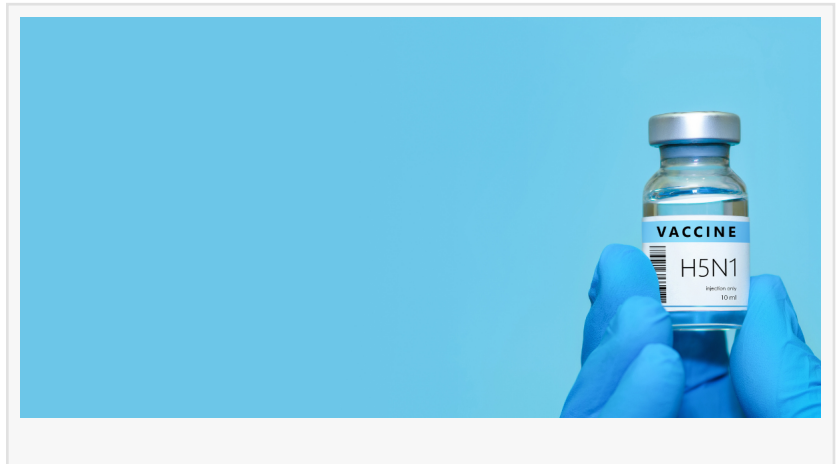


Considerations for Starting Mass Production of H5N1 Avian Flu Vaccines

As scientists find more evidence of the H5N1 avian flu spreading, public health officials are grappling with how to respond.

AUSTIN, TEXAS, UNITED STATES, August 7, 2024 /EINPresswire.com/ -- How Dangerous is Avian Flu, Officially Known as “Highly pathogenic avian influenza A H5N1 clade 2.3.4.4b genotype B3.13.”?



Dr. Jennifer Nuzzo, a senior fellow for global health at the Council on Foreign Relations (CFR), and Dr. Rick Bright, former CEO of the Pandemic Prevention Institute at the Rockefeller Foundation and director of the Biomedical Advanced Research and Development Authority (BARDA) recently discussed the growing risk of avian influenza spreading in North America among poultry, dairy cows – and a small number of farm workers in direct contact with infected animals.

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Dr. Nuzzo reminds us that this disease, called Highly Pathogenic Avian Influenza (HPAI) influenza virus H5N1, is a closely related strain of the H1N1 influenza A virus that infected an estimated 500 million people worldwide during the Spanish Flu pandemic of 1918-1920 – resulting in an estimated 17 to 50 million people dying from the virus.

Recent History of H5N1

Today’s H5N1 virus (and its related H7 and H9 variants) was first identified back in the 1990s, initially detected among geese. In 1997, it crossed over the species barrier to infect about 18 humans in Hong Kong, killing 6. [Public health](#) officials successfully contained this outbreak by conducting a mass bird cull at chicken farms and closing live markets.

However, the virus continued to spread under the radar, circulating among wild birds and later domesticated ducks. Humans once again became infected with H5N1 starting in 2003 and continuing until today. In this period, about 900 human cases have been detected, with an alarmingly high mortality rate of 60%. In Dr. Nuzzo's view, this very high mortality rate makes H5N1 a potentially much deadlier virus than Covid 19.

Are We Adequately Prepared this Time to Respond to a Deadly Avian Flu Outbreak? Are We One Mutation Away from Disaster?

Dr. Bright expressed his concern about the way that the H5N1 virus continues to spread around the world, often in regions where it was not expected.

Contributing to this proliferation is the way the virus is establishing a viral reservoir in a growing number of species, spreading beyond chickens and ducks to now infect wild birds and other species of mammals, including cattle, goats, cats, coyotes, pumas, leopards, foxes, opossums, squirrels, skunks, raccoons, bears, and seals.

The transmission of H5N1 to cattle, confirmed at a Texas dairy farm in March 2024, was both unwelcome and unexpected – Bright said that until now influenza A infections have not been reported in cows.

Dr. Bright warns us that the transmission to mammalian species, such as dairy cattle, brings the threat of an H5N1 flu virus one step closer to widespread human infection.

Unfortunately, in the past couple of months, we have seen a small number of cases in North America where the H5N1 virus has jumped from dairy cows to infect dairy workers. Fortunately, these workers recovered without hospitalization, with their primary symptom being eye inflammation. Importantly, the virus was not detected in their respiratory systems.

However, Dr. Bright is concerned about further anecdotal reports of infections among additional farm workers. Also concerning is the recent detection of genetic material from the H5N1 virus in



Shown above is a stainless steel wet lab used for blood research – featuring a seamless 14-foot workbench with sink – built by Formaspace for a medical device research facility outside of Boston.

raw milk and the muscle tissue of beef processed at a slaughterhouse.

The Roles of the USDA

The USDA is responsible for ensuring the food safety of farm animals and Dr. Bright worries if their testing policies are falling behind what's happening on the ground, e.g. the spread of the virus might be much more widespread than the limited testing taking place would indicate.

For example, he notes that the testing of dairy cows is generally only required when they cross state lines. Otherwise, testing by farmers is voluntary and generally only happens when cows have symptoms, so asymptomatic infections are not detected. Another loophole Dr. Bright pointed out is that these testing requirements are limited to dairy cows, it doesn't apply to beef cattle.

Without a comprehensive testing farm program, farm workers could be at risk. (NB Dr. Bright recommends eye protection for dairy workers.)

STAT also recently reported on concerns that the USDA's efforts to monitor the spread of the H5N1 virus may be inadequate. They report that researchers at the US Department of Agriculture have issued a pre-print article pointing to genetic evidence that the spread of avian flu to cattle took place four months before the USDA detected it on March 25, 2024, likely due to a wild bird infecting cattle in the Texas Panhandle.

Researchers are calling for increased testing and transparency by the USDA to avoid some of the same turf war missteps that occurred during the early response to the COVID-19 pandemic.

STAT News also recently reported there is increasing concern that the strain of H5N1 infecting cattle in North America could be better adapted to infect humans than other circulating H5N1 strains.

Is it time to hit the panic button?



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Not quite, according to Michael Osterholm, director of the University of Minnesota's Center for Infectious Diseases Research and Policy. In a STAT interview, he said he would be much more concerned if H5N1 began to infect pigs, as they are more closely related to humans genetically. For now, Osterholm is watching and waiting, and preparing: "This all could change in a heartbeat with additional mutations. But there's no evidence this virus has changed."

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