

The risk of an H5N1 pandemic is rising as the virus continues to mutate, spread in more mammal populations, and eventually becomes a human-to-human transmissible virus

There is also risk of deliberate mutation and spread of this virus to cause a pandemic that could kill billions.

The H5N1 virus (previously called Avian or Bird Flu) continues to spread into more mammal populations. The recent human case in the U.S. is not from human-to-human transmission of H5N1, but the risks of this are clearly rising. H5N1, which historically has been about 60% lethal to humans, had a major mutation last year enabling it to spread in many mammal populations around the world. The mammal hosts (H5N1 now in 50 mammal populations and humans) serve as “mixing vessels” helping the H5N1 virus spread to new species. In March the U.S. had its first case of goats with H5N1 and the virus infected dairy cattle in Kansas and TX.

The current variant of H5N1 -- clade 2.3.4.4b -- is considered a “new monster” by Marcela Uhart, a wildlife veterinarian with the University of California. A recent University of California study on H5N1 reported that:

- “Bird flu has mutated to spread more easily between birds and marine mammals, increasing the potential risk to humans”
- “genetic analysis revealed that the virus was nearly identical in all the animals, and shared adaptations were previously detected in a human case in Chile as well as in sea lions in Peru and Chile”
- “The fact that the same virus was found . . . indicates a multi-species outbreak”
- “This virus is still relatively low risk for humans,” Uhart said in a university news release. However, “as long as the virus continues to replicate in mammals, it may make it a higher concern for humans,” he added.”
- “A recent paper co-authored by Uhart reported a large outbreak that killed 70% of elephant seal pups during the 2023 breeding season, with mortality rates reaching at least 96% in surveyed regions of Argentina.”
- “When it first came to Argentina, we didn’t know if it would affect elephant seals,” Uhart said. “We never imagined the magnitude of what was to come.”

The mutated H5N1 virus expanded in March 2024 to another mammal, a goat dying of H5N1 for the first time in the U.S.

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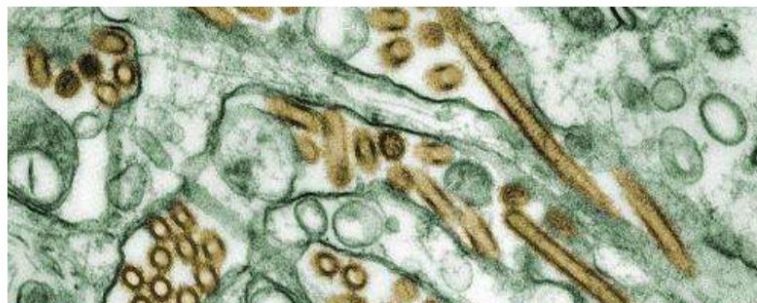
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Editors' nc

Goat dies of bird flu for first time in US, Minnesota officials say: Why it's 'significant'

by Lauren Liebhaber, The Charlotte Observer



A 2023 study in the professional journal “Viruses” explains that viruses mutate and adapt and spread to new species via “mixing vessels”—in this case, influenza virus mutating and mixing in other mammals: “Influenza viruses . . . infect a wide range of animals, including humans. From 1918 to 2009, there were four influenza pandemics, which caused millions of casualties. Frequent spillover of animal influenza viruses to humans with or without intermediate hosts poses a serious zoonotic and pandemic threat. . . . Transmission can occur directly from animals, particularly poultry and swine, to humans or through reassortant viruses in “mixing vessel” hosts. . . . there are a number of hosts which carry both types of receptors and can act as a potential mixing vessel host. High vigilance is warranted to prevent the next pandemic caused by animal influenza viruses.”

Source: Viruses. 2023 Apr; 15(4): 980., Zoonotic Animal Influenza Virus and Potential Mixing Vessel Hosts, Elsayed M. Abdelwhab, Thomas C. Mettenleiter, Daniel R Perez

Also within the last few weeks, H5N1 detected in cattle in Midwest U.S.:

BREAKING: Mystery Illness Impacting Texas, Kansas Dairy Cattle is Confirmed as Highly Pathogenic Avian Influenza Strain



USDA says genetic sequencing revealed the mystery illness impacting Texas dairies is the same strain of Highly Pathogenic Avian Influenza (HPAI) that's been in the U.S. The virus is carried by wild waterfowl. (File Photo/Dairy Herd)

By **TYNE MORGAN** March 25, 2024



In April 2024, a human in TX was infected with H5N1 from these cattle.

The U.S. government funded “gain of function research” in H5N1 Avian Flu over a decade ago, and researchers were successful in making Avian Flu air to air transmissible in ferrets, which like mink, have respiratory systems very similar to humans. Worse, this research was published, including how to do it. It is not high tech CRISPR biotechnology, but a very simple method that any one can do, at very low cost.

In 2011, Ron Fouchier of the Erasmus Medical Center, in

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Person Tests Positive for Bird Flu in Texas After Exposure to Cattle

It is the second known human case of H5N1 infection in the U.S.

