

Health Officials See Lull in Avian Influenza Reports

BY JONATHAN GARDNER
London Bureau

PARIS — The number of avian influenza outbreaks in animals, particularly wild animals, has hit a seasonal lull, and world animal health experts believe it may reflect the end of the spring bird migration season.

The World Health Organization reports that the number of human deaths resulting from infection with the H5N1 avian flu this year already has exceeded the total for 2005, and the total number of human infections has nearly matched the 95 of last year. Yet experts from Paris-based OIE, the World Organization for Animal Health, said they've received fewer notifications of outbreaks in animals in recent months.

"Fewer outbreaks are reported and, especially in Europe where we found most of the outbreaks, we assume that the animals that may be affected, that carry the virus, already moved to other places," Dr. Christianne Brusckke, project manager with OIE, said at an international conference on avian influenza in humans.

"In poultry we get fewer reports, but we know there are places like Indonesia where we know the virus is endemic, so it's very difficult to report every individual outbreak," she noted in an interview.

In addition, many of the countries where avian flu is endemic do not have the necessary scientific resources to chase every report of avian flu.

The role of wild birds in the spread of avian flu worldwide is unclear. Dr. Brusckke said less than 1% of wild birds in Asia and Africa have been found to be infected.

A scientific conference of OIE and the United Nations Food and Agriculture Organization in late spring concluded that the poultry trade, legal and illegal, is the chief means of the spread of the disease. But wild birds have been responsible for carrying the disease to regions far removed from poultry outbreaks and may serve as a permanent "reservoir" of the disease, it was concluded at that conference.

In her presentation, Dr. Brusckke said that OIE is in the final stages of setting up a "global early warning system" to help prevent further spread of the disease in animals. The international approach will focus on combating disease outbreaks in poultry. Among the necessary tools will be compensation for poultry farmers whose flocks are infected, giving them an incentive to report an outbreak.

"It's still an animal disease and should be controlled at the animal source," she said. "The risk of pandemic can be minimized if we act quickly to reduce the virus load in poultry."

Early Action Key to Halting Spread of Avian Flu From Human to Human

BY JONATHAN GARDNER
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PARIS — To avert a worldwide pandemic sparked by a mutation of an infectious avian influenza, public health officials will need to begin containment efforts before it has spread to 50 humans and treat new cases within 2 days of infection, according to an expert who has developed a mathematical simulation of a potential pandemic.

If a form of the H5N1 virus that is more infectious to humans spreads outside an initial disease cluster, there is little public health authorities can do to keep it out of their countries, said Simon Cauchemez, Ph.D., of the division of epidemiology, public health, and primary care at Imperial College, London.

"For containment, the only option is to act very quickly at the source. Obviously, once the pandemic is international, you can't try to stop it. You can only decrease its magnitude. There's an option for containment at the source, but it will be very difficult to implement," he said at the international conference on avian influenza in humans.

The simulation assumes any new pandemic strains would have the same transmission rates as earlier infections, including the 1918-1919 Spanish flu pandemic, he said.

Dr. Cauchemez's model assumes the outbreak originates in rural Southeast Asia, where in many cases, the H5N1 virus is endemic among birds. He noted that he designed the model to offer international public health authorities a way to contain the disease to a single geographic region, and if that fails, to help others control the size of the pandemic in

their countries once it reaches them.

For now, the disease has been restricted largely to poultry and wild birds.

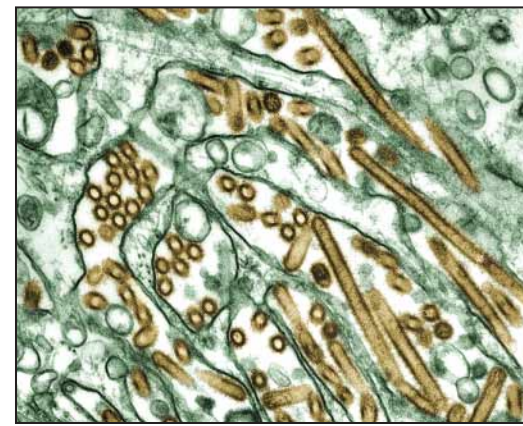
Most human infection results from close contact with birds. So far, 229 people have been infected, and 113 have died, according to data from the World Health Organization released July 4.

