

H5N1 avian influenza: Timeline of major events

30 July 2007

Early Events

Date	Events in Animals	Events in Humans
1996	Highly pathogenic H5N1 virus is isolated from a farmed goose in Guangdong Province, China .	
1997	Outbreaks of highly pathogenic H5N1 are reported in poultry at farms and live animal markets in Hong Kong .	Human infections with avian influenza H5N1 are reported in Hong Kong . Altogether, 18 cases (6 fatal) are reported in the first known instance of human infection with this virus.
Feb 2003		Two human cases of avian influenza H5N1 infection (one fatal) are confirmed in a Hong Kong family with a recent travel history to Fujian Province, China . A third family member died of severe respiratory disease while in mainland China, but no samples were taken.

Subsequent Events

Date	Events in Animals	Events in Humans
25 Nov 2003		A fatal human case of avian influenza H5N1 infection occurs in China in a 24-year-old man from Beijing and is attributed to SARS. This case is retrospectively confirmed in August of 2006 (as the 20 th human case in China).
12 Dec 2003	Republic of Korea first reports H5N1 in poultry. Outbreaks continue through September 2004.	
Dec 2003 - Jan 2004	Two tigers and two leopards, fed on fresh chicken carcasses, die unexpectedly at a zoo in Thailand . Subsequent investigation identifies a H5N1 virus similar to that circulating in poultry. This is the first report of influenza causing disease and death in big cats.	
8 Jan 2004	Viet Nam first reports H5N1 in poultry. Outbreaks continue to be reported on a regular basis.	

11 Jan 2004		Viet Nam identifies H5N1 as the cause of human cases of severe respiratory disease with high fatality. Sporadic cases are reported through mid-March.
12 Jan 2004	Japan first reports H5N1 in poultry, outbreaks continue in commercial poultry through March 2004.	
19 Jan 2004	Hong Kong reports H5N1 in a dead wild bird (first report in birds since poultry outbreak in 1997)	
23 Jan 2004	Thailand first reports H5N1 in poultry. By the end of January, 32 provinces (throughout the north and several in the south) report outbreaks in many types of poultry, including fighting cocks, and outbreaks continue to be reported throughout the year. The virus appears closely related to the isolates from human cases in Viet Nam. Thailand prohibits vaccination of poultry.	Thailand reports two laboratory-confirmed cases of human infection with H5N1. Sporadic cases are reported through mid-March.
24 Jan 2004	Cambodia first reports H5N1 in poultry.	
27 Jan 2004	Lao PDR first reports H5N1 in poultry.	
1 Feb 2004		Investigation of a family cluster of cases, which occurred in Viet Nam in early January, cannot rule out the possibility of limited human-to-human transmission.
2 Feb 2004	Indonesia first reports H5N1 in poultry in 11 provinces. Outbreaks continue to be reported. Vaccination is allowed.	
4 Feb 2004	China first reports H5N1 in poultry. During February-March, 16 mainland provinces are affected, and approx. 9 million poultry culled. Government-subsidized vaccination initiated.	
20 Feb 2004	A report from Thailand confirms that a domestic cat was infected with H5N1 after eating an infected pigeon. ¹	
18 Mar 2004		<i>Research</i> ² Case studies of 10 patients in Viet Nam point to close contact with infected poultry as the probable source of infection in most cases, but conclude that, in two family clusters, limited human-to-human transmission within the family cannot be ruled out.
Jun/Jul 2004	China reports recurrence of H5N1 in poultry. Outbreaks continue to be reported in Indonesia, Viet Nam and Thailand .	
8 Jul 2004	<i>Research</i> ³ Research identifies the dominant Z genotype in poultry, considers possible role of wild birds in spread, and concludes that H5N1 has found a new	

	ecological niche in poultry, but is not yet fully adapted to this host.	
13 Jul 2004	<i>Research</i> ⁴ Research shows that H5N1 has become progressively more lethal for mammals and can kill wild waterfowl, long considered a disease-free natural reservoir.	
Jul 2004		<i>Research</i> ⁵ A case report is published indicating atypical human H5N1 infection in Thailand (from March 2004), with fever and diarrhoea but no respiratory symptoms. The report suggests that the clinical spectrum of disease may be broader than previously thought.
12 Aug 2004		Viet Nam reports 3 new human cases, all fatal (first cases since February). Dates of hospital admission are from 19 July to 8 August.
19 Aug 2004	Malaysia (peninsular) first reports H5N1 in poultry. Outbreaks and positive avian surveillance samples continue to be reported through September 2004.	
20 Aug 2004	<i>Research</i> ⁶ Chinese researchers report preliminary findings of H5N1 infection in pigs. No evidence suggests that pig infections are widespread, and the finding appears to have limited epidemiological significance.	
2 Sep 2004	<i>Research</i> ⁷ Research shows that domestic cats experimentally infected with H5N1 develop severe disease and can spread infection to other cats. Prior to this research, domestic cats were considered resistant to disease from all influenza A viruses.	
7 Sep 2004		A 4 th fatal human case is reported in Viet Nam .
9 Sep 2004		Thailand confirms its third fatal case of human infection.
28 Sep 2004		Thailand confirms 2 further human cases.
4 Oct 2004		Thailand confirms its 4 th human case.
18 Oct 2004	Two healthy Hawk-Eagles smuggled from Thailand are seized at Brussels International Airport. HPAI H5N1 is isolated.	
20 Oct 2004	A second outbreak of HPAI H5N1 in zoo tigers in Thailand occurs. It is attributed to tigers having been fed fresh chicken carcasses and whole chickens. Altogether, 147 tigers out of a population of 441 die	

