Avian Influenza Outbreaks in Humans

Despite the rapid spread of avian influenza (H5N1) worldwide, all evidence to date indicates that the H5N1 virus does not spread easily from birds to infect humans. The risk remains highest in persons who reside in countries with widespread outbreaks in poultry, and who have had direct contact with infected poultry, or surfaces and objects contaminated by their droppings (e.g. persons exposed 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.

As the virus spreads, WHO continues to report increasing numbers of human avian influenza (H5N1) cases. In 2007, laboratory-confirmed human cases have been reported in Cambodia, China, Egypt, Indonesia, Lao People's Democratic Republic, Nigeria, and Viet Nam. The table below lists the current WHO count of laboratory confirmed human influenza A (H5N1) cases:

Updated January 3, 2008

Country	2003		2004		2005		2006		2007		Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
Azerbaijan	0	0	0	0	0	0	8	5	0	0	8	5
Cambodia	0	0	0	0	4	4	2	2	1	1	7	7
China	1	1	0	0	8	5	13	8	5	3	27	17
Djibouti	0	0	0	0	0	0	1	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	43	19
Indonesia	0	0	0	0	20	13	55	45	41	36	116	94
Iraq	0	0	0	0	0	0	3	2	0	0	3	2
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	2	2	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	1	1
Pakistan	0	0	0	0	0	0	0	0	1	1	1	1
Thailand	0	0	17	12	5	2	3	3	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	101	47
Total	4	4	46	32	98	43	115	79	85	58	348	216

Notes

- Overall case fatality rate of 62%
- WHO reports only laboratory-confirmed cases
- Total number of cases includes number of deaths
- All dates refer to onset of illness
- For more information please see WHO Avian Influenza webpage

Most cases of H5N1 infection in humans are thought to have occurred from direct contact with infected poultry. Therefore, travelers to affected areas are advised to avoid contact with live, well-appearing, sick, or dead poultry and any surfaces that may have been contaminated by poultry or their feces or secretions. Transmission of H5N1 viruses to two persons through consumption of uncooked duck blood may also have occurred in Vietnam in 2005. Therefore, consumption of uncooked poultry or poultry products, including blood, should be avoided. More detailed recommendations for travelers to affected countries can be found in the CDC Notice to Travelers about Avian Influenza A (H5N1)

H5N1 infections in humans can cause serious disease and death. Frequent clinical signs and symptoms include fever, shortness of breath, cough and diarrhea. These symptoms can progress rapidly to development of severe pneumonia and multi-organ failure. No vaccine to protect humans against H5N1 infection is currently available, but an inactivated human H5N1 vaccine is undergoing human clinical trials in the United States. The H5N1 viruses currently infecting birds and some humans in Asia are resistant to amantadine and rimantadine, two antiviral medications commonly used for influenza. The H5N1 viruses are susceptible to the antiviral medications oseltamavir and zanamavir, although the effectiveness of these drugs when used for treatment of H5N1 virus infection is unknown.

Reports of unusual clinical presentations and asymptomatic infections:

Unusual clinical presentations have been reported. One additional case of H5N1 infection dating back to February 2004 has been identified retrospectively in Vietnam. A four-year-old boy presented with symptoms of severe diarrhea, followed by seizures, coma and death. The patient's nine-year-old sister had died from a similar syndrome two weeks earlier. In both siblings, the clinical diagnosis was acute encephalitis with neither patient presenting with respiratory symptoms.

In addition, cases of asymptomatic H5N1 infection have been reported. These are not unexpected, and were observed when the virus first jumped to humans in Hong Kong in 1997. Undetected cases might imply that infections with H5N1 influenza may be more common than previously thought, suggesting that the overall case fatality rate may not be as high as previously suggested. It also raises the question of whether mild and/or asymptomatic cases of avian flu allow the virus more opportunities to mix, or "re-assort," with human-adapted flu viruses. This genetic mixing increases the likelihood of generating a virus that is able to efficiently spread from person to person. As more data become available, the WHO will be assessing the number of asymptomatic and undetected avian influenza cases in Asia, and their implications for triggering a flu pandemic.

Isolated clusters of human-to-human transmission:

Almost all human avian influenza cases appear to have occurred because of bird-to-human transmission. However, isolated clusters of probable limited human-to-human transmission of influenza A (H5N1) virus have also been observed. For example, one instance of probable person-to-person transmission associated with close contact between an ill child and her mother is thought to have occurred in Thailand in September 2004. So far, no sustained human-to-human transmission of influenza A (H5N1) has been identified, and no influenza A (H5N1) viruses containing both human and avian influenza virus genes have been detected.