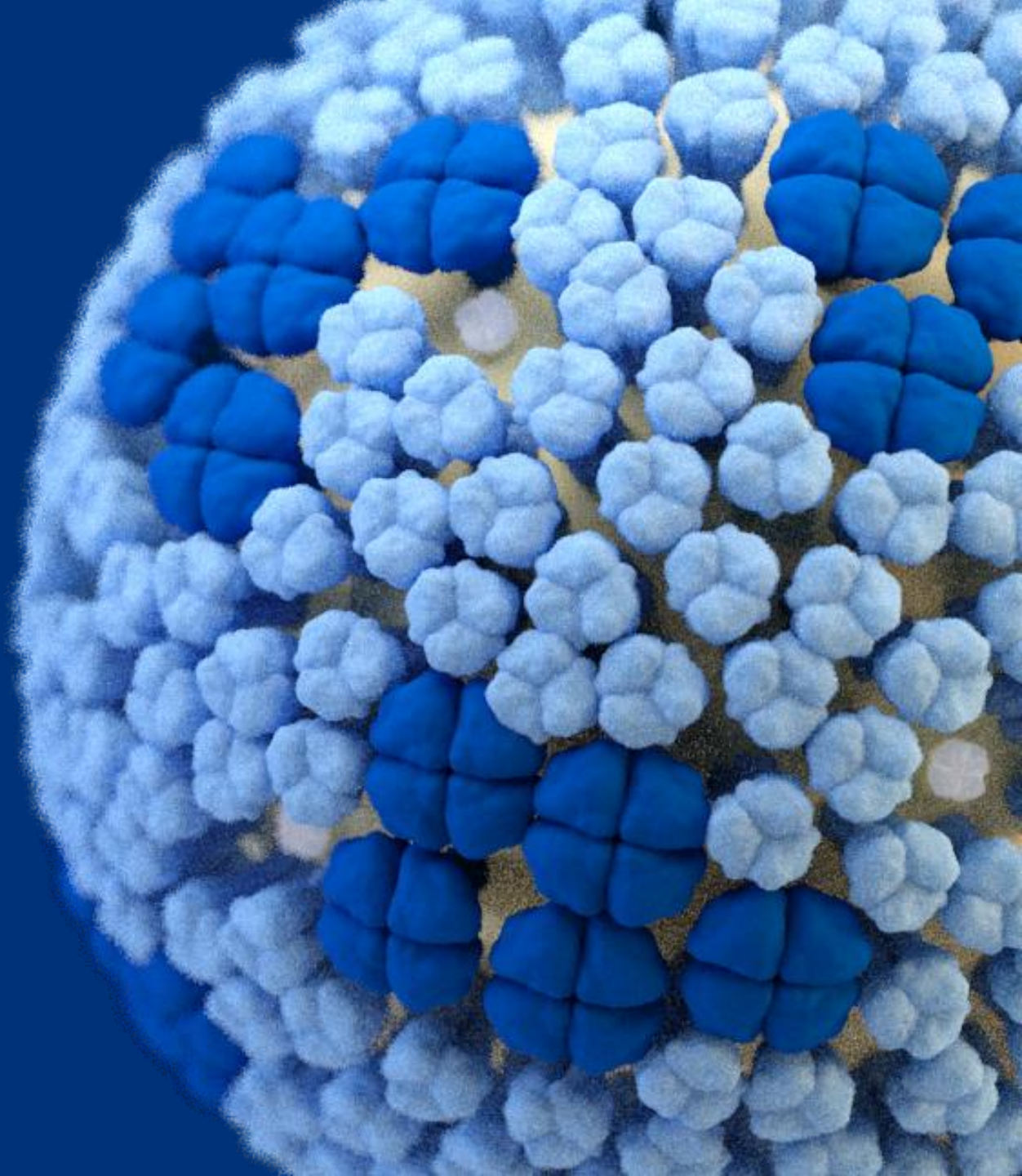


Highly Pathogenic Avian Influenza A(H5N1)

