



AVIAN FLU SPECIAL REPORT: **CAN ASIA PREVENT A PANDEMIC?** **JANUARY 2004**

Special Report

Additional copies of this report are available from iJET Customer Service at customerservice@ijet.com or by phone at 1-877-606-4538.

Please note that this report is copyrighted by iJET. iJET, Travel Intelligence, and Worldcue are registered trademarks of iJET Travel Intelligence, Inc. All rights reserved.



Avian Influenza – A Growing Concern

Prepared by iJET Travel Risk Management

Authorities are reporting large outbreaks of avian influenza among birds in a rapidly increasing number of Asian countries. So far, the disease has killed at least 10 people – eight in Vietnam and two in Thailand – and health officials worldwide worry that a human pandemic is possible. To date, all victims have acquired the disease only through close contact with birds – not via person-to-person transmission – but the World Health Organization has labeled the outbreak a “serious concern” to public health and has launched several initiatives to avert a human pandemic.

Basis for Concern

Pandemics are rare, but do occur: The “Spanish flu” pandemic in 1918-1919 killed up to 50 million people worldwide; the “Asian flu” of 1957-58 and “Hong Kong flu” of 1968-69 combined killed an estimated 1.5 million people worldwide.

To cause a pandemic, a virus must subvert the human immune system and spread efficiently from person to person. Of three types of influenza viruses, only influenza A viruses are believed to be able to cause pandemics. The virus causing the avian flu outbreaks is an influenza A. For the current outbreaks of avian flu to become a pandemic, the virus must change so significantly that the population has little or no immunity to the virus. (Wild birds are the primary reservoir for influenza A viruses.)

The influenza A virus involved in the current outbreak is a new virus for which the general population has no natural immunity, and the virus can be transmitted directly from birds to humans. If it acquires the ability to be efficiently transmitted from person-to-person, a pandemic may occur.

Why this Virus is Dangerous

Worrisome characteristics of the virus now impacting Asia include its ability to cause severe disease in humans, as evidenced by the 10 confirmed human deaths from avian flu since Jan. 13. Also, this virus could change enough to acquire characteristics that would increase the probability of human-to-human transmission. The virus can change by two methods:

- In mutation, the virus makes “mistakes” as it replicates. These mistakes can allow the virus to evade human immune defenses and are the reason a new influenza vaccine must be prepared each year for people.
- In reassortment, viruses exchange genetic material with each other, which is a very efficient method for a virus to acquire beneficial genes. Genetic reassortment can occur when two viruses simultaneously infect an animal, referred to as a “mixing vessel.” Humans and pigs can harbor both avian and human influenza viruses and may serve as mixing vessels, thereby giving the avian influenza virus an opportunity to acquire the genes necessary for human-to-human transmission.

It is unclear if the avian virus will change enough genetically to cause a pandemic, but the likelihood increases with time and expansion of the outbreak among birds. The geographic extent of this outbreak is unprecedented, and may expand further because:

- The virus is extremely contagious among birds, and infected birds excrete the virus through respiratory secretions and feces for many days

- The virus is very stable in the environment, and may survive for 30 days in freezing temperatures. It may survive in frozen material indefinitely.
- Under-developed countries have been reluctant to admit that avian influenza infected their poultry. As a result, the virus has become established over a large area, and will now be extremely difficult to contain.
- Under-developed countries do not have the resources to properly destroy flocks of infected poultry in the numbers and manner necessary to quickly contain the outbreak.
- Wild migratory birds may be spreading the infection over large areas.