The World Health Organization has documented at least one case of human-to-human transmission. WHO officials do not believe that there was a mutation that made the virus any more transmissible between humans.

But it is feared that the H5N1 virus eventually will mutate into a human-transmissible form. Because it is different from the seasonal form of flu and because health officials cannot predict the genetic makeup of a human-transmissible form of H5N1, vaccinating the population to prevent the spread of the disease is unlikely until the virus has already begun passing from human to human.

In the first affected country, the time from the first human-to-human case to the peak of the outbreak would be between 80 and 120 days, Dr. Cauchemez said.

Beyond treating the influenza cases in an initial outbreak cluster, if an outbreak is to be contained, public health officials need to consider actions such as prophylaxis of the flu patients' households, as well as the population in an area surrounding the flu patients. Other options that might be much more unpopular in-



Colorized micrograph shows avian influenza A H5N1 viruses (gold) and MDCK cells (green).

CDC/C. GOLDSMITH, J. KATZ, AND S. ZAKI

clude closing schools to limit the spread of the virus and quarantining the entire region of an initial outbreak.

To contain an initial cluster of human-spread flu, officials must respond to an outbreak before it spreads to 50 people, new cases must be treated within the first 2 days, 3 million doses of antiviral medications must be available, and public health officials must act in multiple countries, Dr. Cauchemez said.

The simulation indicates that limiting the spread of disease once it enters a country will not be particularly effective, Dr. Cauchemez said. Once a country has an outbreak, the number of people infected with the flu is expected to increase by 10 times in a week or two, so "therefore if you succeeded in decreasing the number of cases 10-fold, you only buy 1 or 2 weeks," he said.

The only way to prevent avian flu from entering a country is to keep out 99% of those people traveling from areas already affected by the pandemic, Dr. Cauchemez said. "So travel restrictions must be very, very effective—draconian—to have any significant impact," he added.

Once avian flu enters a country, prophylaxis of a population near a disease cluster, closing schools and workplaces to limit the opportunity for the virus to spread, and pre-vaccinating children under age 16 would reduce the number of cases but not prevent the spread of the virus, Dr. Cauchemez said. ■

Pandemic Influenza Checklist

The Centers for Disease Control and Prevention has developed a tool to help staff at long-term care facilities evaluate and improve their preparedness for responding to pandemic influenza.

The tool, entitled "Long-Term Care and Other Residential Facilities Pandemic Influenza Checklist," is available online at www.pandemicflu.gov/plan/longtermcarechecklist.html.

Shortage of Meningococcal Vaccine Expected to Continue

BY MIRIAM E. TUCKER
Senior Writer

ATLANTA — The Centers for Disease Control and Prevention is monitoring the shortage of tetravalent meningococcal conjugate vaccine on a biweekly basis and will announce a return to routine recommendations when the supply and demand situation improves, Dr. Gregory S. Wallace, of the CDC, told the Advisory Com-

mittee on Immunization Practices at its June meeting.

Availability of Sanofi Pasteur's Menactra vaccine will likely be limited through the fall of 2006, according to a statement from the Food and Drug Administration.

Licensed in January 2005, Menactra is indicated for active immunization of individuals aged 11-55 years against invasive meningococcal disease cause by *Neisseria meningitidis* serogroups A, C, Y, and W-135.

In May 2005, the CDC published ACIP's recommendation for routine use of the vaccine in 11-12 year olds, for high school entry in those previously unvaccinated, and for high-risk groups including college freshmen living in dormitories (MMWR 2005;54:1-21).

Following the announcement of a supply problem earlier this year, the CDC published interim guidelines calling for the deferral of routine vaccination in

11-12 year olds, but for continuation of immunization in the other recommended groups.

The old tetravalent polysaccharide meningococcal vaccine (Menomune) is an acceptable alternative in certain high-risk situations, such as for a person who will be traveling to an area where meningococcal disease is widely prevalent. However, that vaccine also is in short supply. (MMWR 2006;55:567-8). ■