	or are euthanized. No virus is detected in birds in zoo or local area.	
25 Oct 2004		Thailand confirms its 5 th human case.
29 Oct 2004	<i>Research</i> ⁸ Research confirms that domestic ducks can act as silent reservoirs, excreting large quantities of highly pathogenic virus yet showing few if any signs of illness.	
3 Nov 2004	Hong Kong SAR reports H5N1 in a dead wild bird (last report January 2004).	
Dec 2004	Poultry outbreaks continue in Indonesia, Thailand, and Viet Nam and possibly also in Cambodia and Lao PDR . Reported outbreaks continue more or less continuously in Indonesia through August 2006, in Thailand through November 2005, and in Viet Nam through December 2005.	
30 Dec 2004		Viet Nam confirms a new case.
6 Jan 2005		Viet Nam confirms 2 further cases.
14 Jan 2005	Hong Kong reports H5N1 in one wild bird as part of routine surveillance.	Total number of human cases in Viet Nam rises to 6. Sporadic cases continue to be reported over the coming months, making Viet Nam the hardest hit country.
27 Jan 2005		<i>Research</i> ⁹ Research concludes that a girl in Thailand probably passed the virus to at least her mother in September 2004, causing fatal disease. This is the first published account of probable secondary human transmission, resulting in severe disease, of any avian influenza virus.
2 Feb 2005		Cambodia confirms its first human case, which is fatal.
17 Feb 2005		<i>Research</i> ¹⁰ Research retrospectively identifies at least one fatal atypical case in Viet Nam (from Feb 2004), presenting with diarrhoea and encephalitis, but normal chest X-rays.
29 Mar 2005		Cambodia confirms its 2 nd case, also fatal.
12 Apr 2005		Cambodia confirms its 3 rd case, also fatal.
30 Apr 2005	Wild birds begin dying at Qinghai Lake in central China, where hundreds of thousands of migratory birds congregate. Altogether, 6,345 birds from different species die in the coming weeks. This is the first reported instance of any HPAI causing mass die-offs in wild birds.	
4 May 2005		Cambodia confirms its 4 th case, also fatal.

8 Jun 2005	China reports poultry outbreak in Xinjiang Autonomous Region. Reports continue from several provinces, through February 2006.	
26 Jun 2005	Japan reports LPAI H5N2 in poultry, which continues to be detected through April 2006. Source remains unconfirmed, though one rumour suggests the strain was introduced via improperly prepared vaccine.	
30 Jun 2005		A WHO investigative team finds no evidence that H5N1 has increased its transmissibility in humans in Viet Nam.
6 Jul 2005	<i>Research¹¹</i> Research on viruses isolated from dead birds in Qinghai Lake suggests the outbreak was caused by a new H5N1 variant that may be more lethal to wild birds and experimentally infected mice.	
7 Jul 2005	The Philippines reports LPAI (likely an H9) in poultry.	
14 Jul 2005	<i>Research¹²</i> Research on viruses isolated from dead birds in Qinghai Lake demonstrates transmission of the virus among migratory geese and suggests that the virus may be carried along winter migratory routes.	
15 Jul 2005	H5N1 is detected in three captive Owston's palm civets that died in late June in a Vietnamese wildlife preserve. This is the first reported infection of this species with the virus. The civets were not fed chicken and the source of infection remains unknown.	
21 Jul 2005		Indonesia confirms its first human case. Infection in two other family members is considered likely, but cannot be laboratory confirmed. Subsequent investigation is unable to determine the source of infection. Virus has been circulating in poultry in Indonesia since February 2004.
23 Jul 2005	Russia reports first outbreaks of H5N1, in poultry in the Novosibirsk region. Dead migratory birds are reported in the vicinity of outbreaks. From 23 July- 22 December 2005, a total of 62 sites in 10 regions are confirmed as HPAI H5N1-positive.	
29 Jul 2005	Kazakhstan reports first H5N1 in poultry in areas adjacent to Siberia. Dead migratory birds are reported in the vicinity of outbreaks.	
2 Aug 2005	Indonesia reports H5N1 in poultry and	