Optimal Conditions for a Pandemic

Because the number of birds and people exposed to the virus is rapidly increasing, the probability that an influenza virus will emerge that is capable of starting a pandemic is rising. When the virus has many opportunities to infect mixing vessels (in this case, pigs and humans), the likelihood increases that it will genetically transform enough to efficiently infect humans and transmit person-to-person. Conditions in Asia are giving the virus many such opportunities:

- Markets and Asian agricultural practices put pigs, poultry and humans in close proximity.
- Influenza season is beginning in Asia so humans and pigs are more likely to be infected with human influenza virus. Officials at the WHO reported on Jan. 26 that the H3N2 influenza virus causing influenza outbreaks in the U.S. and Europe is moving toward Asia.
- Many under-developed countries lack the resources to protect people who are culling infected chickens. WHO experts estimate that thousands of people involved in the culling of birds in Vietnam were exposed to the avian influenza virus.
- The surveillance systems for avian diseases are poor in developing countries, so large numbers of birds may be affected (and humans exposed) before authorities are notified. Reporting delays allow the virus to establish itself and make containment more difficult.

Risks to World Health

The current risk to international travelers is very low, but that could change quickly. Like SARS, avian flu could travel around the world rapidly. An avian influenza outbreak could be worse than a SARS outbreak because:

- The mortality associated with H5N1 viruses may be several times greater than that associated with SARS. In the two previous human H5N1 outbreaks, the mortality rate was 33 percent in 1997 (six of 18 infected), and at least 50 percent in 2003 (one of two confirmed infected persons, plus one additional suspected case who died). The mortality rate associated with SARS was less than 10 percent.
- Unlike SARS, influenza viruses are generally shed before the onset of symptoms, meaning people could unwittingly transmit the infection before realizing they are sick.
- Influenza viruses typically are more contagious than SARS.

WHO Response

To prevent an avian flu epidemic in humans, the WHO has enhanced surveillance for both bird and human cases of the disease, and ramped up research support and development of an influenza strain that could be used to produce a vaccine. The time needed for vaccine production could be from several months to more than a year. Like all influenza viruses, this one will change quickly necessitating constant monitoring and new vaccines. (A vaccine candidate was created and tested less than a year ago after a Hong Kong man died from H5N1 infection. The virus has mutated enough since then to make that vaccine ineffective.)

WHO authorities are imploring officials in all countries to quickly report any suspected avian influenza infections – in humans or birds. Authorities warn that unprecedented international cooperation is needed to avert a pandemic, and even that may not be enough.

Traveler Advice

- Avoid poultry farms and public markets with live chickens or ducks.
- Avoid contact with animal excrement at areas including farms, parks and golf courses.
- Avoid contact with any surfaces that appear contaminated with feces from animals.
- Consider carrying a supply of prescription anti-influenza medication (either oseltamivir or zanamivir) that is active against influenza A. These are active against human influenza A and may be active against the avian influenza A virus as well. Anti-influenza medication may be used for treatment if given within 48 hours of the onset of symptoms, or prophylactically, if contact is anticipated with persons potentially ill with influenza.
- Get an influenza vaccine. Although the vaccine will not protect against avian influenza, it will protect against more common strains of influenza that are circulating.
- Eat only well-cooked meals, served hot. Heat destroys the virus and fully cooked chicken and eggs (not runny) should be safe.
- Try to eat in establishments with good food handling practices.
- Always practice good hand hygiene.

iJET will update this special report as conditions warrant. In our standing intelligence, available through our Worldcue™ services, we will also provide updated information on the status of outbreaks in each affected country and the threat to travelers.

About iJET Travel Risk Management



iJET® Travel Risk Management (www.ijet.com) provides real-time Travel Intelligence® and crisis management information through its patent pending Worldcue® technology platform for tracking, monitoring and communicating with travelers. iJET services are backed by regional and category specialists from the fields of intelligence, security, travel and health who staff an around-the-clock operations and response center in Annapolis, Md. Analysts continuously monitor more than 7,000 sources for more than 450 destinations worldwide to help travelers avoid or minimize risk and trip disruption. iJET's proprietary technology platform was awarded a Global Excellence Gold Award at the AIIM 2002 conference for its technology implementation. For additional information please contact info@ijet.com.