to the World Health Organization (WHO) Global Influenza Programme; and Member of the European Technology Platform for Global Animal Health.

Dr. Capua has authored more than 300 publications since 1990. Most of her research and writings have focused on viral disease of animals and those of zoonotic importance. She has extensive experience in managing projects funded by international organizations and agencies, such as the EC, FAO and the OIE.

Dr. Capua is Director of the OIE/FAO and National Reference Laboratory for Avian Influenza and Newcastle Disease at the OIE Collaborating Centre for Diseases at the Human-Animal Interface, and of the Research and Development Unit at the Instituto Zooprofilattico Sperimentale delle Venezie, in Legnaro, Italy. The Institute hosts the National, FAO and OIE Reference Laboratory for avian influenza and Newcastle disease and the OIE Collaborating Center for Diseases at the Human-Animal Interface.

FAO is working on upgrading live bird market biosecurity in Guangzhou, China

Pandemics, most of which have their origins in animal species, are epidemics of infectious diseases that spread through human populations across large regions such as a continent, or even worldwide. Their impact in terms of health, economic, and social consequences can be disastrous and permanent.

There have been a number of significant pandemics recorded in human history, but the frequency and impact of emerging and re-emerging animal diseases have increased over the past decades. In fact, 75 percent of emerging infectious diseases in humans have their origin in animals and, of these, insidious diseases emerging from wildlife represents the vast majority. Today, there is global recognition that more animal-borne diseases can be expected in the future and handling the infectious uncertainty has become an imperative.

The rising number of disease events places challenges on contemporary ways of living. To feed a growing population, the world needs to produce more food every year. The intensification of livestock production, the concentration of intensive production systems in close proximity to urban population centres observed in some countries, and husbandry practices with inadequate biosecurity measures all contribute to the emergence of diseases and their transmission, both among animals and humans. These factors influence the dynamics of viral pathogens which adopt new behaviours such as expanding geo-ecological range, jumping species, and/or changing to a higher level of virulence.

Some of the actions to mitigate disease emergence and re-emergence are included in biosecurity measures along the market value chain. But these activities can only be successful if done in close collaboration between the private and public sectors, in the form of public-private- partnerships (PPP).

To this end, following a first mission in China by three international experts (Bob Burden, PPP Advisor; Andrew Almond, Biosecurity Technical Advisor; and Astrid Tripodi, Animal Disease Management Expert) to review the practical implementation of PPP activities, a second mission to Guangzhou (China) was organized in early-August to present the action plan for live bird market restructuring to the Veterinary Authorities and relevant stakeholders.

A meeting was held on 2 August 2011 in Guangzhou and was attended by representatives from Guangdong Provincial Veterinary Services, Guangzhou Animal Health Inspection Institute, and

relevant stakeholders from Guangzhou Jiangcun Poultry Wholesale Market. During the meeting, the action plan for live bird market restructuring was presented. Seven biosecurity Critical Control Points (CCPs) proposed by the international experts were discussed.

The CCPs included in the action plan for live bird market restructuring are:

1. Single entry and single exit-one way flow;
2. Develop Cleaning and Disinfection (C&D) stations;
3. Training on Biosecurity and C&D practices;
4. Bamboo crate decommissioning;
5. C&D of market sheds;
6. Water testing for chlorine;
7. Disposal issues.

In addition to the above, FAO's Emergency Centre for Transboundary Animal Diseases (ECTAD) in China also conducted a social network analysis survey. They collected questionnaires related to market value chains in order to obtain baseline information about vendors' trading practices. All the information collected was shared with local authorities to improve biosecurity measures in the region.

FAO's Animal Health Service (AGAH) assists member countries wishing to take full advantage of the rapidly growing and transforming livestock sector while upholding public health and national priorities. These efforts support FAO's mandate to raise the levels of nutrition, improve agricultural productivity, better the lives of rural populations, and contribute to the growth of the world economy.

MOST RECENT H5N1 AI OUTBREAKS 2006-2011

Note: This list has been compiled on the basis of information up to 30 September 2011.

2011

September	Bangladesh, Egypt, India, Viet Nam
August	Cambodia, Indonesia
May	Korea (Republic of)
April	Israel (Jordan Valley), **Mongolia**
March	China (Hong Kong SAR), India, Japan, Myanmar
February	West Bank

2010

October	Nepal
June	Russian Federation
May	China
April	Lao PDR
March	Bhutan, **Bulgaria**, Romania

2009

March	Germany

2008

November	Thailand
September	Togo
July	Nigeria
June	Pakistan
May	United Kingdom
March	Turkey
February	**Switzerland**, Ukraine
January	Saudi Arabia

2007

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

2006

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

***Green**: areas which never had reported outbreaks in poultry*

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

AT A GLANCE

The latest HPAI outbreaks for the period 1 – 30 September 2011

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

AFRICA

Egypt

A total of three H5 HPAI positive cases were reported during September in smallholders (<100 birds) in Dakahlia, Giza and Menoufia Governorates.

ASIA

Bangladesh

A H5N1 HPAI outbreak was reported on a commercial chicken farm in Manikgonj District, Dhaka Division. A total of 6 birds died and 544 were destroyed.

