Lack of government preparation for flu pandemic

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Cases of the deadly H5N1 strain of bird flu virus have now been confirmed in poultry in Turkey, Romania and Greece. So far, the virus that is spreading from the Far East, through Russia and into Europe is infecting birds, though more than 100 people working in proximity to infected poultry have caught the flu and at least 63 have died over the last two years. Large-scale culling of domestic birds in Vietnam, China and other countries has failed to stop the spread. A World Health Organisation (WHO) spokesman said, "Never before in the history of this disease have so many countries been simultaneously affected, resulting in the loss of so many birds."

There is a very real danger that the virus could mutate into a form that is highly infectious to humans—public health experts are saying it is a case of "when" rather than "if." Professor John Oxford, a virologist at Queen Mary's School of Medicine, London, commenting in the *Guardian* on the cases of probable human-to-human transmission in Vietnam said, "Any virus needs live hosts if it is to be successfully promulgated around the world. To kill soon after infection would bring a rapid end to an epidemic. When H5N1 begins to kill fewer and infect more, as it is now, a pandemic is potentially close by."

Whether the virus will mutate into a flu that is as deadly for humans as the present strain is for birds is not known, but as half a million people worldwide die each year from illness associated with "ordinary" influenza—and far more would be hit with a new strain for which no resistance in the population has been built up—the lack of adequate preparation by governments for the present pandemic is criminal.

Dr. David Nabarro, the former head of the WHO's crisis operations, was seconded to the United Nations to coordinate world response to both the present bird flu and preparations for a human flu pandemic. Last month, he warned that the pandemic could happen at any time and kill between 5 million and 150 million people. WHO officials attempted to play down these figures—their official estimate of the number of people who could die is between 2 million and 7.4 million. However, Dr. Nabarro told the BBC that he stood by the figure, saying it was drawn from the work of epidemiologists around the world. "My reason for giving the higher figure is simply that I want to be sure that when this next flu pandemic does come along, that we are prepared for the worst as well as for the mildest," he said.

The only medical treatment presently available for the H5N1 strain is an antiviral drug that can be used against any strain of flu. With ordinary flu, if taken within 48 hours of infection, such drugs can reduce infectivity, and it is hoped that with H5N1 they would have a similar effect and save lives. About 30 governments—primarily the wealthiest nations—are now stockpiling the drug Tamiflu (oseltamivir). But it is clear that this is entirely inadequate to significantly reduce the impact of the pandemic.

Firstly, the disease needs to be combated internationally—it is expected to be highly infectious and spread around the world in days. Yet the WHO, the body that would be expected to coordinate measures against a pandemic, has no power to overrule national governments or big corporations and has only 3 million doses of Tamiflu that it is proposing to use on the first major outbreaks. According to public health expert Laurie Garrett, the WHO's core budget is only $400 million, of which only a small part is spent on flu. Consequently, this would mean some 6 billion people in developing countries going largely untreated when the pandemic hits.

Even the stocks of Tamiflu being bought up by the major governments are relatively small. The United States has only ordered enough to treat 20 million people, but so far only 2.3 million pills are actually in stock. This will only increase to 4.3 million this year, covering fewer than 2 percent of the population. Apart from President Bush's proposal to use the military to enforce quarantines, Health and Human Services Secretary Mike Leavitt's other approach is to blame the American population for not individually preparing for the pandemic. "People have not exercised adequate personal preparedness to last more than three or four days in their normal environment without going to the store," he said. "What's the responsibility of communities? What's the responsibility of families? Is it important that the mayor of a small town be thinking about a decision between Tamiflu and a swimming pool?"

But ordinary people do not have access to assured supplies of Tamiflu. Medical experts have warned that it should not be bought over the Internet because there is no guarantee of the drug's authenticity. Local authorities are hampered in their

ability to get hold of the drug because supplies are so limited. Leavitt's call for individual and local responsibility is simply a case of passing the buck.

The stockpiles that are building up in other countries will only treat some 28 million people, and even the United Kingdom's order of 14.6 million (for a quarter of the population) will take two years to complete. A report from the European Commission complained, "[O]rders from some countries have reserved all manufacturing capacity for several years to come, leaving no possibilities for others who may be hit first." There will only be enough drugs for 10 percent of the European population by 2007.

Roche, the international corporation that manufactures Tamiflu, refuses to divulge its production figures. According to a report in the *San Francisco Chronicle*, Klaus Stohr, director of the WHO's Global Influenza Programme, said that even though Roche had increased its production, at the present rates it would take 10 years and $16 billion to produce enough of the drug for 20 percent of the world's population.

Secondly, there has been no attempt to break the stranglehold that Roche has over the production of Tamiflu. Instead of taking over the facilities of the big pharmaceutical companies to step up the manufacture of the drug, the defense of the profit system and the patent rights of drug companies has remained paramount. Roche's claim that production is too complex and dangerous for others to attempt—and that it can only be made from the Chinese fruit star anise (Roche buys up 90 percent of the Chinese harvest)—has been refuted in practice by the Indian generic manufacturer Cipla. Scientists at Cipla have now analysed the drug and are expecting to start production next year.

Although scientists have been warning of the danger of an H5N1 virus since 1997, Roche—after buying the drug from a small US company, Gilead Sciences, in 1996 and obtaining approval for distribution from US federal regulators in 1999—produced only limited quantities, as it was hardly profitable. Only when the WHO recommended countries stockpile the drug at the beginning of 2004 did Roche begin larger-scale production, making sales of $456 million in the first half of this year.

There has been a report of a case of human infection in Vietnam where a patient was partially resistant to Tamiflu. Scientists are suggesting that alternative drugs from the same family such as Relenza (zanamivir), manufactured by GlaxoSmithKline, should be available. So far, there are no reports that any such alternative drugs are being stockpiled. British officials explained this by saying that the alternatives were more difficult to administer.

Thirdly, no vaccine has been developed for use against the new flu strain. Flu vaccines have to be reformulated each year to take account of current flu strains and would be no use against the H5N1 variety. The current techniques used in vaccine production date from the 1950s and would be entirely inadequate to produce the quantities required in a pandemic. All the Bush administration has done is to offer the major drug companies inducements such as limited liability and guaranteed minimum sales to enter the vaccine market—the effect of which is likely to take years. Vaccines yield poor profit margins. As Laurie Garrett explains: "The total number of companies willing to produce influenza vaccines has plummeted in recent years, from more than two dozen in 1980 to just a handful in 2004. The financial risk of investing in vaccines is also a key factor. In 2003, the entire market for all vaccines...amounted to just $5.4 billion...less than 2 percent of the global pharmaceutical market of $337.3 billion."

Just how serious the impact of a new strain of flu could be was made clear in research announced last week in which scientists at the US Centers for Disease Control and Prevention (CDC) reconstructed the influenza virus responsible for 50 million deaths worldwide in the 1918 "Spanish" flu pandemic. Utilising a technique called reverse genetics, they used dead fragments of the virus retrieved from preserved tissue samples from an Alaskan flu victim, whose body had been well preserved after being buried in the permafrost layer.

The researchers showed that the flu virus responsible for the 1918 pandemic originated as a bird flu virus that became adapted to be able to replicate in human cells and spread by human-to-human infection. It had previously been thought that pandemics arose through an avian strain of the flu virus merging with a human strain within a mammal host. The milder epidemics of 1957 and 1968 were the result of viruses that were a hybrid of mammalian and bird flu viruses.

There is serious concern that the current strain is evolving in a similar way to that of the 1918 pandemic. Professor John Oxford commented: "This study gives us an extra warning that H5N1 needs to be taken even more seriously than it has been up to now."