National Center for Immunization and
Respiratory Diseases

May 22, 2024



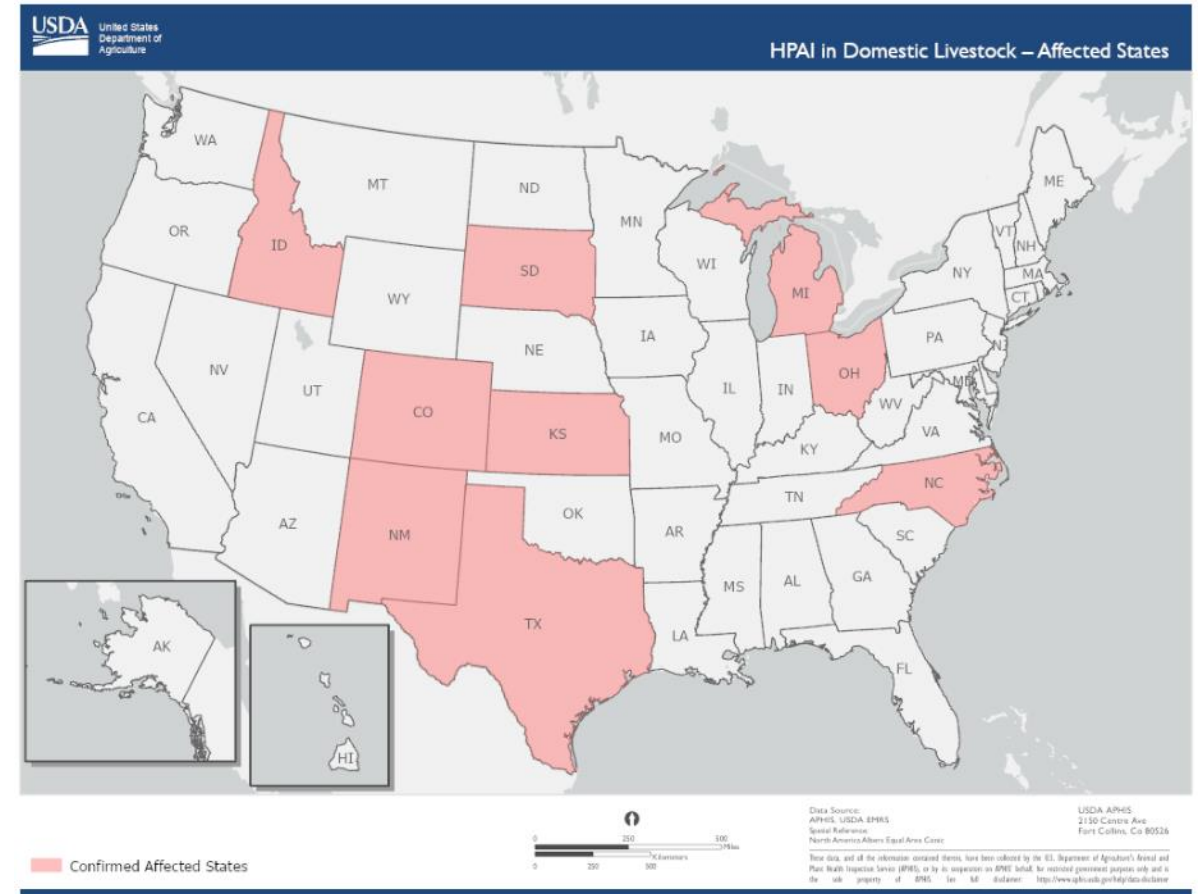
H5N1 Case in Texas

- April 1 – Texas announced first human infection of HPAI A(H5N1) virus
- Adult working at a commercial dairy farm
- Developed conjunctivitis on approximately March 27, 2024
 - Not hospitalized
 - Isolation recommended
 - Provided antiviral treatment and recovered
- No illness reported in household contacts
 - Provided with influenza antiviral medications
- No human-to-human transmission



