UPDATE ON HUMAN CASES OF AVIAN INFLUENZA A (H5N1)
(10 March 2006)

Year 2006

March

On 9 March, Germany reported to WHO H5N1 infection in a second mammalian species, the stone marten. This finding marks the first documented infection of this species with an avian influenza virus. The marten was found alive, but showing signs of severe illness. The animal was euthanized and analysed. The ill animal was found in the same affected area of the island, as three dead domestic cats. There is no present evidence that these animals play a role in the transmission cycle of H5N1 viruses.

On 9 March, the WHO announced that in Nigeria infection had spread throughout the country; to date outbreaks have been detected in 130 farms in 11 out of 37 states (Kaduna, Kano, Plateau, Katsina, Bauchi, Yobe, Nasarawa, Abuja, Anambra, Benue and Rivers), situated in the North, Centre and South of the country. To date, more than 450,000 birds have been euthanized and farm workers have begun to be paid for economic losses. No human cases were detected, although they are actively traced by the WHO and the CDC. No human cases were found in Magaria or in Niger, where poultry strains had been previously notified.

On 8 March 2006, the Ministry of Health in China reported the death of a 9-year-old girl in Zhejiang province that was notified on 27 February.

On 6 March, the Minister of Health in China has confirmed a further case of infection by H5N1 in the country. It is a 32-year-old unemployed man of Guanadong province, who developed symptoms on 22 February and died on 2 March. No outbreaks in poultry have been notified in this province since 2004. This finding marks the first case notified in Guandong province.

On 1 March 2006, collaborative laboratory of the WHO in United Kingdom has confirmed H5N1 was the first cause of death of a 39-year-old Iraqi man, who had previously notified the Minister of Health in the country. To date bird flu outbreaks caused by H5 virus in poultry have been notified in Sulaymaniyah and Missan provinces. It is believed both outbreaks began in mid-January.

February

On 28 February 2006, German authorities have announced detection of H5N1 avian influenza in a domestic cat. The cat was found dead over the weekend on the northern island of Ruegen. Since mid-February, more than 100 wild birds have died on the island, and tests have confirmed H5N1 infection in several. There is no present evidence that

domestic cats play a role in the transmission cycle of H5N1 viruses. To date, no human case has been linked to exposure to a diseased cat. No outbreaks in domestic cats have been reported. In all cases in which anecdotal reports of H5N1 infection in domestic cats eating raw infected poultry was considered the most likely source of infection for the cats.

On 28 February 2006 the WHO reported that avian influenza H5N1 has been confirmed in poultry in Niger. Niger is, therefore, the second country in sub-Saharan Africa to report the presence of the virus. Deaths in chickens and ducks were reported in districts near the Nigerian border during February. On 27 February 2006 the presence of the virus was confirmed in samples of dead ducks in Magaria and Dan Barde. To date, no human cases have been notified for possible H5N1 infection in Niger.

On 27 February 2006 the Ministry of Health in Indonesia has confirmed an additional case of human infection with the H5N1 avian influenza virus. The case, which was fatal, occurred in a 27-year-old woman from West Java Province. She developed symptoms on 13 February and died on 20 February. Chicken deaths in the woman's neighbourhood four days prior to her onset of symptoms had been reported.

On 27 February 2006, the Ministry of Health in China has confirmed an additional case of human infection with H5N1 avian influenza virus. Both patients are in a critical condition. The first patient is a 9-year-old girl from the eastern province of Zhejiang. She developed symptoms on 10 February. Symptom onset followed a visit to relatives in the adjacent province of Anhui. The second patient is a 26-year-old female farmer from Anhui province. She developed symptoms on 11 February following contact with diseased poultry. Local agricultural officials have reported isolation of the H5N1 virus in samples from affected poultry in her neighbourhood.

Rapid geographical spread of the virus: A total of 13 countries that have reported their first cases of H5N1 infection in birds since the beginning of February. The 13 countries, listed in order of reporting, are Iraq, Nigeria, Azerbaijan, Bulgaria, Greece, Italy, Slovenia, Iran, Austria, Germany, Egypt, India and France.

On 20 February, Malaysia reported a fresh outbreak in poultry after having been considered free of the disease for more than a year.

The situation in these recently affected countries varies greatly. Most European countries with good veterinary surveillance have detected the virus in a small number of wild birds only, with no evidence to date of spread to domestic birds. In Azerbaijan, detection of the virus has coincided with die-offs of domestic birds. In Egypt, outbreaks in domestic poultry have now been confirmed in 10 governorates; deaths have also been reported in exotic zoo birds. In Iraq, presence of the virus in birds was found only after the country confirmed its first human case. In Nigeria, as in India, the first cases were detected in large commercial farms, where the disease is highly visible and outbreaks are difficult to miss.