By *Brianna Abbott* [Follow](#)

Updated April 1, 2024 5:54 pm ET



Rotterdam, turned H5N1 virus into a possible human-to-human flu by infecting ferrets (mammals used to test human effects) repeatedly until a form of H5N1 that could spread through the air from one mammal to another resulted. This was not high-tech bioengineering, but swabbing the noses of the infected ferrets and using the gathered viruses to infect another round. A team of scientists at China's National Avian Influenza Reference Laboratory combined H5N1 with genetic attributes found in dozens of other types of flu. Some of their "man-made super flu strains" could spread through the air between guinea pigs, killing them. This was condemned by scientists around the world as "appalling irresponsibility" since the new viral strains created by mixing bird-flu virus with human influenza could escape from the laboratory to cause a global pandemic killing millions of people. If researchers we know of are tampering with H5N1 to make it human to human transmissible, we should expect that terrorists and nation-states are doing this as well.

The mink that were spreading H5N1 in Spain last year were infected with a new variant of H5N1, with a genetic mutation that is known to make it easier to spread in mammals. As Wendy Puryear, a virologist at Tufts University noted, this is a severe problem because mink have a respiratory system very similar to humans.

With H5N1 virus spreading and mutating in more and more mammal populations around the world, and sometimes in humans, we are a big step closer and may already be very near a human to human transmissible H5N1 virus. The mutated virus may be more or less than 60% lethal; we won't know until it happens.

It is not just a risk of natural mutation we must be prepared for. Russia, China, North Korea, Iran, Syria, al Qaeda, all know how to promote mutations and develop human to human transmissible H5N1. Anyone who can research and read knows how to do this since U.S. government funds were used to fund research that successfully made Avian Flu transmissible between mammals, and the results were published.

If Putin wants to distract the U.S. and the west from supporting Ukraine, he could unleash a human to human transmissible H5N1 virus here, clandestinely, and achieve that objective. If China wants to have U.S. resources pulled back for pandemic recovery so they can invade Taiwan, they can do a bio attack. North Korea, Iran, al Qaeda, even one dedicated fanatic, could start the worst pandemic, the worst disaster in the history of mankind by releasing a virus they manipulate with low tech means, or CRISPR biotechnology.

Many biologists and think tank experts have issued warnings and testified before Congress about this risk. Dr. Tara O'Toole, former director of Johns Hopkins University Center for Civilian Biodefense Strategies, warned that "all you have to do is click in the new gene, you get a new pathogen, you get a new weapon. . . ." Dr. D.A. Henderson and other scientists, writing in an article on biosecurity, warned that when H5N1 becomes human-to-human transmissible it could cause billions of illnesses and deaths around the world.

Unlike the U.S. Center for Disease Control (CDC), medical experts and the World Health Organization are far more candid and honest in letting people know: H5N1 is a real threat to humans.

A March 2024 report in “Emerging Infectious Disease” warned that H5N1 poses a great risk to humans:

[O]ne of the most severe influenza viruses to have affected humans (i.e., Spanish influenza [1918–1919]) developed from an avian influenza virus that adapted to humans (49), a fact that should be considered when assessing the spillover risk.

Mutations in the virus found in diverse mammal species, especially in the current panzootic, are of great concern. For instance, the T271A mutation reported in minks in Spain is also present in the H1N1 that produced a pandemic in 2009 (9). Similarly, the PB2-E627K mutation found in this virus in diverse geographic areas could indicate an adaptation for replication in mammals (28,31). Moreover, some infected species, such as minks, may act as a mixing vessel for interspecies transmission between birds, mammals, and humans (9). Mutations and infections with H5N1 in potential mixing-vessel species (e.g., minks and wild and domestic pigs) should be followed closely because of the potential risk to human health.

It is fundamental that we rethink the interface between humans, domestic animals, and wild animals to prevent the emergence of dangerous pathogens that affect biodiversity and human health (48). Governments must assume responsibility for protecting biodiversity and human health from diseases caused by human activities, particularly diseases originating from intensive production (50), such as this H5N1 avian influenza virus. If we hope to conserve biodiversity and protect human health, we must change the way we produce our food (poultry farming, in this specific case) and how we interact with and affect wildlife.

Source: Plaza PI, Gamarra-Toledo V, Euguí J, Lambertucci SA. Recent Changes in Patterns of Mammal Infection with Highly Pathogenic Avian Influenza A(H5N1) Virus Worldwide. *Emerg Infect Dis.* 2024;30(3):444-452. <https://doi.org/10.3201/eid3003.231098>



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Ongoing avian influenza outbreaks in animals pose risk to humans

Rising mammal infections signal alarm for potential H5N1 pandemic 100/100

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By Hugo Francisco de Souza

Reviewed by Susha Cheriyaedath, M.Sc.

Feb 14 2024

The 2018 “Spanish Flu” (bad name for it—this virus most likely started in Kansas) was about 2% lethal, killing an estimated 100 million people. Covid 19 is far less than 1% lethal. A pandemic today with far fewer people able to grow their own food or source local water, and a generally more violent population, would likely lead to far more deaths from starvation and marauder killings as starving people steal and kill to survive. You should be prepared for a pandemic with double digit lethality, no one going to work, no law enforcement, no economic production or food deliveries, public utilities shutting down with no workers coming in, and widespread, long-lasting loss of law and order. Expect no warning from the CDC, and no help from the Government when an H5N1 pandemic starts. The priority in a disaster is sheltering elected politicians and “Continuity of Government”—ensuring that top government officials are alive and in charge. You will be on your own for many months when H5N1 yields a human pandemic.