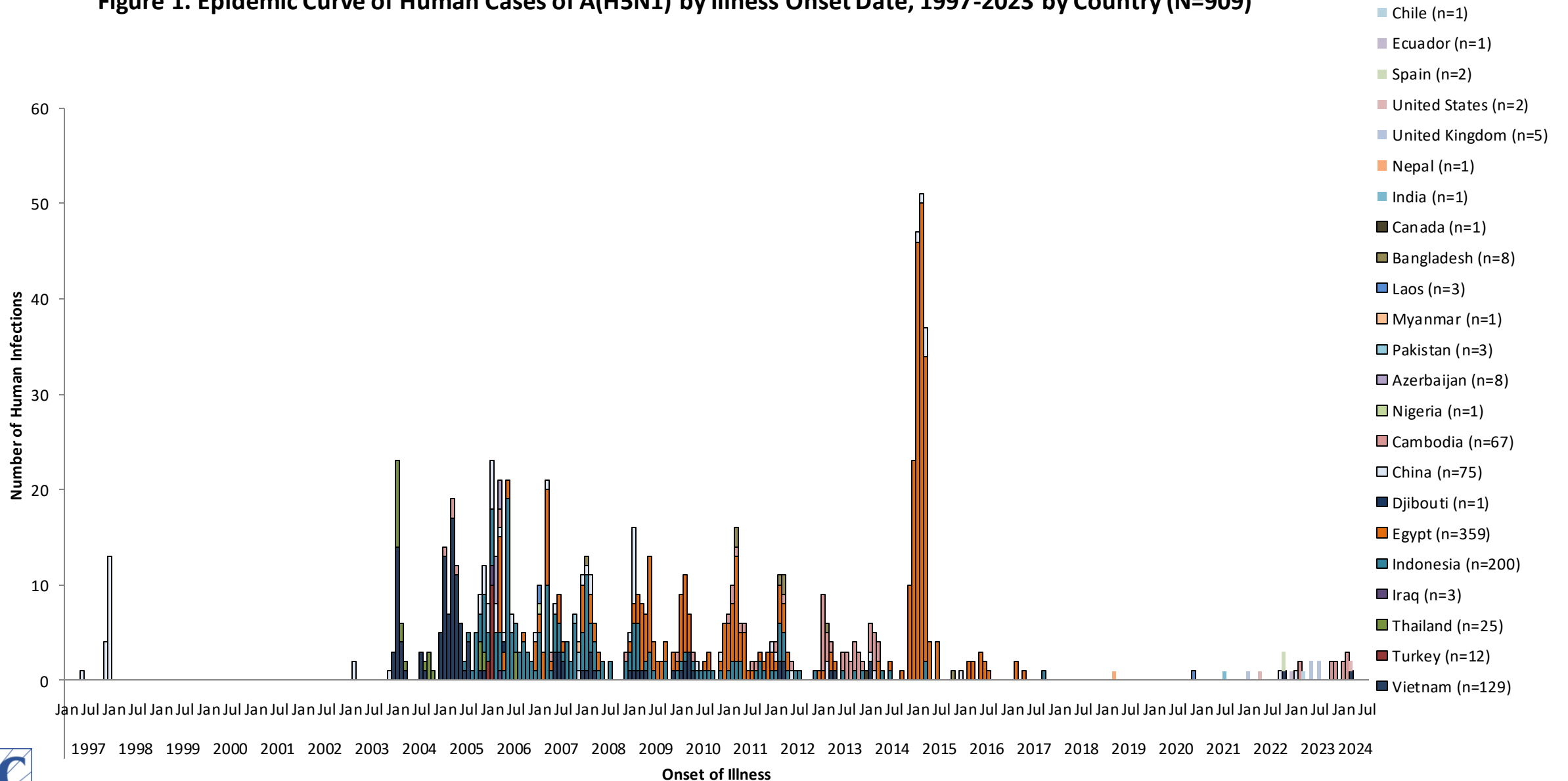
H5N1 Situation Update – Dairy Herds

- Dairy cow illness began in early 2024
 - Significant decreases in milk production and quality
- **March 25:** USDA reported HPAI confirmed in cows from TX and KS
- To date, USDA confirmed HPAI in dairy herds >40 farms across 9 states
 - CO, ID, KS, MI, NM, NC, OH, TX, SD