	pigs during surveillance in the region where the recent human cases lived (Tangerang district, Banten province, West Java).	
10 Aug 2005	China reports additional outbreaks in several provinces through February 2006. Vaccination is initiated in affected regions using an H5N2 monovalent inactivated vaccine. Mongolia reports deaths in 89 migratory birds at two lakes in Northern Mongolia. H5N1 is subsequently identified in 4 of the birds.	
16 Sep 2005		Indonesia confirms its 2 nd case.
22 Sep 2005		Indonesia confirms its 3 rd case.
29 Sep 2005		Indonesia confirms its 4 th case. <i>Research</i> ¹³ Research describes the clinical features of H5N1 infection and reviews recommendations for the management of cases.
Oct 2005		<i>Research</i> ¹⁴ Research on the evolution of human and animal viruses circulating in Asia in 2005 suggests that several amino acids located near the receptor-binding site are undergoing change, some of which may affect antigenicity or transmissibility.
6 Oct 2005	Highly pathogenic H5N1 is first reported in poultry in Turkey .	<i>Research</i> ^{15, 16} Research describes reconstruction of the lethal 1918 pandemic virus, concludes that this virus was entirely avian, and finds some similarities with H5N1.
7 Oct 2005	Highly pathogenic H5N1 is first reported in poultry in Romania . Reports continue through July 2006.	
10 Oct 2005		Indonesia confirms its 5 th human case.
20 Oct 2005	Taiwan, China reports the detection of highly pathogenic H5N1 in a cargo of exotic songbirds smuggled from mainland China.	Thailand confirms its first human case since October 2004.
21 Oct 2005	Croatia first reports H5N1 in wild birds (migratory swans). H5N1 continues to be reported in wild birds on routine surveillance, through April 2006.	
23 Oct 2005	The United Kingdom reports highly pathogenic H5N1 in an imported parrot, held in quarantine, that died 3 days earlier.	
24 Oct 2005		Thailand confirms its 19 th human case, and Indonesia confirms its 6 th and 7 th human cases.
9 Nov 2005		Viet Nam confirms its first new case

		since July 2005.
11 Nov 2005	Kuwait detects highly pathogenic H5N1 in a single migratory flamingo, marking the first report of this disease in the Gulf region.	
17 Nov 2005		China confirms its first two human cases, from Hunan and Anhui provinces (does not include the case in 2003, confirmed retrospectively).
24 Nov 2005		China confirms its third human case, from Anhui province. Sporadic cases continue to be reported in the coming weeks.
2 Dec 2005	Ukraine reports its first H5N1 outbreak in domestic birds in Crimea. Outbreaks continue to be reported through February 2006.	
26 Dec 2005	Turkey reports a new outbreak in poultry in the eastern province of Iğdir. Through April 2006, additional outbreaks are reported in primarily backyard poultry in 11 of the country's 81 provinces. Wild birds are also reported to be infected. Control measures include culling of poultry in Iraqi Kurdistan and all backyard poultry in Iran within 10 km of the Turkish border. Vaccination is prohibited.	
Jan 2006	Qinghai Lake-like H5N1 viruses are reportedly isolated from cats in Northern Iraq. ¹⁷	By the end of 2005, Indonesia has confirmed a total of 20 cases in humans.
5 Jan 2006		Turkey confirms its first two human cases. Sporadic cases continue to be reported in the coming weeks, but rapidly end. Viruses are similar to those currently circulating in birds.
20 Jan 2006	Hong Kong reports H5N1 in a dead wild bird (first report since January 2005), and H5N1 reports in wild birds (and in 2 chickens) continue through March 2006. These viruses all belong to H5N1 genotype V, which has previously been recorded in southern China, Japan and South Korea.	
30 Jan 2006		Iraq confirms its first human case, in a 15-year-old girl in Sulaimaniyah.
1 Feb 2006	Iraq reports its first outbreak of H5N1, in backyard flocks in same village where human case detected.	
3 Feb 2006	Bulgaria first reports H5N1 in wild birds (swans).	
8 Feb 2006	Nigeria first reports H5N1 in poultry. This is the first report of the virus in Africa. Outbreaks in poultry and	

	ornamental birds are reported through March 2006.	
9 Feb 2006	Greece first reports H5N1 in wild birds (swans). Additional reports in wild birds through March 2006.	
11 Feb 2006	Italy first reports H5N1 in wild birds.	
12 Feb 2006	Slovenia first reports H5N1 in a wild bird (swan). A total of 48 dead wild birds are reported through March 2006.	
13 Feb 2006	Iran first reports H5N1 in wild birds (swans) found dead on routine surveillance. Russia reports H5N1 outbreaks (at large commercial farms) in the Caucasus region, near the border with Azerbaijan. Further outbreaks are reported in backyard poultry, pigeons, and wild birds in Tyva Republic, Altaj, Tomsk, Omsk and Novosibirsk regions through July 2006. (first outbreak reported since October 2005)	China confirms its 12 th case and 8 th fatality. Some human cases have occurred in areas with no reported outbreaks in poultry. Indonesia confirms its 25 th case and 18 th fatality.
14 Feb 2006	Germany first reports H5N1 in wild birds (swans). Reports of H5N1 in wild birds on routine surveillance continue through April 2006.	
17 Feb 2006	Egypt reports its first H5N1 in domestic poultry (since 1965). Outbreaks continue to be reported through December 2006. France first reports H5N1 in a wild duck (followed by additional reports in other wild birds).	Iraq confirms its second human case.
18 Feb 2006	India first reports H5N1 in domestic poultry. Reported outbreaks continue through April 2006. Austria first reports H5N1 in wild birds (swans). Austria continues to find H5N1 in some wild birds on routine surveillance, until April 2006.	
19 Feb 2006	Malaysia reports H5N1 in a flock of free-range poultry (last reported September 2004). Outbreaks reported through March 2006.	
20 Feb 2006	Bosnia-Herzegovina and Slovakia each first report H5N1 in wild birds (migratory swans).	
21 Feb 2006	Hungary first reports H5N1 in wild birds (swans). <i>Research</i> ¹⁸ Studies of H5N1 viruses show that multiple genetically and antigenically distinct sublineages of the virus are now established in poultry in parts of Asia. Poultry-to-poultry transmission is thought to sustain endemicity of the virus in this	

