

Re-Creation of 1918-19 Virus Suggests Bigger Bird-Flu Threat

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Re-Creation of 1918-19 Virus
Suggests Bigger Bird-Flu Threat

By BETSY MCKAY

Staff Reporter of THE WALL STREET JOURNAL

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Two teams of scientists reported that they re-created the influenza virus that killed as many as 50 million people in 1918 and 1919. The findings suggest that the threat of an avian-flu pandemic might be greater than previously thought.

Researchers from the Armed Forces Institute of Pathology, the Centers for Disease Control and Prevention and Mount Sinai School of Medicine said that the historic, killer flu-bug strain probably originated as an avian bug and then spread in humans without undergoing complicated changes that many experts had thought necessary for a human pandemic. Their findings, published today in the journals *Nature* and *Science*, create "cause for concern" and make getting to the bottom of the 1918 flu outbreak far more than an historical exercise, said Jeffery Taubenberger, the Armed Forces Institute researcher who led one of the studies.

Fears are growing over the continuing spread of avian flu, which has become widespread in poultry flocks and is jumping to humans with increasing frequency. The lethal strain, known as H5N1, has claimed 60 lives in Indonesia, Vietnam, Thailand and Cambodia since late 2003. Most of those cases were in people who had direct contact with infected poultry, but fears are growing that the highly contagious virus could mutate and begin spreading between humans. President Bush said on Tuesday that he would consider using the military to enforce quarantines in the event of an outbreak in the U.S.

The findings by Dr. Taubenberger and his team of researchers, published in *Nature*, follow a nine-year effort to decode the 1918 strain by sequencing its eight genes. The research concluded that the pandemic flu outbreak was most likely caused by an avian virus. The scientists also discovered 10 mutations that distinguish the 1918 virus from avian bugs, suggesting changes that the virus made to adapt to a human host, they said. They also noted that some of those mutations are also present in

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the currently circulating H5N1 virus, suggesting it could make the jump to humans in a similarly rapid and alarming way.

In the second study, published in Science, scientists from the CDC and Mount Sinai took the decoded virus and re-created it, using a process known as reverse genetics. The virus they created, in a secure CDC lab, was "exceptionally virulent," quickly killing embryonated chicken eggs and mice, said Terence Tumpey, a senior scientist at the CDC who led the effort. The team also found that the 1918 bug had an unusual ability to penetrate cells that flu bugs don't usually reach deep in the lungs, providing some clues as to why its symptoms were so severe.

While the research significantly advances scientists' understanding of the avian-flu threat, it also raises concerns about keeping the virus from escaping from the lab or into the hands of bioterrorists. Dr.

Tumpey said the experiments were approved ahead of time by two CDC committees with internal and external experts, and were conducted under strict safety and security standards.

Write to Betsy McKay at betsy.mckay@xxxxxxx

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Sam Adams-- "It does not require a majority to prevail, but rather an irate, tireless minority keen to set brush fires in people's minds"

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◇ *From:* William Wagner

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