Can cats spread avian flu?

Felines are fast becoming a new focus for fears over avian flu, as cats infected with the deadly H5N1 strain are reported in Austria, Germany, Thailand and Indonesia. So could they spread the virus? The World Health Organization (WHO) has played down the danger based on current knowledge, but experts warn that the science is moving rapidly.

The Austrian authorities announced on 6 March that three domestic cats had tested positive for H5N1 in the southern town of Graz, the scene of a recent outbreak in birds. That followed detection of the virus in a dead cat on the northern island of Rügen, Germany, on 28 February, and news that 8 of 111 apparently healthy cats tested close to bird flu outbreaks in central Thailand carried antibodies to the virus (see *Nature* 439, 773; 2006).

"Cats infected with H5N1 may shed the virus extensively."

In a statement last week, the WHO maintained a careful but reassuring tone: "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."

That is all true, for now. In February 2004, the WHO reported the first outbreak in domestic cats. H5N1 was found in two of three cats tested from a household of 15 cats (of which 14 died) in Nakornpathom, Indonesia. At the time the WHO argued that cats are not naturally susceptible to flu, and that even if infected they would not shed large quantities of virus.

But with bird flu it may be different. Later in 2004, Albert Osterhaus's team from Erasmus University in Rotterdam showed experimentally that domestic cats do die from H5N1 and do transmit it to other cats (T. Kuiken *et al. Science* 306, 241; 2004). And in January this year, the virus was found not only in sputum but also in faeces of experimentally infected cats, suggesting that infected animals may shed the virus extensively (G. F. Rimmelzwaan *et al. Am. J. Pathol.* 168, 176–183; 2006).

It is unclear how these findings relate to cats in their natural environment. But in next month's issue of *Emerging Infectious Diseases*, Thai researchers describe a cat that died of H5N1 after eating a pigeon carcass. It showed similar pathology to cats experimentally infected with the virus.

Meanwhile, Andrew Jeremijenko, head of influenza surveillance at the US Naval Medical Research Unit 2 in Jakarta, Indonesia, detected H5N1 in a kitten he found near a poultry outbreak in Cipedang, West Java, and tested out of curiosity on 22 January. The virus from the kitten is closely related to recent H5N1 strains isolated from humans in Indonesia: it shares genetic changes found in human strains that are not present in samples from birds.

But scientists may just be learning what is already common knowledge among Indonesian villagers. Peter Roeder, a consultant for the UN Food and Agriculture Organization, says locals have an onomatopoeic name for bird flu "that sounds like 'plop', the sound of a chicken hitting the ground when it falls out of a tree. They also have a name for the cat form of avian flu — 'aaargh plop' — because cats make a screaming noise before they fall out of the tree." ■

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Feline fears: cats are testing positive for H5N1, but the significance of this remains unclear.