

# Pandemic Postings

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**Prepared by:** [Dr Craig Thornley](#); Dr Sheryl Jury  
**Website:** [www.arphs.govt.nz](http://www.arphs.govt.nz) (+ follow [link](#))

## International

**Thailand: situation update** [WHO, 07/08/06](#). A further fatality due to H5N1 avian influenza has occurred in Thailand. The case occurred in a 27-year-old man from Uthai Thani province (the last reported Thai case was in Phichit province: see [map](#)). The man died 10 days after onset of symptoms, and had been exposed to household chickens that began dying one week prior to onset of his symptoms.

Outbreaks of H5N1 avian influenza in poultry in Thailand have been also reported in Phichit province and Nakhon Panom province, on the border with Laos. According to an article in [Eurosurveillance 03/08/06](#), authorities in Thailand have previously been successful in controlling H5N1 in birds using conventional methods without immunisation, and should be able to control the current outbreaks. However, there remains a constant risk of outbreak reoccurrence due to the large numbers of immunologically naïve, non-biosecure poultry populations outside commercial farms, and the movement and mixing of fighting cocks. There is also the additional risk from wild birds mixing with the free-grazing birds.

**Indonesia: situation update.** [WHO, 08/08/06](#) and [WHO, 09/08/06](#). Two further deaths due to H5N1 avian influenza have occurred in Indonesia since the last issue of Pandemic Postings. (The surveillance table in this issue lists three deaths: the third of these was mentioned in the last issue.) The first case, a 16-year-old male from West Java province who died 7 August, had been exposed to sick and dying household poultry subsequently found to have been infected with the H5 virus subtype. The second case, a 17-year-old female from Jakarta province who died 8 August, kept pet pigeons and was exposed to household poultry: as yet, no test results of these birds are available. According to [CIDRAP \(09/08/06\)](#), human H5N1 avian influenza cases in Indonesia are being more rapidly confirmed by WHO because the agency does not now require further testing in laboratories outside Indonesia.

**Indonesia, FAO and OIE to publish H5N1 genetic data** [CIDRAP, 03/08/06](#). The Indonesian government, the United Nations Food and Agriculture Organization (FAO) and the World Organization for Animal Health (OIE) have pledged to make genetic data on avian influenza viruses freely available. This should enable better tracking of mutations in the virus, which should help in the development of vaccines to use in case the H5N1 virus evolves into a strain capable of causing a human pandemic. Indonesia's health minister has said that the country will deposit avian flu virus data in GenBank, a public database of genetic sequences. Data from the recent family case cluster in Sumatra involving person-to-person transmission would be included.

**Reducing impact of the next influenza pandemic using household-based public health interventions** [Wu et al, PLoS Med 3\(9\): e361](#). Authors of this article estimate the expected reduction in primary attack rates for different household-based interventions using a mathematical model of influenza transmission within and between households. They find that, for an infection with average reproductive number ( $R_0$ ) of 1.8, measures such as household-based quarantine, isolation of cases outside the household and targeted prophylactic use of anti-virals could reduce the infection (symptomatic) attack rate from 74% (49%) to 40% (27%), even if only 50% comply with measures.

## Current global avian influenza activity<sup>1</sup>

Confirmed human cases of avian influenza A/(H5N1), 15 Jul - 09 Aug 2006,<sup>1</sup> and outbreaks of highly-pathogenic avian influenza H5N1 in poultry, 20 Jul - 02 Aug 2006,<sup>2</sup> by country. The complete list of human cases and poultry outbreaks to date can be found on the [ARPHS website](#).

	Human <sup>1</sup>		Poultry <sup>2</sup>
	cases	deaths	outbreaks
China	1	1	1
Cote d'Ivoire	-	-	1
Indonesia	3	3	-
Thailand	2	2	2
<b>Total</b>	<b>6</b>	<b>6</b>	<b>4</b>

Notes:

1 As reported to [World Health Organization](#)

2 As reported to [World Organisation for Animal Health \(OIE\)](#)

## Background

**Control of avian influenza in poultry** [Capua & Marangon, Emerg Infect Dis \[serial on the internet\] 2006;Sep \[cited 14/08/06\]](#).

Article reviewing available control methods for avian influenza infections in poultry, from stamping out to prevention through emergency and prophylactic vaccination.

**Lack of transmission of synthetic avian-human reassortment influenza virus in ferret model** [Maines et al, Proc Nat Acad Sci 2006;103:12121-6](#). In an experiment designed to mimic events that could launch an influenza pandemic, a synthetic influenza virus made by combining a 1997 strain of H5N1 avian influenza virus with a human influenza virus turned out to be no more contagious in an animal model than the natural H5N1 virus. First, US Centers for Disease Control (CDC) investigators found that human H3N2 viruses spread efficiently among ferrets, whereas avian H5N1 viruses did not, showing that the ferrets were a good model for human infection. Second, viable reassortment viruses containing H5N1 surface protein genes and H3N2 internal genes were synthesised. Third, ferrets were infected with the reassortment viruses. Resulting illnesses were less severe than those due to the original H5N1 viruses, and the hybrid virus was not transmitted between ferrets. Efficiency of transmission did not improve even after up to five generations of deliberate serial infection (passages). "These data do not mean that H5N1 cannot convert to be transmissible from person to person; instead, they mean it's probably not a simple process and more than simple genetic exchanges are necessary," CDC director Dr Julie Gerberding said at the release of the study findings. [Summary and additional material edited from [CIDRAP, 31/07/06](#)]

**First human H5N1 case occurred in China in 2003** [WHO, 08/08/06](#). Chinese researchers have retrospectively identified a human case of H5N1 avian influenza dating back to November 2003. This case, a 24-year-old man serving with the Chinese military in Beijing, died with severe respiratory disease 8 days after onset of symptoms. He was initially suspected to have been infected with the SARS virus, but tests were returned negative and the cause of death remained undetermined. Stored specimens were subsequently tested for H5N1, and the virus was isolated (reported in [NEJM, 22/06/06](#)). The case has been verified independently by the WHO, and has now been confirmed as the first case in the current H5N1 avian influenza outbreak (previously considered to have occurred in Vietnam in December 2003).