India

Following the discovery of an HPAI outbreak in Dhubri District, Assam reported to OIE on 8 September 2011, another outbreak occurred on 14 September 2011 in Nadia District, West Bengal. It has been reported that the stamping out of all domestic poultry in an approximately 3-km-radius zone around the outbreak has been applied with compensation. There was a susceptible total population of 99,714 birds, of which 17,694 have died or been destroyed.

Indonesia

July 2011: The Participatory Disease Surveillance and Response (PDSR) programme through 33 Local Disease Control Centres covers 71,976 villages in 86 percent of Indonesia's 448 districts and municipalities in 29 of its 33 provinces. During July, PDSR conducted surveillance in 1,675 villages (2.3 percent). The overall HPAI incidence was 1.6 infected villages per 1 000 villages under surveillance. The highest HPAI incidence occurred in in Sulawesi Selatan Province (17.2* per 1 000), followed by Kepulauan Bangka Belitung (13.0** per 1000) and Sulawesi Barat (10.9* per 1 000). The high incidence rates reflect a major outbreak which occurred in South Sulawesi (*) and the high level of PDSR activity in a group of small islands with less than 400 villages in total, where five villages were infected (**). No village visits were undertaken in Kalimantan Barat, Kalimantan Selatan, Sulawesi Utara, Nusa Tenggara Barat and Nusa Tenggara Timur Provinces during this period.

August 2011: During August, PDSR conducted surveillance in 1,340 villages (1.9 percent). The overall HPAI incidence was 0.9 infected villages per 1 000 villages under surveillance. The highest HPAI incidence occurred in Sulawesi Barat (21.7 per 1 000), followed by Sulawesi Selatan (5.3 per 1 000), Kalimantan Timur (3.3 per 1 000) and Kepulauan Bangka Belitung (2.6 per 1 000). No village visits were undertaken in Kalimantan Selatan, Kalimantan Tengah, Gorontalo, Sulawesi Tenggara, Sulawesi Utara, and Nusa Tenggara Timur Provinces during this period.

Viet Nam

During September, there were no new outbreaks reported on the government website. However, it appears that Quang Tri (North Central Coast Region) and Quang Ngai (South Central Coast Region). Provinces had sporadic outbreaks since the disease information released on 30 September 2011 indicated that these provinces are less than 21 days after the last HPAI H5N1 outbreaks.

SUMMARY OF CONFIRMED HPAI OUTBREAKS
(As of 30 September 2011)

Sources: OIE, European Commission (EC), FAO and national governments – WHO for human cases/deaths.
Note: H5N1 unless otherwise indicated. Highlighted countries indicate those in which there has been only one officially confirmed H5N1 outbreak or occurrence. Dates of the last outbreak within this year are in bold.

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	**17 September 2011**	Domestic poultry – wild birds – donkeys	**151 / 52**
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
South Africa	1 February 2011	**9 August 2011** (H5N2, PCR H5 positive)	Ostrich	-
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	**6 September 2011**	Domestic poultry	**3 / 0**
Bhutan	18 February 2010	14 March 2010	Domestic poultry	-
Cambodia	12 January 2004	**25 August 2011**	Domestic poultry – wild birds	**18 / 16**
China	20 January 2004	9 May 2010 wild birds	Domestic poultry – wild birds	40 / 26
China (Hong Kong SAR)	19 January 2004	**1 March 2011**	Domestic poultry – Wild birds	
India	27 January 2006	**14 September 2011**	Domestic poultry	-
Indonesia	2 February 2004	**August 2011**	Domestic poultry – pigs (with no clinical signs)	**178/ 146**
Japan	28 December 2003	**16 March 2011**	Domestic poultry – wild birds – raccoons (no clinical signs)	-
Kazakhstan	22 July 2005	10 March 2006	Domestic poultry – wild birds	-
Korea, Rep. of	10 December 2003	**16May 2011**	Domestic poultry – wild birds	-
Lao PDR	15 January 2004	27 April 2010	Domestic poultry	2 / 2
Malaysia	7 August 2004	2 June 2007	Domestic poultry – wild birds	-
Mongolia	10 August 2005	**5 April 2011**	Wild birds	-
Myanmar	8 March 2006	**16 March 2011**	Domestic poultry	1 / 0
Nepal	8 January 2009	25 October 2010	Domestic poultry	-
Pakistan	23 February 2006	17 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	**September 2011**	Domestic poultry	119/ 59

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	**6 April 2011** (Jordan Valley)	Domestic poultry – Emu (zoo)	-
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	**27 February 2011**	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	29 March 2010	Wild birds	-
Croatia	21 October 2005	24 March 2006	Wild birds	-
Czech Republic	20 March 2006	11 July 2007	Wild birds – domestic poultry	-
Denmark	12 March 2006	22 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	10 January 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	22 December 2007	Wild birds – domestic poultry	-
Romania	7 October 2005	27 March 2010	Wild birds – domestic poultry – cat	-
Russian Federation	15 July 2005	5 June 2010 wild birds	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	9 October 2009 (H7)	Poultry	-
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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