	region. H5N1 virus is isolated from apparently healthy migratory birds in southern China, suggesting that migratory birds can carry the virus over long distances.	
23 Mar 2006	West Bank/Gaza Strip first reports H5N1 in poultry. Outbreaks reported through April 2006.	
24 Feb 2006	Azerbaijan first reports H5N1 in migratory birds. H5N1 is later also confirmed in poultry. Georgia first reports H5N1 in wild birds (swans).	
25 Feb 2006	France first reports H5N1 in a single turkey farm, marking the first appearance of this disease in domestic poultry in the EU. Had previously been identified in wild birds in France.	
27 Feb 2006	Niger first reports H5N1 in domestic poultry (area near border with affected states of northern Nigeria) Pakistan first reports H5N1 in poultry. Outbreaks are reported through July 2006.	
28 Feb 2006	Germany reports H5N1 infection in a dead domestic cat on the Isle of Ruegen. Two more cats on the Island are found to be infected in March. Cats are thought to have been exposed by eating infected birds.	
1 Mar 2006	Serbia-Montenegro first reports H5N1 in wild birds (swans). Switzerland first reports H5N1 in a dead wild bird. Additional wild birds are reported positive in March and April from various locations throughout the country on routine surveillance.	
6 Mar 2006	Poland first reports H5N1 in wild birds (swans). Reports continue through May 2006.	
7 Mar 2006	Albania first reports H5N1 in poultry (chickens). Austria reports H5N1 in 3 domestic cats in an animal shelter.	
9 Mar 2006	Germany reports H5N1 infection in a stone marten on the Isle of Ruegen, marking the first documented infection of this species with an avian influenza virus. Myanmar reports H5N1 in poultry (first since 1996).	
11 Mar 2006	Cameroon first reports H5N1 in domestic ducks.	
13 Mar 2006	Serbia-Montenegro first reports H5N1 in poultry (1 rooster). Had been	Iraq has its third human case, in a 3-year-old boy (case retrospectively confirmed

	previously reported in wild birds.	in September, 2006)
14 Mar 2006	Denmark first reports H5N1 in a wild bird. Reports in wild birds continue through May of 2006.	Azerbaijan confirms its first human cases.
15 Mar 2006	Afghanistan first reports H5N1 in poultry and a crow.	
16 Mar 2006	Israel first reports H5N1 in poultry. Sweden first reports H5N1 in 36 dead wild birds tested in February and March (no increase in overall wild bird mortality)	
17 Mar 2006	Khazakstan reports H5N1 in wild birds (first since August 2005) Sweden first reports HPAI H5 (no N type given) in poultry in a game bird holding within the surveillance zone set up in response to detection of H5N1 in wild birds.	
20 Mar 2006		Egypt confirms its first human case
23 Mar 2006	Cambodia reports its first outbreak in poultry since December 2004. Outbreaks continue to be reported through fall 2006. Jordan first reports H5N1 in poultry.	<i>Research</i> ^{19, 20} Two research groups publish findings that may help explain why the H5N1 virus does not easily infect humans or – like normal seasonal influenza – spread readily by coughing or sneezing. Whereas human influenza viruses attach themselves to molecules in cells lining the nose and throat, avian viruses prefer to bind to molecules located deep in the lungs. Such findings are consistent with the clinical picture of H5N1 infection, in which most patients present with symptoms of infection in the lower respiratory tract, with rapid progression to pneumonia.
27 Mar 2006	Czech Republic first reports H5N1 in a wild bird (swan). Reports in wild swans continue through May 2006. Sweden detects H5N1 in a wild mink in southern Sweden in an area where wild birds cases have been detected.	
3 Apr 2006	Burkina Faso first reports H5N1 in poultry (guineafowl).	
5 Apr 2006	Germany first reports H5N1 in poultry, in turkeys on a single farm (previously reported in wild birds).	
6 Apr 2006	United Kingdom first reports H5N1 in a single wild bird (swan).	Cambodia confirms its first human case since April 2005.
12 Apr 2006		Indonesia confirms its 31 st human case in a 23-year-old man from West Java.
13 Apr 2006		Egypt confirms its 12 th human case in a 18-year-old woman from Minufiyah.
17 Apr 2006	Sudan first reports H5N1 in poultry (both	

