Risk Assessment

HPAI A(H5) In the United States

Summary: HPAI A(H5) Scenario-Based Human Health Risk Assessment for the US
Published November 2, 2026

Currently, the Center for Outbreak Response Innovation (CORI) judges that the HPAI A(H5) situation in the US is within Scenario 3, *meaning that there are sporadic human cases, but no reported human-to-human transmission.*

Yakima Health District (YHD) reported on November 1 that a Yakima County resident who tested positive for avian influenza had developed severe symptoms, was hospitalized, and died. YHD has reported a total of three human cases as a result of exposure to infected cattle at the Yakima County dairy, and continues to monitor contacts.[1,2,3] The Yakima County death and most recent cases are not yet reflected on CDC's website.[3] Overall, infections in commercial poultry[4] over the past 30 days now exceed 2.5 million, while 39 new infected cattle herds have been reported in the last 30 days.[5] At the same time, bird flu continues to spread at a mink farm in Utah, where health officials have agreed with the Utah Department of Agriculture and Food to no longer monitor farm workers' health unless there is evidence of human-to-human transmission. More agricultural outbreaks are expected as infected wild birds migrate south, increasing the risk of additional human cases.[7]

See the detailed risk assessment beginning on the next page.

	Risk to people in regular contact with affected animals*	Risk to close contacts** of people in contact with animals	Risk to healthcare workers	Risk to the US general public
Scenario 3 – Sporadic human cases, no human-to-human transmission	**Moderate**	**Low**	**Low**	**Low**

*This includes farmworkers (defined as individuals who conduct work on agricultural farms and come into contact with animals or animal materials [e.g., feces, bedding, milk, meat]), veterinarians (defined as individuals who practice veterinary medicine and come into contact with animals that may be infected with bird flu), and backyard flock owners (defined as individuals who maintain one or more poultry, typically chickens or ducks, on their personal property). **Close contacts include household members and people who have regular close contact with the affected individuals.

Our **confidence** in these risk scores is **low**, supported by bulk milk testing and H5 wastewater surveillance[6,8] but tempered by limited access to human H5 testing, increasing evidence of underreporting of symptoms among farmworkers, and reduced monitoring of farm workers.[9,10] To protect human health, CORI recommends:

- Promoting farmworker protection by ensuring the use of appropriate personal protective equipment (PPE) when handling animals or animal products
- Limiting the risk of reassortment with seasonal influenza by seeking appropriate flu vaccination, especially for farmworkers

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Highly Pathogenic Avian Influenza A(H5) Scenario-Based Risk Assessment for the United States

Center for Outbreak Response Innovation (CORI)

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Background

Highly Pathogenic Avian Influenza (HPAI) A(H5) is a bird flu virus that has driven a persistent global outbreak since 2020, fueled by a newer viral lineage of H5N1 (clade 2.3.4.4b) that spreads efficiently among wild birds.[11] The virus has caused mass die-offs in wild birds across all seven continents and has increasingly spilled over into mammals worldwide, including foxes and seals, and, since March 2024, US dairy cattle, raising concern about its pandemic potential.[11,12,13] Human infections remain rare globally and have so far been tied to direct contact with infected animals, with no sustained human-to-human transmission reported.[13,14]

In the United States, the virus has been detected in wild birds, commercial poultry and backyard flocks, dairy cattle, and other agricultural animals, each a distinct pathway for potential human exposure.[4,5,7] H5N1 currently requires close contact with infected animals or their products to infect people and does not spread easily through the air the way seasonal flu does.[15] Farmworkers, veterinarians, and backyard flock owners face the highest occupational risk, with household members and other close contacts representing a secondary tier of potential exposure.

Since the most recent US outbreak began in early 2024, there have been at least 70 human H5 cases, including 3 deaths.[1,3] The most recent human infections occurred in Washington state in October 2026[1,2] and November 2025.[16]

Current Risk Assessment

Currently, the Center for Outbreak Response Innovation (CORI) judges that the HPAI A(H5) situation in the US is within Scenario 3, *meaning that there are sporadic human cases, but no reported human-to-human transmission.*

Individuals in regular contact with affected animal populations (farmworkers, veterinarians, and backyard flock owners) remain at higher risk than the general population. The likelihood of widespread human infection is low, and population health consequences are currently low.

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HPAI A(H5) In the United States

Our confidence in these risk scores is low given the current level of available information, including surveillance data and known transmission dynamics. This confidence is supported by the expanded adoption of bulk milk testing and H5 wastewater surveillance,[6,8] both of which provide a more comprehensive national picture than was available a year ago. However, there is increasing evidence that the most at-risk populations, particularly farmworkers, are not being adequately monitored or given access to testing, in part because of increased marginalization driven by changes in immigration enforcement policy,[9] and in part because of economic and political incentives to ignore animal and human symptoms.[10]

CORI is continuing to monitor and adapt this risk assessment to the evolving HPAI A(H5) situation in the US. Factors that may contribute to a change in this assessment include new human infections, evidence of human-to-human transmission, detection of mutations associated with enhanced mammalian adaptation (e.g., in the PB2 gene), spillover into swine populations, or a sharp increase in animal detections beyond current trends.