H5N1 Cases Since 1997

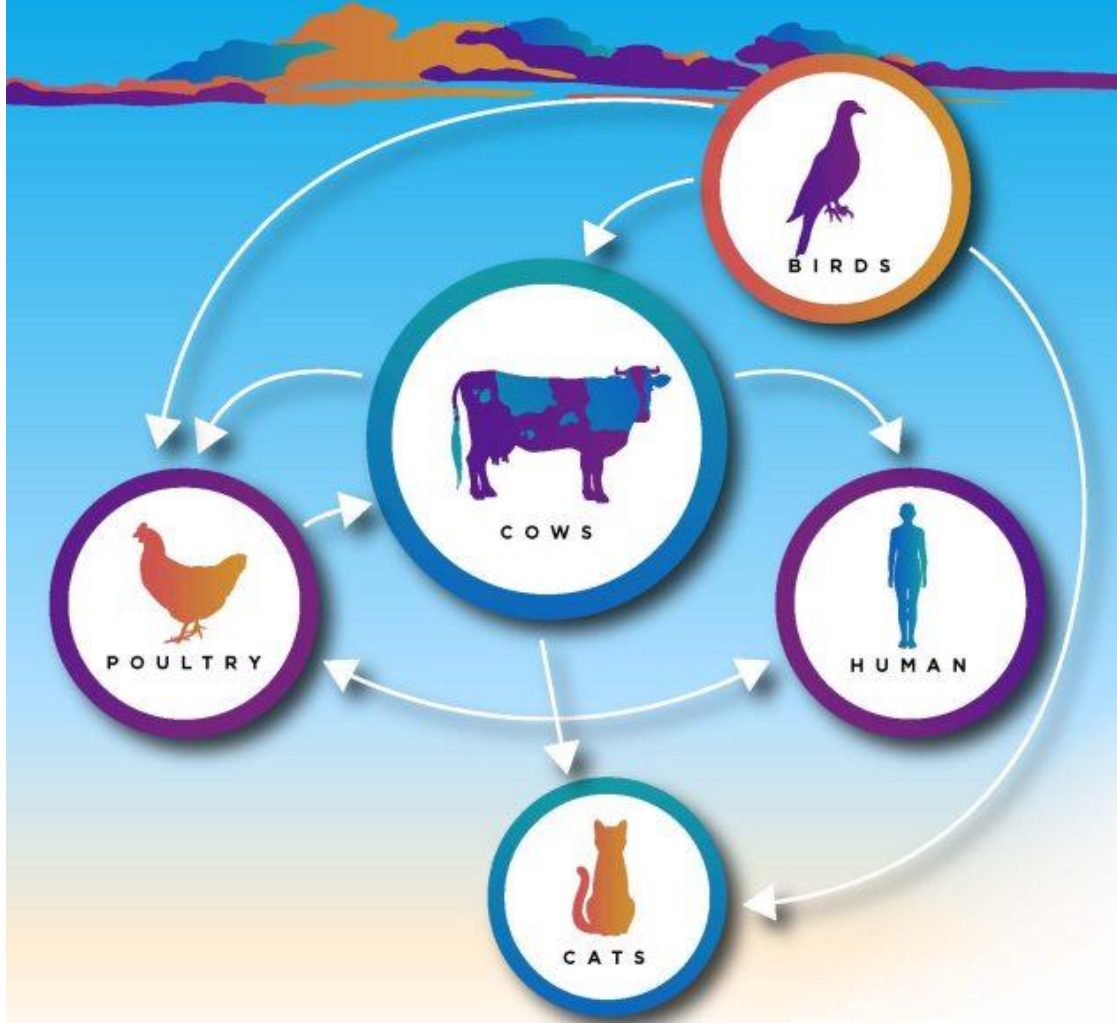
Figure 1. Epidemic Curve of Human Cases of A(H5N1) by Illness Onset Date, 1997-2023 by Country (N=909)



Public Health Risk

- Overall risk to the public remains low
- Increased risk with exposure to infected animals or environment – occupational, recreational
- Exposed individuals should monitor for symptoms after first exposure and for 10 days after last exposure