	intensive and backyard systems). Additional outbreaks reported through October 2006.	
19 Apr 2006	China reports H5N1 in wild aquatic and other birds in Qinghai and Tibet regions. Côte d'Ivoire first reports H5N1 in poultry and a wild bird. Outbreaks continue to be reported through July 2006.	China confirms its 17 th human case in an 21-year-old man from Hubei. Indonesia confirms its 32 nd human case in a 24-year-old man from Banten.
24 Apr 2006	Djibouti reports its first case of H5N1 in poultry.	
27 Apr 2006		China confirms its 18 th human case in an 8-year-old girl from Sichuan.
4 May 2006	Mongolia reports H5N1 in dead wild birds on routine surveillance through June 2006 (last report August 2005).	Egypt confirms its 13 th human case in a 27-year-old woman from Cairo.
8 May 2006		Indonesia confirms its 33 rd human case in a 30-year-old man from Jakarta
9 May 2006	Ukraine first reports HPAI H5 in wild birds (previously reported in poultry)	
12 May 2006		Djibouti confirms its first human case in a 2-year-old girl from Arta.
18 May 2006	Denmark reports its first outbreak of H5N1 HPAI in domestic poultry (was previously reported in wild birds). An outbreak of H5N2 LPAI was also reported during this period.	Egypt confirms its 14 th case in a 75-year-old woman from Al Minya. Indonesia reports the largest family cluster in any country to date, with 7 confirmed cases (the 34 th through 39 th and the 42 nd) from 4 households in the Karo district of North Sumatra. The index case (unconfirmed) develops symptoms on 24 Apr, the last case dies on 22 May. Cases include the index case's 2 sons, (aged 15 and 17 years), her 10-year-old nephew, her 2 brothers (aged 25 and 32 years), her 28-year-old sister, and this sister's 18-month-old daughter. Disease does not spread beyond the extended family. Limited human to human transmission can not be ruled out. Viruses do not show any significant genetic mutations or reassortment. Indonesia also confirms its 40 th human case, in a 38-year-old woman from East Java.
19 May 2006		Indonesia confirms its 41 st human case in a 12-year-old boy from East Jakarta.
29 May 2006		Indonesia confirms its 43 rd - 48 th human cases in an 18-year-old man from East Java, a 10-year-old girl and her 18-year-old brother from West Java, a 39-year-old man from Jakarta, a 43-year-old man from Jakarta, and a 15-year-old girl from West Sumatra. All 6 cases are unrelated to the family cluster in Karo, North Sumatra.

4 Jun 2006	China reports its first cases in poultry since February 2006. Outbreaks reported from various provinces through October 2006.	
6 Jun 2006		Indonesia confirms its 49 th human case in a 15-year-old boy from West Java.
9 Jun 2006	Hungary reports its first H5N1 in poultry (previously reported in wild birds).	
15 Jun 2006	Ukraine reports H5N1 in poultry (first report since February 2006), first reported in wild birds in May 2006.	Indonesia confirms its 50 th human case in a 7-year-old girl from Banten.
16 Jun 2006		China confirms its 19 th human case, in a 31-year-old man in Guandong.
20 Jun 2006		Indonesia confirms its 51 st human case in a 13-year-old boy from Jakarta.
30 Jun 2006		<i>Research</i> ²¹ The first analysis of epidemiological data on all 205 laboratory-confirmed H5N1 cases officially reported to WHO from Dec 2003 to 30 Apr 2006 is published by WHO.
4 Jul 2006		Indonesia confirms its 52 nd human case in a 5-year-old boy from East Java.
7 Jul 2006	Spain first reports H5N1 in a single wild shore bird (grebe) in northern region.	
14 Jul 2006		Indonesia confirms its 53 rd human case in a 3-year-old girl from Jakarta.
20 Jul 2006		Indonesia confirms its 54 th human case in a 44-year-old man from Jakarta.
26 Jul 2006	Thailand reports two H5N1 outbreaks in poultry (in Phichit and Nakhon Phanom provinces). These are the first reported in more than 8 months. Poultry vaccination remains prohibited.	Thailand confirms its 23 th human case in a 17-year-old boy from Phichit in northern Thailand (the first human case in Thailand in 2006).
27 Jul 2006	Lao PDR reports H5N1 in poultry (first reported since January 2004)	
3 Aug 2006	H5N1 is detected in a captive zoo swan in Germany (previously reported in both wild and domestic birds)	
30 Aug 2006	Viet Nam reports H5N1 in unvaccinated duck flocks and market ducks on routine surveillance. Ducks did not show clinical signs. (First report since December 2005)	
7 Aug 2006		Thailand confirms its 24 th human case in a 27-year-old man from Uthai Thani in central Thailand.
8 Aug 2006		China retrospectively confirms its 20 th human case in a 24-year-old man from Beijing who became ill in late November 2003 and died. This case becomes the first

