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the next pandemic

2022
2025

Inside the devastating influenza outbreak years ago—and how scientists are trying to stop it from happening again

What Can We Learn from the 2014-2015 Bird Flu Outbreak?

By Jimin Lee



Figure 1. *A veterinarian carries out PCR tests on chickens in a far.* Photograph by Thibaud Moritz. Published in *BU Today*. <https://www.bu.edu/articles/2023/bird-flu-doesnt-threaten-a-pandemic-yet/>.

The ongoing bird flu outbreak is receiving nationwide attention. Its impact is widespread, affecting day-to-day lives of people in the United States. One notable consequence is the egg prices. Despite the current administration's claim that egg prices will decrease, the average retail price of dozen large eggs reached a new record-high of \$6.23 in March. The egg prices continue to vary depending on the location of recent bird flu outbreaks (Funk and Durbin 2025). Meanwhile, concerns about the pandemic potential of the bird flu outbreak are dominating news headlines. Having lived through the

COVID-19 pandemic and the pain it caused, the possibility of having another pandemic in our lifetime is a source of deep unease. As key stakeholders in this crisis, the public desperately needs an effective plan of attack on the outbreak from the government.

Recent statements from U.S. Secretary of Health and Human Services, Robert F. Kennedy, Jr., however, raises concerns about the administration's preparedness for the outbreak. Let the bird flu spread through flocks, he said, during his interview with Fox News. Kennedy suggested that farmers "identify the birds and

preserve the birds that are immune to it.” Poultry experts strongly disagree with his statement. They argue that his method will cause an unimaginable death toll. “The Chick-fil-A’s and the Kentucky Fried Chickens and all the chicken dinners you have, forget it,” says Rocio Crespo, a poultry veterinarian at the North Carolina State University College of Veterinary Medicine. (Pappas 2025).

Fortunately, Kennedy does not represent the entire administration. In February 2025, U.S. Secretary of Agriculture, Brooke Rollins, announced a \$1 billion-dollar investment in efforts to put the outbreak in control, protect the U.S. poultry industry, and lower egg prices. While it is reassuring that the administration is taking steps to address the outbreak, it is still difficult to state what to expect in the coming months or even years. Will the investment target all underlying issues that have led to the current outbreak? Will more issues emerge? In the face of uncertain future, we look back in history.

History repeats itself. It is a familiar cliché, but is greatly applicable to the context of bird flu. Bird flu is a reoccurring phenomenon. In fact, the current bird flu is not the first that has ever occurred in the U.S. Bird flu outbreaks occurred in 1924, 1983, 2004, and 2014-2015 (Newton and Kuethe 2015). Although comprehensive data for the current outbreak is not yet available, U.S. Department of Agriculture (USDA) has published extensive statistics on the 2014-2015 outbreak, offering a valuable point of comparison. By examining similarities and differences between the two outbreaks, we can start to see patterns from the 2014-2015 outbreak that may be emerging, or are likely to emerge today.

How did the outbreaks spread?



Figure 2. *Bar-tailed godwits flying in Alaska.* Photograph by Daniel R. Ruthrauff, September 5, 2008. Published in *U.S. Geological Survey*. <https://www.usgs.gov/media/images/bar-tailed-godwits-flying-over-mudflats-near-cape-avinof-alaska>.

The early spread of bird flu largely depends on the movement of wild aquatic birds, especially ducks, geese, gulls, and shorebirds. This is because they naturally carry low pathogenic avian influenza viruses (LPAI). While LPAI are not fatal to poultry, they can mutate into highly pathogenic avian influenza viruses (HPAI). Unlike LPAI, HPAI cause mortality rates of 75-100%, often within 48 hours, in poultry. Domestic poultry can get infected with HPAI through direct contact with the wild aquatic birds or exposure to their secretions (Centers for Disease 2025).

In both outbreaks, wild aquatic bird movements were identified as the starting point. For example, in December 2014, HPAI was detected in a wild waterfowl in the state of Washington. In December 2021, HPAI was detected in a wild dabbling duck in South Carolina (National Wildlife 2025; Sleeman 2022, 1). Following the detections of HPAI in wild birds, reported cases of HPAI in poultry quickly rose across the country.

