

# Update on Avian Influenza

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*As of mid October, the number of cases in Indonesia were 72 and the number of deaths were 55 with a case fatality rate of 76%. The avian virus is endemic now in almost all provinces in the Indonesian archipelago of 17,000 islands. It clearly shows how vulnerable humans are when they are in direct contact with their backyard poultry who become infected with the avian virus. If not treated immediately, the condition is fatal. This week the first human victim to suffer from brain inflammation (encephalitis) due to the avian virus is an adult woman and this has occurred in Indonesia.*

Data collected from human cases in Vietnam and Thailand since 2003 show that disease and mortality from H5N1 avian influenza tends to be more severe among children than adults. This is complicated by the fact that severe and fatal H5N1 infections in children and adolescents have been shown to occur in the absence of respiratory presentations or marked respiratory involvement. This represents an apparent change in the epidemiology of the H5N1 virus in humans subsequent to the 1997 outbreak in Hong Kong, where severe disease symptoms were seen less frequently among children than adults.

The apparent higher frequency of non-respiratory disease syndromes and symptoms among children and adolescents reported in recent literature on human H5N1 cases suggests that H5N1 infections in children are more likely to be confused with other more common diseases. Children are therefore more likely to be overlooked as possible bird flu cases when they are not associated with infected adults exhibiting classical severe acute respiratory collapse or 'cytokine storm' syndromes.

## Latest on antivirals

Instances of oseltamivir resistance in patients have been reported previously, but there has been no unequivocal confirmation of transmission of resistant virus from person to person.

Oseltamivir (Tamiflu®) and Zanamivir (Relenza®) inhibit the

activity of the viral neuraminidase, an enzyme that enables influenza virus to escape from an infected cell and spread to other cells. Several studies suggest that viral resistance to oseltamivir may be a greater problem than previously believed. For example, in epidemics of H3N2 influenza in Japan in 2002 and 2003 about 1/5 of children developed resistance by day 4 or later during treatment with oseltamivir, and about 1/4 of children who shed virus for 3 days or more had drug-resistant influenza viruses. The neuraminidase-resistant mutations isolated were found to be from 300 to 100 000 times more resistant to oseltamivir than oseltamivir-susceptible virus. These reports of the emergence of drug resistance make the development of new anti-influenza molecules a priority.

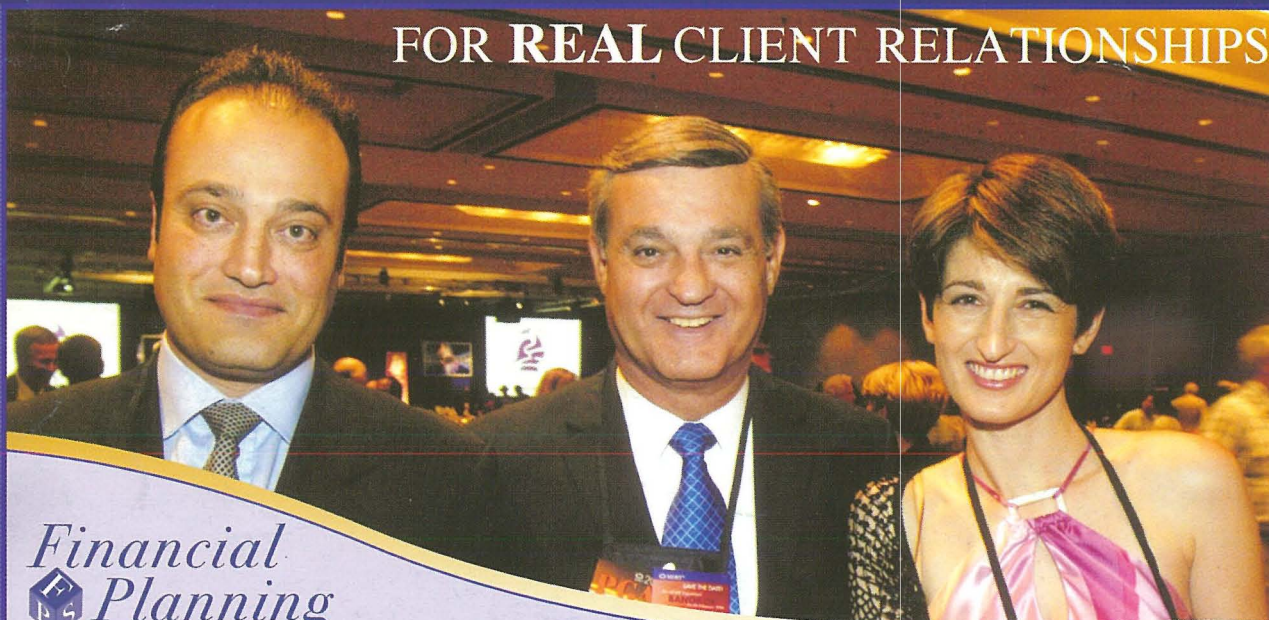
## Latest in animal infection caused by avian influenza virus

The Team of Veterinary Faculty at Udayana University has found evidence that the avian influenza virus has infected pigs in Bali.

Recent studies have revealed that cats can contract the avian influenza virus and that there is no evidence that migratory birds are responsible for the spread of the disease.

A study conducted by the Indonesian Environment Information Center in Yogyakarta found that stray cats had caught the H5N1 virus through contact with infected poultry at traditional markets. ☐

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