		confirmed case of HPAI H5N1 infection in the present outbreak. The case was initially attributed to SARS. Indonesia confirms its 55 th human case in a 16 -year-old boy from West Java, and becomes the country with the most human deaths (43) from H5N1 HPAI infection, surpassing Viet Nam.
9 Aug 2006		Indonesia confirms its 56 th human case in an 17-year-old girl from Jakarta.
14 Aug 2006		Indonesia confirms its 57 th human case in an 17-year-old boy from West Java (Cikelet/Garut Cluster).
14 Aug 2006	The USA detects LPAI H5N1 in wild mute swans in Michigan.	China confirms its 21 st human case in a 62 -year-old man from the Uygur Autonomous Region in north-western China.
17 Aug 2006		Indonesia confirms its 58 th human case in an 9-year-old girl from West Java (Cikelet/Garut Cluster).
21 Aug 2006		Indonesia confirms its 59 th human case in an 35-year-old woman from West Java (Cikelet/Garut Cluster). In this cluster, there was no evidence of human to human transmission, poultry deaths were possibly linked with live chickens returning to village from live animal market, and there were possible additional human cases that were not confirmed.
23 Aug 2006		Indonesia confirms its 60 th human case in an 6-year-old girl from West Java.
2 Sep 2006	The USA detects LPAI H5N1 in wild ducks in Pennsylvania and Maryland.	
8 Sep 2006		Indonesia confirms its 61 st human case in an 14-year-old girl from South Sulawesi. Due to revisions to the WHO case definition, two cases are retrospectively confirmed in Indonesia : The 62 nd in an 8-year-old girl from Banten (in late June 2005) and the 63 rd in a 45-year-old man from central Java (in late November 2005)
14 Sep 2006		Indonesia confirms its 64 th human case in a 5-year-old boy from West Java and (through follow up testing) its 65 th human case in a 27-year-old male from West Sumatra (brother of 15 -year-old girl; was possible human to human transmission).
25 Sep 2006		Indonesia confirms its 66 th human case in an 11-year-old boy from East Java and its 67 th human case in a 9-year-old boy from Jakarta.
27 Sep 2006		Indonesia confirms its 68 th human case in a 20-year-old man from West Java.

27 Sep 2006		Thailand confirms its 25 th human case, in a 59-year-old man from Nong Bua Lam Phu Province in Northeastern Thailand.
3 Oct 2006		Indonesia confirms its 69 th human case in a 21-year-old woman from East Java (the sister of the 66 th case).
11 Oct 2006		Egypt confirms its 15 th human case, in a 39-year-old woman from Gharbiya (the first human case since May 2006).
16 Oct 2006		Indonesia confirms its 70 th human case in a 67-year-old woman from West Java, its 71 st human case in a 11-year-old boy from Jakarta, and its 72 nd human case in a 27-year-old woman from Central Java.
30 Oct 2006	<i>Research</i> ²² A surveillance study of H5N1 isolates from poultry in southern China confirms that subtypes continue to emerge and their relative prevalence continues to change.	
13 Nov 2006		Indonesia confirms its 73 rd human case in a 35-year-old woman from Banten and its 74 th human case, in a 30 month old boy from West Java.
22 Nov 2006	Republic of Korea reports H5N1 in poultry (first since September 2004). Outbreaks continue to be reported.	
10 Dec 2006		China confirms its 22 nd human case in a 37-year-old man from Anhui (retrospectively confirmed on 10 January 2007).
14 Dec 2006	In an effort to contain the disease, live animal markets in Beijing, China are permanently closed.	
19 Dec 2006	Viet Nam reports H5N1 in unvaccinated poultry (first report since August 2006). Outbreaks become widespread in the southern part of the country.	
27 Dec 2006		Egypt confirms its 16 th , 17 th , and 18 th human cases in an extended family in Gharbiyah. The isolated viruses had a genetic mutation, linked in laboratory testing to moderately reduced susceptibility to oseltamivir. WHO does not change treatment recommendations.
8 Jan 2007		Indonesia confirms its 75 th human case, in a 14-year-old boy from West Jakarta.
9 Jan 2007		Indonesia confirms its 76 th human case, in a 37-year-old woman from Banten.
12 Jan 2007		Indonesia confirms its 77 th human case, in a 22-year-old woman from Banten.
13 Jan 2007	Japan reports H5N1 in poultry (first since March 2004).	

15 Jan 2007	Hong Kong reports H5N1 in dead wild birds (first since January 2006).	Indonesia confirms its 78 th human case, in a 27-year-old woman from South Jakarta and its 79 th human case, in a 18-year-old boy from Banten (son of the 76 th case).
16 Jan 2007	Thailand reports H5N1 in poultry during routine intensive surveillance (first since July 2006). Vaccination remains prohibited.	
17 Jan 2007	Viet Nam reports continued H5N1 infection in farmed and village poultry	
22 Jan 2007		Egypt confirms its 19 th human case, in a 27-year-old woman from Beni Sweif.
22 Jan 2007		Indonesia confirms its 80 th human case, in a 32-year-old woman from West Java.
24 Jan 2007	Hungary reports H5N1 in poultry (first since June 2006).	
25 Jan 2007		Indonesia confirms its 81 st human case, in a 6-year-old girl from Central Java.
26 Jan 2007	Russia reports H5N1 in poultry (first report since July 2006).	
27 Jan 2007	The United Kingdom reports H5N1 on a commercial turkey farm (first ever report in poultry, reported in wild birds in April 2006). Only a single outbreak occurs.	
28 Jan 2007	In an effort to curb virus spread, Indonesia institutes a poultry ban for the entire island of Java, and bans backyard poultry in 9 provinces.	
31 Jan 2007		Nigeria confirms its first human case, in a 22-year-old woman from Lagos.
1 Feb 2007	Pakistan reports H5N1 in poultry (first since July 2006).	
6 Feb 2007		Egypt confirms its 20 th human case, in a 17-year-old girl from Fayoum.
9 Feb 2007		<i>Research</i> ²³ The second WHO analysis of epidemiological data on WHO-confirmed human cases of avian influenza A (H5N1) infection, 25 November 2003 – 24 November 2006 is published by WHO.
9 Feb 2007	Turkey reports H5N1 in backyard poultry (first report since April 2006).	
15 Feb 2007		Egypt confirms its 21 st human case, in a 37-year-old woman from Fayoum.
19 Feb 2007		Egypt confirms its 22 nd human case, in a 5-year-old boy from Sharkia.
20 Feb 2007	Ongoing H5N1 outbreaks in poultry in several states of Nigeria are reported by FAO. ²⁴	
19 Feb 2007	Lao PDR reports H5N1 in poultry (first reported since July 2006).	
22 Feb 2007	Afghanistan reports H5N1 in backyard poultry and farms (first report since March 2006).	