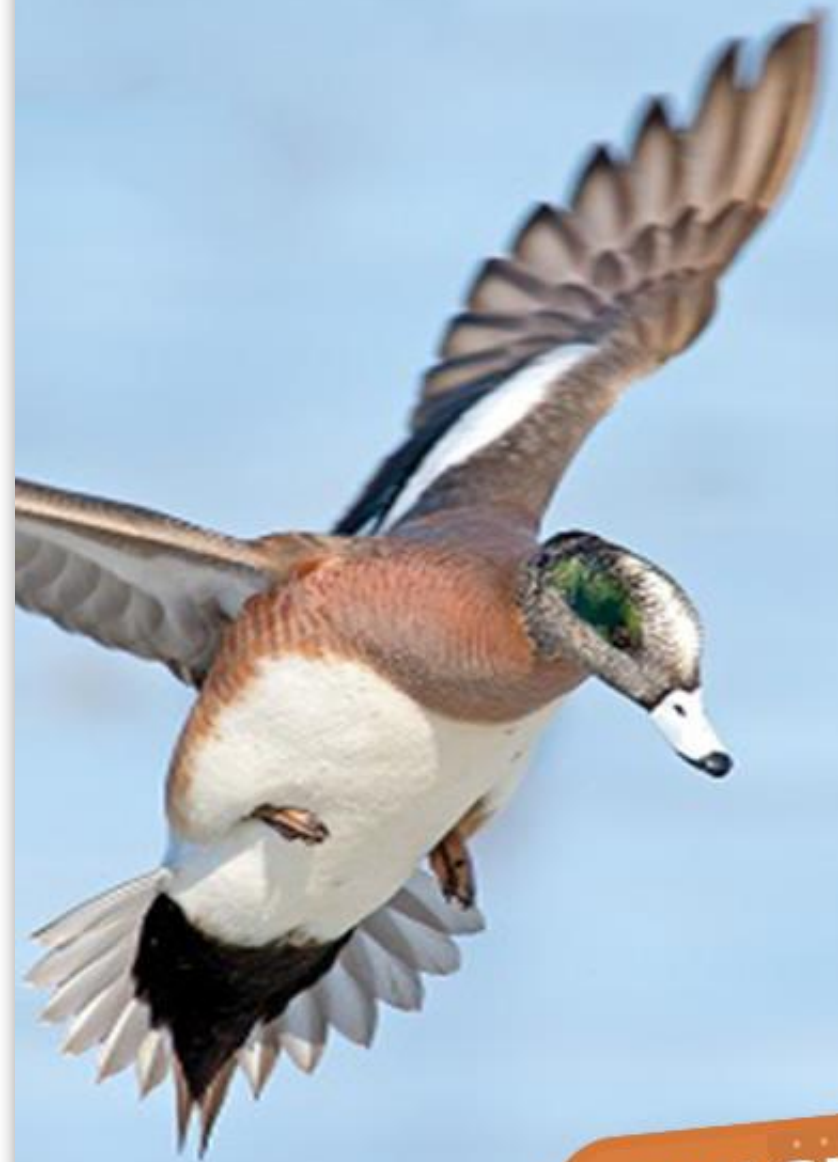
H5N1 Bird Flu in Dairy Cows How is it Spreading?



[Highly Pathogenic Avian Influenza A\(H5N1\) Virus in Animals: Interim Recommendations for Prevention, Monitoring, and Public Health Investigations | Avian Influenza \(Flu\) \(cdc.gov\)](#)

CDC's Priorities

- Supporting and engaging public health and agricultural partners
- Protecting human health and safety
- Understanding risk to people from H5N1 viruses
- Assessing H5N1 viruses for genetic changes



