

## Avian Flu: A Global Pandemic Threatening?

The devastating outbreak of avian flu in eight East Asian countries has decimated poultry flocks, and caused the death of 14 people in Vietnam and 5 in Thailand. Millions of chickens have been killed across the area to stop the spread of the disease, wiping out the livelihood of small farmers and eliminating a major source of protein for the population.

So far in the outbreak, the human illnesses have occurred in people who have had direct contact with a sick bird or bird feces. There is no documented case of this strain of the avian flu, H5N1, combining genetically (“reassorting”) with a human flu strain to mutate into a more deadly, human-to-human transmissible form of the flu, for which people would have no natural immunity. But the danger of such a potential looms, as the avian flu spreads throughout populous rural areas, where chickens and people live in close proximity. An avian flu that genetically combined with a human flu is the likely origin for the great “Spanish flu” pandemic that followed World War I, in 1918-19, causing more than 20 million deaths and affecting more than 200 million people.

### Where Does the Virus Come From?

The reservoir of the H5N1 strain of the virus is in waterfowl and wild birds, which have some natural protection against the virus. But chickens do not have such protection, and when the virus takes hold among poultry—passed through contact at a live poultry market that includes ducks and geese, or through fecal matter, or the water supply—its kill rate is high and fast.

Once a chicken population is confirmed to be infected, the only way to contain the spread is to quickly quarantine

the area (to prevent transmission to other poultry farms) and kill entire flocks.

In 1983, in Pennsylvania, for example, another strain of avian virus, H5N2, infected chickens and turkeys and became extremely deadly for poultry. More than 17 million birds were destroyed in order to stop the epidemic, at a direct cost of \$60 million. There was no transmission to human beings. And this year in Delaware, an outbreak of another, milder strain of avian flu required a similar quick culling of thousands of birds and a quarantine of the surrounding area.

After the infected chickens are killed, the buildings and equipment used with them must be carefully disinfected and then left vacant for a couple of weeks. The area around the farm that is infected must be quarantined, because the virus can be easily transmitted on boots, vehicles, clothing, etc.

In Hong Kong, in 1997, avian flu H5N1 did jump the species barrier, infecting 18 persons and killing 6 of them. A potential pandemic was averted because of rapid action—within three days, about 1.5 million birds, all of Hong Kong’s poultry population, were destroyed.

Scientists are now working to develop a vaccine for human beings, using a process called reverse genetics, which substitutes harmless flu genes for the lethal H5N1 strain.

Although the often quoted scare story, via the World Health Organization, is that “experts agree that another influenza pandemic is inevitable and possibly imminent,” the very real danger now has to do with the physical economy. Fully-staffed and fully-funded public-health systems, vigilant disease monitoring and surveillance, and the kind of scrupulous public sanitation measures that require adequate budgets and well-housed populations, are the front-line fighting force to prevent any viral pandemic. To the extent that we lack these measures in the United States and elsewhere, we put ourselves and the world population at risk.—*Marjorie Mazel Hecht*

told, there would come to be 180,000 BSE cows reported in Britain over the following years, by the time the outbreak waned in about 1997. In the end, the British government destroyed 2 million cattle to try to stop the epidemic.

The Thatcher government only took measures to intervene after coming under fierce political pressure, domestically and from the European Union and other powers. For example, in 1989, a year in which 6,000 BSE cows were reported, the Thatcher Cabinet rejected the call by shadow Agriculture Minister Ron Davies to stop all exports of scrapie-infected sheep meal (about 3,000 tons a year at that time). Thatcher’s Minister Walker, when he left office in May 1990, joined the board of Dalgety PLC, to be the largest livestock

feed mix firm in the world by the mid-1990s.

Even in 1995, with over 20,000 BSE cows a year, British Prime Minister John Major tried to placate Parliament, “There is no scientific evidence that BSE can be transmitted to humans.”

Not so. During the 1990s, a variant form of the already-known human spongiform encephalopathy called Creutzfeldt-Jacob appeared in Britain; it was named vCJD. Since its first identification, over 160 cases have been reported in the United Kingdom, with one of the characteristics being incidence among younger, as well as older persons.

Among the measures finally taken in the course of the disease in Britain, were high-tech disposal of the infected