Influenza (Flu)

CDC A(H5N1) Bird Flu Response Update

May 3, 2024 – CDC continues to respond to the public health challenge posed by a multistate outbreak of avian influenza A(H5N1) virus, or "A(H5N1) virus," in dairy cows and other animals in the United States. CDC is working in collaboration with the U.S. Department of Agriculture (USDA), the Food and Drug Administration (FDA), state public health and animal health officials, and other partners using a One Health approach. Currently, one human case has been confirmed in a person with exposure to presumably infected dairy cows reported by Texas on April 1, 2024 [1][2].

CDC's response to this outbreak of influenza A(H5N1) virus in dairy cattle and other animals most recently includes:

- Continuing to support states that are monitoring people with exposure to cows, birds, or other domestic or wild animals infected, or potentially infected with, avian influenza A(H5N1) viruses. Testing of symptomatic people who have exposures is being done by state or local officials, and CDC is conducting confirmatory testing when needed.
    - Monitoring and testing data are now being reported, and will be updated weekly on Fridays. Since March 2024, at least 220 people have been monitored for A(H5N1) after relevant exposures and at least 30 people have been tested.
- Having ongoing discussions with multiple states about state-led field investigations to explore key scientific and public health questions related to the ongoing outbreak. CDC is playing a coordinating role with regard to investigation protocols so that data collection can be standardized across states and results can be pooled. In addition, CDC has multilingual and multidisciplinary epidemiological field teams ready to deploy to support on-site studies if requested.
- Continuing work to better characterize the virus from the human case in Texas.
    - Beginning cell and animal laboratory studies, including to:
        - Learn how the virus reproduces in both human and cow respiratory tract epithelial cells and cow mammary epithelial cells.
        - Assess the severity of illness and transmissibility of the virus under different scenarios by infecting ferrets and assessing the outcome. Ferrets are used as a model for people because they get sick and spread influenza viruses in a manner similar to humans.
    - Testing human sera (blood) from people previously vaccinated with pre-pandemic A(H5) vaccines during clinical trials to see how their antibodies cross-react to the virus isolated from the human case in Texas. Data to date – including genetic analysis and testing of ferret antisera from multiple clade 2.3.4.4b candidate vaccine viruses (CVVs) (Reference table below[3]) – suggest vaccination will offer good cross-protection against cattle outbreak viruses. (The human case in Texas was a 2.3.4.4b virus). Antigenic characterization of the virus isolated from the human case in Texas (A/Texas/37/2024) with ferret antisera produced against existing pre-pandemic CVVs confirmed clade 2.3.4.4b A(H5) CVVs have good cross-reactivity to this virus.
- Engaging with manufacturers of commercial diagnostic tests and clinical partners to make progress toward the goal of having an A(H5N1) test that is widely available for consumers.
- Working so that states can conduct A(H5N1) testing on eye specimens. This week, use of eye swabs with the CDC H5 assay was approved by the CDC Clinical Laboratory Improvement Amendment (CLIA) director for use at CDC, which means results can be reported back for patient care. Originally, the A(H5N1) test was designed for use with respiratory specimens.
- Developing information for health care provider organizations to share with their membership related to the health concerns around consumption of raw milk in the context of the current A(H5N1) outbreak, since A(H5N1) virus fragments have been detected at high levels in raw milk. CDC and FDA recommend against the consumption of raw milk. Testing at FDA has indicated that pasteurization kills A(H5N1) virus in milk.

- Continuing to engage One Health partner organizations from public health, agriculture, wildlife, milk regulatory officials, and others to share information and ensure preparedness to prevent and respond to this emerging infectious disease threat and for any potential human infections.
- Continuing to monitor flu surveillance data, especially in areas where A(H5N1) viruses have been detected in dairy cattle or other animals, for any unusual trends in flu-like illness, flu, or conjunctivitis.
    - CDC maintains a webpage on How CDC is monitoring influenza data to better understand the current avian influenza A (H5N1) situation in people that is updated weekly.
    - CDC flu surveillance systems show no indicators of unusual flu activity in people, including avian influenza A(H5N1) viruses, for the most recent week.

CDC Recommendations

CDC updated the H5N1 Technical Report on April 26 to include new human cases of A(H5N1) reported globally and recent activity in wild birds, poultry, and other animals, including the multistate outbreak in U.S. dairy cattle and other animals. The report also has updated information on monitoring for A(H5N1) virus infections in people in the United States; no additional human cases have been detected in the U.S.[1][2] It concludes that the risk to the general public remains low at this time. CDC has interim recommendations for prevention, monitoring, and public health investigations of A(H5N1) virus infections in people. CDC also has updated recommendations for worker protection and use of personal protective equipment (PPE), which were recently expanded to reduce their risk of exposure. Following these recommendations is central to reducing a person's risk, and containing the overall public health risk.

Ongoing Surveillance Needed

Because of the potential for influenza viruses to constantly change, continual surveillance and preparedness efforts are critical, and CDC is taking measures to be ready in case the current risk assessment for the general public changes. The immediate goal is to prevent further spread of this virus between animals and people. CDC will continue to monitor these viruses and update and adjust guidance as needed. As a reminder, while CDC believes the current risk of A(H5N1) infection to the general public remains low, people with close, prolonged, or unprotected exposures to infected birds, cattle, or other animals, to unpasteurized ("raw") milk, or to environments contaminated by infected birds, cattle, or other animals or by raw milk, are at a greater risk of infection.

This is a rapidly changing situation, and CDC is committed to providing frequent and timely updates.

Footnotes

[1] The first human case of A(H5N1) bird flu in the United States was reported in 2022 in a person in Colorado who had direct exposure to poultry and was involved in the depopulating of poultry with presumptive A(H5N1) bird flu. The 2022 human case was not related to dairy cattle. The person recovered. Learn more at U.S. Case of Human Avian Influenza A(H5) Virus Reported.

[2] The second human case of A(H5N1) bird flu in the United States was reported in 2024 and linked with dairy cattle and reported eye redness as their only symptom, consistent with conjunctivitis, and has recovered. Learn more at Highly Pathogenic Avian Influenza A (H5N1) Virus Infection Reported in a Person in the U.S.

[3] **Table.** Hemagglutination inhibition assay results showing the antibody titers of ferret antisera produced against clade 2.3.4.4b HPAI A(H5) candidate vaccine viruses and cross-reactivity titers compared to the virus isolated from the human case detected in a Texas dairy farm worker.

REFERENCE ANTIGENS	Subtype	Clade	IDCDC-RG71A	IDCDC-RG78A	IDCDC-RG80A
IDCDC-RG71A (A/Astrakhan/3212/2020-like)	H5N8	2.3.4.4b	160	80	160

REFERENCE ANTIGENS	Subtype	Clade	IDCDC-RG71A	IDCDC-RG78A	IDCDC-RG80A
IDCDC-RG78A (A/American Wigeon/South Carolina/22-000345-001/2021-like)	H5N1	2.3.4.4b	80	160	320
IDCDC-RG80A (A/chicken/Ghana/AVL-763_21VIR7050-39/2021-like)	H5N1	2.3.4.4b	40	40	320
TEST ANTIGEN					
A/Texas/37/2024, conjunctival swab isolate	H5N1	2.3.4.4b	80	160	320

This data was presented publicly at the Highly Pathogenic Avian Influenza Scientific Symposium , which was hosted by ASTHO on April 25, 2024. Additionally, this data was published in a letter in the New England Journal of Medicine on May 3, 2024: "Highly Pathogenic Avian Influenza A(H5N1) Virus Infection in a Dairy Farm Worker ."

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