Apart from Iraq, none of the countries newly affected during February has reported human cases. Iraq has reported two human cases, both of which were fatal; samples from several other patients are currently undergoing tests.

For human health, experience elsewhere over the past two years has shown that the greatest risk of cases arises when the virus becomes established in small backyard flocks, which allow continuing opportunities for close human contact, exposures, and infections to occur.

All available evidence indicates that the virus does not spread easily from poultry to humans. To date, very few cases have been detected in poultry workers, cullers, or veterinarians. Almost all cases have been linked to close contact to diseased household flocks, often during slaughtering, defeathering, butchering, and preparation of poultry for consumption. No cases have been linked to the consumption of properly cooked poultry meat or eggs.

On **20 February 2006**, the Ministry of Health in Indonesia has confirmed an additional case of human infection with H5N1 avian influenza virus. The case, which was fatal, occurred in a 23 year-old man from East Jakarta. He developed symptoms on 5 February and died on 10 February. This brings the total number of cases in Indonesia to 26, of which 19 were fatal. He was employed as an egg seller at a market.

On **17 February 2006** the WHO reported that the Ministry of Health in Iraq has confirmed the country's second case of human infection with the H5N1 avian influenza virus. The case, which was fatal, occurred in a 39 year-old man from the northern province of Sulaimaniyah. He developed symptoms on 18 January and died on 27 January. He provided care for a 15-year-old niece of his, who died on 17 January.

On **13 February 2006**, the Ministry of Health in Indonesia has confirmed an additional two cases of human infection with H5N1 avian influenza virus. Both cases were fatal. The first case occurred in a 22-year-old woman who developed symptoms on 25 January and died on 10 February. Her neighbours kept chickens. Samples from these chickens and from pet birds in a market near the woman's home are being tested by Indonesia's animal health authorities. The second case occurred in a 27-year-old woman who developed symptoms on 31 January and died on 10 February. Deaths of chickens in her neighbourhood were reported four days prior to symptom onset. The newly confirmed cases bring the total in Indonesia to 25. Of these, 18 were fatal.

On **13 February 2006** the WHO reported that the Ministry of Health in China has confirmed an additional case of human infection with H5N1 avian influenza virus. A 20 year-old female farmer from the south-central province of Hunan developed symptoms on the 27 January and was subsequently hospitalized with severe pneumonia and died on 4 January. Symptom onset followed the culling of poultry raised by her household. She died on 4 February. To date, China has reported 12 laboratory-confirmed cases. Of these, eight have been fatal. To date, human cases of avian influenza H5N1 have been notified in Hunan, Anhui, Guangxi, Liaoning, Jiangxi, Fujian, and Sichuan.

On **9 February 2006** the Ministry of Health in China has confirmed an additional case of human infection with H5N1 avian influenza virus. The case is a 26-year-old female farmer from the south-eastern province of Fujian. She developed symptoms on 10 January and was subsequently hospitalized with pneumonia. She remains under treatment in stable

condition. This case occurred in an area where no recent poultry outbreaks have been officially reported.

On **7 February 2006**, the Ministry of Health in Indonesia has confirmed an additional four cases of human infection with H5N1 avian influenza virus. The first case was a 22-year-old man from West Java who died on 26 January. He worked at a market where poultry was sold. Poultry deaths had been reported prior to his onset of symptoms. The second fatal case was a 15-year-old boy from West Java who died on 1 February. Deaths in chickens near his home were reported in the week prior to symptom onset. The third case is a nine-year old girl from the same area who was hospitalized on 19 January and has since recovered. She lived in a village neighbouring that of the two fatal cases in siblings confirmed on 23 January. The fourth case is a five-year-old boy from Lampung Province who developed symptoms in October of last year and has since fully recovered. The child is the brother of a previously confirmed case, a 20-year-old man who developed symptoms in late September and likewise fully recovered.

On **2 February 2006**, WHO laboratory confirmed Iraq's first reported case of human infection with the H5N1 avian influenza virus. Results of an additional two cases notified are to be confirmed. At present, an additional two people, showing symptoms suggestive of H5N1 infection, have been hospitalized for treatment in the same area. Chicken outbreaks are under investigation and poultry culling is under way in northern Iraq and large numbers of birds have already been destroyed. WHO-led teams are currently conducting or completing field assessments in nine countries in the area: Armenia, Azerbaijan, Egypt, Georgia, Iran, Lebanon, Moldova, Syria, and Ukraine.

January

On **30 January 2006** the Ministry of Health in Iraq has confirmed the country's first case of human infection with the H5N1 avian influenza virus. A 15 year-old girl died on the 17 January following a severe respiratory illness. Her symptoms were compatible with a diagnosis of H5N1 avian influenza. Preliminary laboratory confirmation was provided and diagnostic confirmation is to be provided by laboratory in the UK.