26 Feb 2007	Kuwait reports H5N1 in poultry in backyards, on farms, and in a zoo (first report in birds since November 2005. First ever report in poultry).	Lao PDR confirms its first human case, in a 15-year-old girl from Vientiane.
28 Feb 2007	Myanmar reports H5N1 in poultry (first report since April 2006).	Egypt confirms its 23 rd human case, in a 4-year-old girl from Dakahlea. China confirms its 23 rd human case, in a 44-year-old woman from Fujian.
6 Mar 2007	China reports H5N1 in poultry (first report since September 2006).	
12 Mar 2007		Egypt confirms its 24 th human case, in a 4-year-old boy from Dakahlea.
16 Mar 2007		Lao PDR confirms its second human case, in a 42-year-old woman from Vientiane Province.
19 Mar 2007		Egypt confirms its 25 th human case, in a 10-year-old girl from Aswan.
20 Mar 2007		Egypt confirms its 26 th human case, in a 2-year-old boy from Aswan. China confirms avian influenza H9N2 infection in a 9-month-old girl with mild signs of disease.
26 Mar 2007		Egypt confirms its 27 th human case, in a 3-year-old girl from Aswan. No epidemiological link is evident among the three recent cases from Aswan.
27 Mar 2007		During high level talks in Jakarta, Indonesia announces that it will resume sharing H5N1 AI virus with the international community.
28 Mar 2007		Egypt confirms its 28 th human case, in a 6-year-old girl from Qena, and its 29 th human case, in a 5-year-old boy from Menia.
29 Mar 2007		China confirms its 24 th human case, in a 16-year-old boy from Anhui.
30 Mar 2007	Bangladesh reports H5N1 in poultry (first ever in Bangladesh).	
2 Apr 2007	Saudi Arabia reports H5N1 in poultry (first ever in Saudi Arabia)	Egypt confirms its 30 th human case, in a 4-year-old boy from Qena (brother of the 28 th case), its 31 st human case, in a 7-year-old boy from Sohag, and its 32 nd human case, in a 4-year-old girl from Qalyoubia. According to the Ministry of Health in Indonesia, cases of H5N1 infection in humans continue to occur.
10 Apr 2007		Cambodia confirms its 7 th human case, in a 13-year-old girl from Kampong Cham (first human case since March 2006). Egypt confirms its 33 rd human case, in a 2-year-old girl from Menia and its 34 th human case in a 15-year-old girl from Cairo.
12 Apr 2007	Cambodia reports H5N1 in village poultry (first report in poultry since August 2006).	
3 May 2007	Ghana reports H5N1 in poultry (first ever in Ghana).	
16 May 2007		WHO retrospectively confirms 15 human cases and 13 deaths in Indonesia .

		bringing the total confirmed human cases to 96, with 76 deaths. Cases had onset dates between 25 Jan and 3 May 2007, and had been initially confirmed by the Indonesian Ministry of Health.
23 May 2007		A resolution on international sharing of influenza viruses is reached at the WHO World Health Assembly in Geneva.
24 May 2007	Viet Nam reports multiple outbreaks in unvaccinated poultry (primarily ducks) from several provinces throughout the country. Bangladesh reports multiple outbreaks in poultry from additional provinces throughout the country.	Indonesia confirms its 97th human case, in a 5-year-old girl from Central Java.
25 May 2007		The United Kingdom Health Protection Agency reports at least 4 human infections with low pathogenic avian influenza H7N2. The cases are associated with reported H7N2 infections in poultry.
30 May 2007		China confirms its 25th human case, in a 19-year-old soldier stationed in Fujian province.
31 May 2007		Indonesia confirms its 98th human case, in a 45-year-old man from Central Java.
2 Jun 2007	Malaysia reports its first outbreak in poultry since March, 2006 (in village chickens).	
6 Jun 2007		Indonesia confirms its 99th human case, in a 16- year-old girl from Central Java.
11 June 2007		Egypt confirms its 35th human case, in a 10-year-old girl from Qena.
12 Jun 2007		Egypt confirms its 36th human case, in a 4-year-old girl from Qena (no epidemiological link between these two most recent Egyptian cases).
15 Jun 2007		Indonesia confirms its 100th human case, in a 27- year-old man from Riau.
22 Jun 2007	Czech Republic reports its first outbreak ever in poultry (in commercial turkeys). Togo reports its first outbreak ever in poultry (in commercial chickens).	
25 June 2007		Egypt confirms its 37th human case, in a 4-year-old boy from Qena. Indonesia confirms its 101st human case, in a 3- year-old girl from Riau.
26 Jun 2007	Germany reports H5N1 in wild birds found dead (first reports since detected in commercial poultry in April 2006).	
29 Jun 2007	Czech Republic reports H5N1 in a dead mute swan (first in wild birds since May 2006).	Viet Nam confirms its first human cases since November, 2005, in a 29-year-old man from Vinh Phuc and a 19-year-old man from Thai Nguyen. Both men became ill in May, but no epidemiological link between these two cases has been identified. There have been 95 human cases in Viet Nam since 2003.
5 Jul 2007	France reports H5N1 in wild swans found dead (first report since detected in	