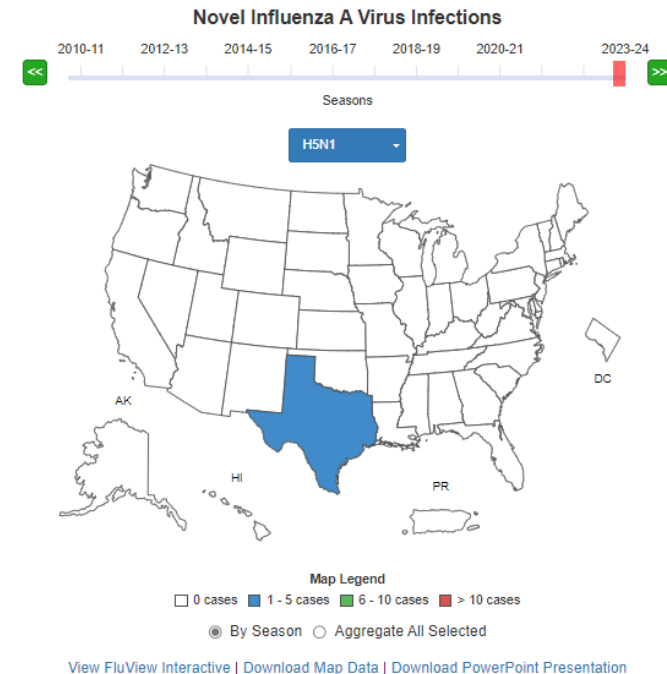
#FIGHT FLU

CDC Role

- Part of USG interagency response with USDA, FDA, ASPR, and more
- Supporting state monitoring of exposed persons and testing
- Epidemiological field studies
- Providing updated recommendations
- Monitoring influenza activity
- Extensive partner outreach
- Conducting in-depth, ongoing risk assessments and virus characterization

Monitoring for Novel Influenza A Virus Infections among People, including Influenza A(H5N1)

Rapid detection and [reporting of human infections](#) with novel influenza A viruses, including influenza A(H5N1), is important to facilitate prompt awareness and an effective public health response. For confirmed cases, the reporting jurisdiction completes a case report form, which is submitted to CDC. The information includes patient demographics, symptoms, the clinical course of illness, and exposure history. The reporting jurisdiction for influenza A(H5N1) cases reported in 2024 are summarized below.



Data presented through: 04/20/2024; Data as of: 04/25/2024

Additional novel influenza case surveillance information for current and past seasons:
[Surveillance Methods](#) | FluView Interactive: [Case Characteristics](#)

Resources from CDC

— Situation Updates:

— [CDC A\(H5N1\) Bird Flu Response Update | Avian Influenza \(Flu\)](#)

— Surveillance Updates

— [How CDC is monitoring influenza data among people to better understand the current avian influenza A \(H5N1\) situation | Avian Influenza \(Flu\)](#)

— Technical Report

— [Technical Report: Highly Pathogenic Avian Influenza A\(H5N1\) Viruses | Avian Influenza \(Flu\) \(cdc.gov\)](#)

— Updated Recommendations

— [Highly Pathogenic Avian Influenza A\(H5N1\) Virus in Animals: Interim Recommendations for Prevention, Monitoring, and Public Health Investigations](#)

— [Recommendations for Worker Protection and Use of Personal Protective Equipment \(PPE\) to Reduce Exposure to Novel Influenza A Viruses Associated with Severe Disease in Humans](#)

The screenshot shows the CDC website's 'Influenza (Flu)' page. The top navigation bar includes the CDC logo and the tagline 'Centers for Disease Control and Prevention. CDC 24/7. Saving Lives. Protecting People™'. A search bar is located in the top right corner. The main heading is 'Influenza (Flu)'. Below this, there is a sidebar menu with categories like 'Avian Flu', 'Current Situation', 'Bird Flu in Birds', 'Bird Flu in Pets and Other Animals', 'Bird Flu in People', 'Avian Influenza Type A Viruses', 'Prevention and Antivirals', 'Information for Specific Groups', 'Highlights in the History of Avian Influenza', 'Past Outbreaks', 'Health Care & Laboratorian Guidance', 'What CDC Does', and 'Avian Influenza Communication Resources'. The main content area features a 'News & Spotlights' section with a highlighted article: 'CDC A(H5N1) Bird Flu Response Update | Avian Influenza (Flu)'. Below this is a 'Get Email Updates' form with a text input field for an email address and a 'Submit' button. At the bottom, there is a graphic titled 'INFECTED POULTRY CAN SPREAD BIRD FLU TO PEOPLE' with an illustration of a person and a dog.

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^{1,2,3,4}.

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 below⁵) – 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](#) ⁶ 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.

Thank you