The girl's 39 year-old uncle, who cared for her during her illness, developed symptoms on the 24 January and died of a severe respiratory disease on the 27 January. Both patients resided in the town of Raniya near Sulaimaniyah in the northern part of the country, close to the border with Turkey. Poultry deaths were recently reported in their neighbourhood, but H5N1 avian influenza has not yet been confirmed in birds in any part of the country. Poultry samples have been sent for testing at an external laboratory. A history of exposure to diseased birds has been found for the girl. The uncle's source of infection is under investigation.

The Ministry of Health in Iraq has also reported an additional third case. The Ministry of Health has further informed WHO of a third human case of respiratory illness that is under investigation for possible H5N1 infection. The patient is a 54-year-old woman, from the same area, who was hospitalized on 18 January. Specimens are on their way to a WHO

collaborating laboratory in the United Kingdom for diagnostic confirmation and further analysis.

On **25 January 2006**, the Ministry of Health in China has confirmed the country's tenth case of human infection with the H5N1 avian influenza virus. The case occurred in a 29-year-old woman, who developed symptoms on 12 January, was hospitalised and died on 23 January. She lived in Sichuan province. The source of her infection is under investigation. This is the second human case reported this year in China, both from Sichuan Province. No outbreaks have been confirmed in these provinces.

Of the ten cases confirmed in China, seven have been fatal. The cases have occurred in 7 provinces and regions: Anhui, Guangxi, Liaoning, Jiangxi, Fujian, Hunan, and Sichuan. No poultry outbreaks have been officially reported in two of these provinces.

On **23 January 2006**, the Ministry of Health in Indonesia has confirmed an additional two cases of human infection with the H5N1 avian influenza virus. The first patient was a 13-year-old girl. She developed symptoms on 6 January, was hospitalized on 12 January, and died on 14 January. The second patient was her four-year-old brother. He developed symptoms on 8 January, was hospitalized on 14 January, and died on 17 January. Two other family members, a 14-year-old sister and the 43-year-old father, remain hospitalized with respiratory symptoms. Samples from these cases are being tested to determine whether they were also infected with the H5N1 avian influenza virus. A large poultry outbreak in the family's neighbourhood was found. Chickens kept by the family began to die three days before the first patient developed symptoms. All family members had close contact with the diseased and dead chickens.

On **19 January 2006**, the Ministry of Health in China has confirmed an additional case of human infection with the H5N1 avian influenza virus. The case occurred in a 35-year-old woman. She developed symptoms on 3 January, was hospitalized on 10 January with symptoms of fever and pneumonia, and died on 11 January. She lived in Sichuan province.

The newly confirmed case is the ninth in China. Of these cases, 6 have been fatal. To date, the cases have occurred in provinces of Hunan, Anhui, Guangxi, Liaoning, Jiangxi, Fujian, and Sichuan.

On **18 January 2006**, the WHO has informed that laboratory results of a centre in Ankara have confirmed an additional case of human infection with the H5N1 avian influenza virus in Turkey. The case is a 4-year-old boy from the district of Dogubayazit in Agri province in the eastern part of the country and is still hospitalized. The child developed symptoms on 5 January and was hospitalized on 13 January.

The newly confirmed case brings the total in Turkey to 21. Of these, 19 have occurred in children aged 4-18. Of these, 4 were fatal died; all four were residents of Dogubayazit. Specimens of these have been sent to WHO laboratory in the UK for confirmation. Cases confirmed by H5N1 virus in the table of cases will not be updated until results from this laboratory are not available.

In this country new outbreaks in birds have occurred. At present, 12 out of 81 provinces in the country, but 19 additional provinces are under investigation.

On **16 January 2006**, the WHO has informed of the laboratory results from the centre in Ankara have confirmed an additional two cases of human infection with the H5N1 avian influenza virus in Turkey. The first case is a 5-year-old boy from the district of Dogubayazit in Agri province, in the eastern part of the country and is still hospitalized. The other case is his 14-year-old sister, who died on 15 January from a respiratory disease, showing symptoms suggestive of H5N1 infection, and which has been confirmed by the Turkish laboratory. On 1 January poultry deaths were reported. The same day siblings scarified a bird for consumption. Three days after they developed symptoms and were hospitalized on 11 January.

On **13 January 2006**, the Ministry of Health in Indonesia has confirmed an additional case of infection by virus H5N1. The case occurred in a 29-year-old woman, from Jakarta. She developed symptoms on 31 December, was hospitalized on 2 January, and died on 11 January. Apparently, the woman had bought live chickens in a market during the days immediately prior to symptom onset. The newly confirmed case is the 17th in Indonesia and the 12th fatality.