	commercial turkeys in February 2006).	
6 Jul 2007	Germany reports H5N1 in a dead domestic goose	
11 Jul 2007		Indonesia confirms its 102nd human case, in a 6- year-old girl from Banten.
15 Jul 2007	Bangladesh Ministry of Agriculture reports continued H5N1 outbreaks in commercial and backyard poultry.	
25 Jul 2007		Egypt confirms its 38th human case, in a 25- year-old woman from Damietta.
26 Jul 2007	India reports H5N1 in backyard poultry (first report since April 2006).	

References

1. Songserm, T et al. Avian Influenza H5N1 in Naturally Infected Domestic Cat. *Emerging Infectious Diseases*. www.cdc.gov/eid Vol. 12, No. 4, Apr 2006.
2. Hien TT et al. Avian influenza A (H5N1) in 10 patients in Vietnam. *N Engl J Med* 2004; 350:1179–88.
3. Li KS et al. Genesis of a highly pathogenic and potentially pandemic influenza virus in eastern Asia. *Nature* 2004; 430: 209–213.
4. Chen H et al. The evolution of H5N1 influenza viruses in ducks in southern China. *Proc Natl Acad Sci USA* 2004; 101: 10452–57.
5. Apisarnthanarak A et al. Atypical avian influenza (H5N1). *Emerg Infect Dis* 2004; 10: 1321–24.
6. Verbal report at WHO international consultation.
7. Kuiken T et al. Avian H5N1 influenza in cats. Published online by Science: www.sciencemag.org/cgi/content/abstract/1102287
8. Issued (prior to publication) on WHO website: Avian influenza – situation in Asia: altered role of domestic ducks, 29 October 2004; available online at: http://www.who.int/csr/don/2004_10_29/en/index.html
9. Ungchusak K et al. Probable person-to-person transmission of avian influenza A (H5N1). *N Engl J Med* 2005; 352:4 333–40.
10. De Jong M et al. Fatal avian influenza A (H5N1) in a child presenting with diarrhea followed by coma. *N Engl J Med* 2005; 352:7 686–91.
11. Liu J et al. Highly pathogenic H5N1 influenza virus infection in migratory birds. *ScienceExpress* 2005. Published online at: www.sciencemag.org/cgi/contents/abstract/1115273
12. Chen H et al. H5N1 virus outbreak in migratory waterfowl. *Nature* 2005; 436: 191–92.
13. Writing Committee of the World Health Organization (WHO) Consultation on Human Influenza A/H5. *N Engl J Med* 2005; 353:13 54–65.
14. World Health Organization Global Influenza Program Surveillance Network. *Emerg Infect Dis* 2005; 11: 1515–21.
15. Taubenberger JK et al. Characterization of the 1918 influenza virus polymerase genes. *Nature* 2005; 437: 889–93.
16. Tumpey TM et al. Characterization of the reconstructed 1918 Spanish influenza pandemic virus. *Science* 2005; 310: 77–80.
17. Yingst S., et al., Qinghai-like H5N1 from Domestic Cats, Northern Iraq. *Letter, Emerging Infectious Diseases* 2006, 12(8):1295
18. Chen H et al. Establishment of multiple sublineages of H5N1 influenza virus in Asia: implications for pandemic control. *Proc Natl Acad Sci USA* 2006; 103: 2845–2850.
19. Shinya K et al. Influenza virus receptors in the human airway. *Nature* 2006; 440: 435–36.
20. van Riel D et al. H5N1 virus attachment to lower respiratory tract. *ScienceExpress* 23 Mar 2006. Published online at: <http://www.sciencemag.org/cgi/content/abstract/1125548>
21. World Health Organization. Epidemiology of WHO-confirmed human cases of avian influenza A(H5N1) infection. *Weekly Epidemiological Record*, 2006, 81:249–260
22. Smith et al. Emergence and predominance of an H5N1 influenza variant in China. *Proc Natl Acad Sci U S A*. 2006 Nov 7;103(45):16936-41. Epub 2006 Oct 30
23. World Health Organization. Update: WHO-confirmed human cases of avian influenza A(H5N1) infection, 25 November 2003– 24 November 2006. *Weekly Epidemiological Record*, 2007, 82:41–48.
24. FAOAIDE News. Situation Update 45, 20 Feb 2007. http://www.fao.org/docs/eims/upload//224260/AIDENews_mar07_no45.pdf.