



Public Health Brief

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“Bird Flu”, High Pathogenic Avian Influenza, H5N1:

Key Take Home Messages:

- **The current risk to the public remains low.**
- **No person-to-person spread of bird flu has been detected in California.**
- **People rarely get bird flu, but those who interact with infected dairy cows, poultry, or wildlife have a greater risk of infection.**
- **Pasteurized milk and dairy products are safe to consume. Pasteurization inactivates the bird flu virus.**

H5N1 has been dominating headlines and social media. On Monday, the first H5N1 (bird flu) death was reported in Louisiana—a tragic reminder that H5N1 is a very dangerous virus. The risk of H5N1 is still low to the general public. I will seek to address current developments in a series of Public Health Briefs (PHBs) over the next week, beginning today. The series will include information about backyard chickens, wild birds (for hunters and bird lovers), cats, and raw dairy products. I invite you to submit any questions to me at the above e-mail address, and I will include the answers in PHBs to come.

H5N1 keeps spreading among animals

H5N1 is an [old virus](#) established in wild birds 25 years ago. In 2021, a variant called clade 2.3.4.4b started to spread among birds, like poultry, and mammals worldwide. Then, in 2024, we saw it spread from cow to cow for the first time in the U.S. This was unexpected, as we don't typically see flu in cows, but this is also what flu does—unexpected things. Since, H5N1 hasn't stopped spreading. The latest tally of known infections includes:

- 10,922 wild birds,
- 917 dairy herds, and
- 130,674,361 poultry—a big reason why eggs are hard to find and expensive.



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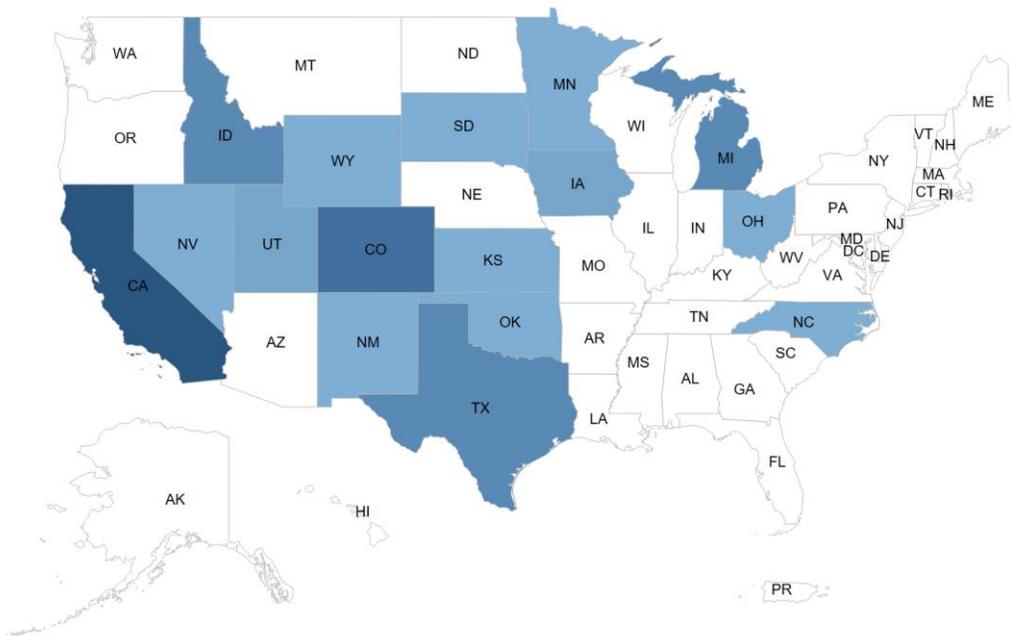
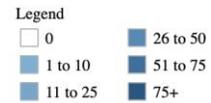
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**Number of Confirmed Cases in Cattle by State,
Total Outbreak**



[Source: USDA](#)



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Spread among animals, particularly those in close physical proximity to humans, means we continue to see “spillover” infections to humans. In other words, the virus keeps jumping from animal to human, which is bad because every time it jumps, the virus can mutate.

CDC has tallied [74 human](#) infections thus far (67 confirmed + 7 probable). However, because testing is limited, we could be missing many infections, especially the milder ones that don’t make people seek care.

People are mostly getting sick from direct exposure to sick dairy cows (44 people) or sick poultry in massive operations (23 people). Thankfully, we have not seen human-to-human transmission. The virus hasn’t mutated to do so yet.

It was only a matter of time until we saw severe cases

A new Centers for Disease Control and Prevention (CDC) study highlighted the first 46 human case of H5N1 in 2024: The report looked at A new CDC report published in the New England Journal of Medicine looked at H5N1 bird flu in the United States from March 2024 to October 2024. These cases primarily occurred in adults exposed to infected poultry or dairy cows; 93% had conjunctivitis (eye redness), 49% fever, and 36% respiratory symptoms. No person-to-person spread was identified.

https://www.nejm.org/doi/full/10.1056/NEJMoa2414610?ACSTrackingID=USCDC_7_3-DM143450&ACSTrackingLabel=A%20New%20CDC%20Study%20Highlights%20First%2046%20US%20Human%20Cases%20of%20H5N1%20Bird%20Flu%20in%202024&deliveryName=USCDC_7_3-DM143450

Out of the 74 known American H5N1 cases, there have been two severe cases:

1. **Louisiana:** Older adult; infected from their backyard poultry. This patient died.
2. **Missouri:** Older adult; it’s unknown how they got infected.