On **13 January 2006**, Turkish laboratories have confirmed eighteen cases confirmed as H5 in Turkey, of which three belonging to the same family have died (of these, 4 have already been identified and confirmed as produced by H5N1 virus.

On **12 January 2006**, the WHO has confirmed an additional two cases of avian flu in humans in Turkey. The cases occurred in two children, aged 4 and 6, residents in Sanlurfa province. The newly confirmed case is the 9th in Turkish provinces of confirmed cases in humans. On the other hand, laboratory results of a 12-year-old girl, who died on 7 January and who was the sister of two children who also died as a consequence of the illness, have confirmed virus subtype H5 in samples analysed.

On **10 January 2006**, the WHO has informed on the existence of a new case in Turkey. The case is a 37 year-old woman from the province of Sivas. The newly confirmed is the fifteenth in the country.

Also on **10 January 2006**, the WHO confirmed the eighth case in China. The case is a 6-year-old boy who developed symptoms on 24 December and is presently hospitalised in stable condition. Of the 8 confirmed cases in China, 5 have now died.

On **9 January 2006**, the WHO has confirmed an additional ten cases of avian flu in humans in Turkey. With these, the total of confirmed cases rises up to 14 in this country. The majority of cases are children and all continue to be hospitalized. Of all cases confirmed, two have now died.

Three of ten cases (two brothers aged 5 and 2, and a 65-year-old man are from the same province of Ankara, an additional two (brothers) are of the same province of the first two

notified cases, and the remaining 5 belong to the provinces of Kastamonu, Corum and Samsun, provinces bordering the Black Sea.

On **7 January 2006**, the Ministry of Health in Turkey has confirmed an additional two cases of avian influenza in humans. Both cases are children, aged 5 and 8, who are presently hospitalised. On the other hand, the WHO has informed that the Turkish Minister has announced a third, presumably caused by H5N1 virus, in a 12-year-old girl, who is a sibling of the two children who died.

On **5 January 2006**, the WHO informed that the Ministry of Health in Turkey had confirmed the two first cases of avian influenza in humans. The first case, a 14-year-old boy, who was hospitalised on 1 January, died on the same day. The second case, a 15-year-old girl, who was a sibling of the first case, also died as a consequence of the disease.

HUMAN CASES OF AVIAN INFLUENZA A/(H5N1) CONFIRMED BY THE WHO

Country	2003		2004		2005		2006		Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
Cambodia	0	0	0	0	4	4	0	0	4	4
China	0	0	0	0	8	5	7	5	15	10
Indonesia	0	0	0	0	17	11	11	10	28	21
Iraq	0	0	0	0	0	0	2	2	2	2
Thailand	0	0	17	12	5	2	0	0	22	14
Turkey	0	0	0	0	0	0	12	4	12	4
Viet Nam	3	3	29	20	61	19	0	0	93	42
Total	3	3	46	32	95	41	32	21	176	97

*****At present, laboratory in the UK has confirmed 12 of 21 cases notified in Turkey. All deaths have been confirmed.

HEALTH ADVICE FOR TRAVELLERS GOING TO COUNTRIES AFFECTED BY H5N1 AVIAN INFLUENZA

WHO does not recommend travel restrictions to these areas. WHO continues to recommend that travellers to affected areas should avoid contact with live animal markets and poultry farms, and any free-ranging or caged poultry. Large amounts of the virus are known to be excreted in the droppings from infected birds. Populations in affected countries are advised to avoid contact with dead migratory birds or wild birds showing signs of disease.

Direct contact with infected poultry, or surfaces and objects contaminated by their droppings, is considered the main route of human infection. Exposure risk is considered highest during slaughter, defeathering, butchering, and preparation of poultry for cooking. There is no evidence that properly cooked poultry or poultry products can be a source of infection.

In accordance with the Spanish Ministry of Health recommendations, anti-flu vaccine is recommended to people going to areas affected by avian influenza in humans or having chicken outbreaks if they are going to have contact with live animals. This recommendation, one hand, seeks to avoid confusion between influenza caused by a virus contained in a vaccine and influenza caused by avian flu, on the other; reduce the chances of a possible co-infection by two viruses (human and avian) in the same subject.

In Spanish airports, signs and recommendations are going are to be found for those travellers going to countries experiencing outbreaks of highly pathogenic H5N1 avian influenza. This information is also given to travellers in cards issued in check-in points.

AVIAN INFLUENZA AND FOOD SAFETY

On 27 February, the World Health Organization reconfirms that, when poultry products are safely handled and properly cooked, humans are not at risk of acquiring H5N1 infection through food.

Although the H5N1 virus is highly infectious among poultry, it is not easily transmissible to humans. Since December 2003, this virus is known to have infected 173 people, of whom 93 have died. Not one of these cases has been linked to the consumption of properly cooked poultry or poultry products.

We must not forget poultry products are important sources of protein throughout the world.