HPAI A(H5) Human Health Risk Assessment Scenario Table

	Risk to people in regular contact with affected animals*	Risk to close contacts** of people in contact with animals	Risk to healthcare workers	Risk to the US general public
Scenario 1 – No or minimal spread in agricultural and/or domestic animals	**Low**	**Low**	**Low**	**Low**
Scenario 2 – Moderate or widespread animal transmission, no human cases	**Low-Moderate**	**Low**	**Low**	**Low**
Scenario 3 – Sporadic human cases, no human-to-human transmission	**Moderate**	**Low**	**Low**	**Low**
Scenario 4 – Increasing human infections, no confirmed human-to-human transmission	**Moderate-High**	**Low-Moderate**	**Low-Moderate**	**Low**
Scenario 5 – Increasing human infections, limited human-to-human transmission	**High**	**Moderate-High**	**Moderate**	**Low-Moderate**
Scenario 6 – Efficient human-to-human transmission	**High**	**High**	**High**	**High**

*This includes farmworkers (defined as individuals who conduct work on agricultural farms and come into contact with animals or animal materials [e.g., feces, bedding, milk, meat]), veterinarians (defined as individuals who practice veterinary medicine and come into contact with animals that may be infected with bird flu), and backyard flock owners (defined as individuals who maintain one or

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more poultry, typically chickens or ducks, on their personal property). **Close contacts include household members and people who have regular close contact with the affected individuals.

Recommended Actions

To decrease the risk to human health in the current situation, CORI recommends:

- Promoting farmworker protection by ensuring the use of appropriate personal protective equipment (PPE) when handling animals or animal products
- Limiting exposure to infected food material by only consuming pasteurized dairy products
- Limiting the risk of reassortment with seasonal influenza by seeking appropriate flu vaccination, especially for farmworkers

Methods

Risk assessment can be very helpful in times of significant uncertainty because it enables structured consideration of complex scenarios, likelihoods, and consequences to inform decisions around policy and operational action, as well as implementation of protective measures and future planning for worst-case scenarios. It is important not to wait for perfect information to estimate potential risk, because decisions must be made even in the absence of plentiful data.

Therefore, the Center for Outbreak Response Innovation (CORI) conducted a scenario-based risk assessment to consider human health risks both now and in potential future scenarios.

The purpose of this document is to consider possible future developments in this outbreak and describe corresponding risks to human populations should a given scenario occur. A risk score is determined for each key population across the scenarios.

Risk scores are evaluated on a five-point scale, with scores of low, low-moderate, moderate, moderate-high, and high. The confidence in each of these risk level assignments is based on the breadth, depth, and quality of information available. The overall confidence of each risk score determination is based on a three-point scale, which includes low, moderate, and high.

In each scenario, we consider the risk to four distinct populations: people in regular contact with affected animal populations (e.g., farmworkers, veterinarians, backyard flock owners), close contacts of those individuals, healthcare workers, and the general public.

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In determining these risks, we consider several factors, including transmission pathways, animal-to-human transmission dynamics, morbidity and mortality rates, the outbreak's current status, and potential events that could exacerbate the situation. Additionally, the assessment considers the effectiveness of preventive measures, ongoing response operations, and political factors that may influence the outbreak's progression.

Scenario Details:

***Please note:** We are evaluating the risks to human health should each scenario occur, **not** the relative risk of any one scenario occurring.

Scenario 1 – No or minimal spread in agricultural and/or domestic animals: In this scenario, the virus is predominantly infecting wild animals and there is either no or minimal transmission to agricultural and/or domestic animals. Reports of infections in agricultural or domestic animals are due to sporadic spillover events from the natural reservoir and/or other wild animals. Examples may include occasional HPAI detections in cattle or poultry, or sporadic reports of feline infections from contaminated food. These events are relatively contained and there is limited or no sustained transmission in the affected animal populations. These spillover events present opportunities for the virus to more easily infect, replicate, and become transmissible to new animal populations. The likelihood of widespread human infections remains low.

Scenario 2 – Moderate or widespread transmission in agricultural and/or domestic animals, no human infections: In this scenario, moderate or widespread transmission occurs in agricultural and/or domestic animals with no reported human infections and no human-to-human transmission. The virus may begin to infect swine or other animal species, which could facilitate the mixing and spreading of influenza viruses. Mutations allowing the virus to more easily infect, replicate, and become transmissible among the affected animal populations are expected. Individuals in regular contact with affected animal populations—such as farmworkers, veterinarians, and backyard flock owners—are at higher risk than the general population. The likelihood of widespread human infections remains low.

Scenario 3 – Sporadic human cases from animal exposures, no confirmed human-to-human transmission: In this scenario, transmission in wild, agricultural, and/or domestic animals leads to sporadic reports of human cases, but there are no reports of human-to-human transmission. The risk to people in contact with

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affected animal populations has increased, but the risk to other populations remains low.

Scenario 4 – Increasing reports of human infections, no confirmed human-to-human transmission: In this scenario, increasing reports of human infections mean there is increased potential for reassortment (the exchange of gene segments between influenza viruses) and human adaptation, but still no human-to-human transmission. As human infections become more common, this increases the likelihood that the virus reassorts with other influenza viruses and better adapts to humans. Although the opportunities for reassortment are present, there are no specific mutations, or laboratory or epidemiological evidence to indicate that the virus has adapted for human-to-human transmission. Initial human-to-human transmission may begin to occur at limited rates before being officially detected and confirmed. For the first time, the risk has increased for close contacts of people in regular contact with affected animal populations as well as healthcare workers. The risk to the general public remains low.

Scenario 5 – Increasing reports of human infections, limited human-to-human transmission: In this scenario, there is continued potential for reassortment, increasing reports of human infections, and limited human-to-human transmission between close contacts. There are more reports of human infections due to contact with infected animals like cattle, swine, poultry, or others. Limited human-to-human transmission is reported among close contacts of infected individuals, including healthcare workers, but there is no efficient human-to-human transmission. For the first time, the risk to the general public increases. The population health consequences and the relative risk of a pandemic have increased.

Scenario 6 – Efficient human-to-human transmission: In this scenario, there are reports of efficient human-to-human transmission. The likelihood of human infections is high because the virus now transmits efficiently and will be very difficult to contain. Population health consequences are high. Overall risk is high for all populations. The likelihood of a pandemic is very high.

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