Notably, there has also been a severe case among a teenager in Canada who was fighting for their life. (A recent [NEJM case study](#) described how severely sick she was.)

Why are experts so concerned?

There are a few reasons for the continued anxiety:

1. **Low probability, high consequence event.** The probability of a pandemic in any given year is **2%**. Spillovers happen all the time, but very few become pandemics because many unlucky things must occur in sequence. The situation unfolding with H5N1 has increased the probability.
2. **It’s flu season.** If the same person is infected with seasonal influenza, H5N1 could “swap” genes, causing a mutation that sends human-to-human transmission.



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3. **New mutations.** The Louisiana patient developed new H5N1 mutations, which increased its ability to bind human cells. This isn't surprising (viruses change) but shows what the virus can do.
4. **Lack of urgency** in the U.S. government, particularly USDA. The time to stop a pandemic is now, and it needs to be stopped at the source—that's animals. This is USDA's lane, but priorities, agility, experience, and politics differ from those of the agencies dealing with human health. We are *still* flying blind. The Department of Health and Human Services (HHS) finally **allocated** \$306 million to bolster the nation's human preparedness for H5N1, including giving \$183 million to regional, state, and local programs.
5. **Unanswered questions.** Of course, like with any outbreak, there are endless questions: *Do these severe cases have a more severe strain than others? What is causing the H5N1 spikes in wastewater? Will the stockpile of vaccines be effective?*

Specific Guidance

What is Bird Flu?

Bird flu, also known as avian influenza A (H5N1) or highly pathogenic avian influenza (HPAI), is caused by a virus that can cause serious illness and death in birds and mammals. Human infections with bird flu viruses are rare, but they can happen when the virus gets into a person's eyes, nose, mouth, or when inhaled.

What are the symptoms of bird flu in humans?

- Eye redness or discharge.
- Cough.
- Sore throat.
- Runny or stuffy nose.
- Diarrhea.
- Vomiting.
- Muscle or body aches.
- Headaches.
- Fatigue.
- Trouble breathing.
- Fever (100 °F or higher).
- Pneumonia.
- Seizures



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Who is at higher risk of getting bird flu?

You are at higher risk if you work with or are around poultry, dairy cows, alpacas, wildlife or raw (unpasteurized) milk. This includes any contact with animal fluids, feces, or feathers.

Examples of those at higher risk include:

Farmworkers who:

- Work with dairy cows.
- Work with poultry.
- Handle raw dairy products.
- Work in slaughterhouses.
- Work in hatcheries.

Wildlife Workers:

- Wildlife rehabilitation center staff and volunteers.
- Veterinary clinic staff.
- Pest management and animal removal personnel.
- Animal control officers and shelter staff.
- Zoo staff and volunteers.

How does bird flu spread?

It spreads from sick cows, birds, or other infected animals to people by:

- Breathing in dust or droplets with the virus.
- Splashing raw milk from an infected cow in your eyes, nose or mouth.
- Touching your eyes, nose or mouth with unwashed hands after:
 - Touching raw milk, cow or bird feces, or other contaminated items or surfaces.
 - Handling sick or dead animals infected with the virus.
- Drinking raw milk.



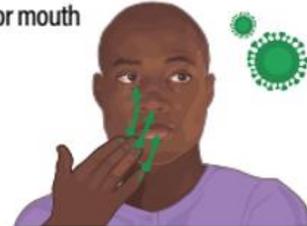
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H5N1 Bird Flu Might Spread from Cows to People in Several Ways



If you touch something contaminated with live virus and then touch your eyes, nose, or mouth



If a liquid contaminated with live virus splashes into your eyes (like raw milk from an infected cow, for example)



If you eat, drink, or inhale droplets contaminated with live virus



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How do I avoid getting bird flu?

- **Avoid contact with infected animals.** Avoid direct contact with birds and other animals that could be infected with bird flu. Wild birds can be infected with bird flu even if they don't look sick.
- **Get the seasonal flu vaccine.** CDPH recommends that all Californians, especially workers at risk for exposure to bird flu, receive a seasonal flu vaccine. While the seasonal flu vaccine will not protect against bird flu, getting vaccinated can lower the risk of being infected with both seasonal flu and bird flu at the same time. Getting vaccinated also reduces the chance of severe illness from seasonal flu.



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- **Only consume pasteurized dairy products.** The bird flu virus can be present in raw, unpasteurized milk. Unpasteurized milk may contain other germs that can make you sick. Do not touch or consume raw milk or raw milk products. Pasteurized milk and dairy foods are safe to eat.
- **Take precautions if you have a backyard flock:** Keep birds separate from other animals (like pets and livestock). Avoid kissing or putting birds near your face. Wash your hands before and after contact with your birds. Do not touch sick or dead birds without PPE. Contact your vet or local animal control if you notice illness or sudden death. For more information, visit [California Department of Food and Agriculture's Animal Health Branch](https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Bird-Flu.aspx).

More Information About Bird Flu

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Bird-Flu.aspx>

<https://www.cdc.gov/bird-flu/site.html#gen>

https://open.substack.com/pub/insidemedicine/p/how-likely-is-a-bird-flu-pandemic?r=3anbwt&utm_campaign=post&utm_medium=email



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