What Are Avian Influenza Viruses?

Avian influenza viruses are a subset of influenza A viruses. Influenza A viruses are categorized into different subtypes, which affect various species of birds and mammals, as illustrated in Figure 3. The circular arrows indicate that the subtypes inside the circle are endemic, or are consistently present, in the species. For example, H1, H2, and H3 subtypes are endemic in humans, which is why we experience seasonal flu. Likewise, H1 through H16 subtypes, which are LPAI, are endemic in wild birds. The straight arrows indicate that the subtypes can cross species. In the case of birds, for instance, H1 through H11 and H13 subtypes can cross from wild birds to domestic poultry. When domestic poultry is repeatedly exposed to LPAI, LPAI can become endemic in domestic poultry, although it has yet to happen in the United States (Harvey et al. 2023). In addition, H5 through H7, H9, and H10 subtypes can cross from domestic poultry to humans (Short et al. 2015).

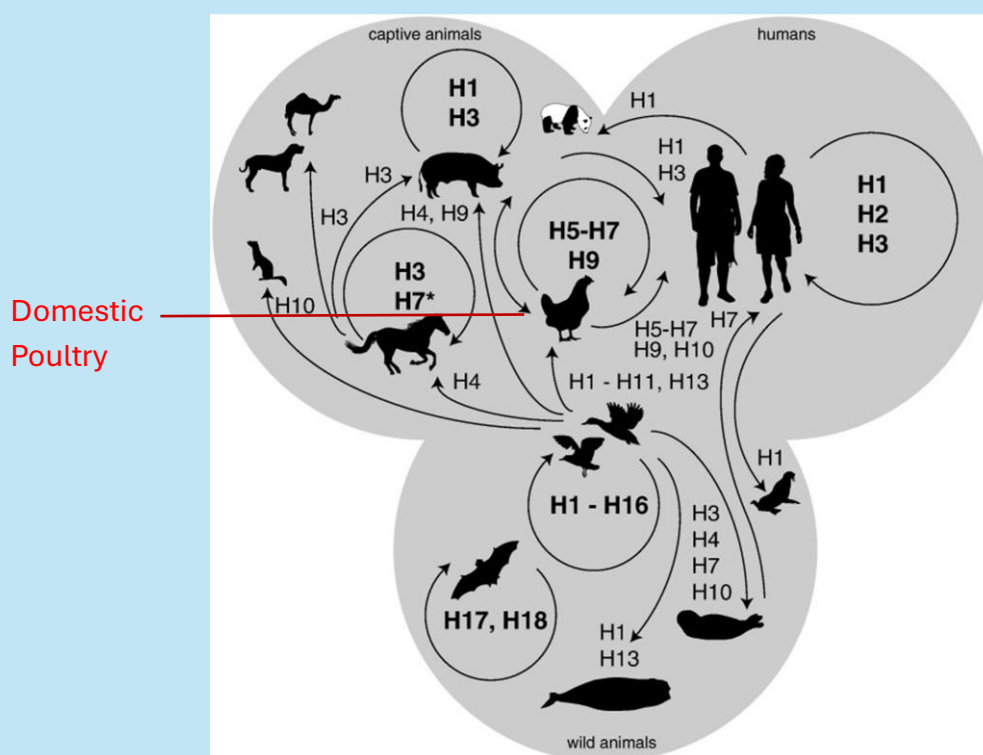


Figure 3. *Endemic Subtypes of Influenza A Viruses in Mammalian Species and Inter-Species Transmissions*. Figure by Kirsty R. Short et al. Published in *One Health*, March 26, 2025. <https://doi.org/10.1016/j.onehlt.2015.03.001>.

Certain LPAI can mutate into HPAI. In the United States, H5 and H7 subtypes have historically been the primary sources of such mutation (U.S. Department of Agriculture 2017, 1). However, during both the 2014–2015 outbreak and the current outbreak, the H5 subtype has been the dominant contributor. To differentiate between these outbreaks, H5 must be further categorized into strains, which are subdivisions within the broader subtype classification. In the 2014–2015 outbreak, two H5 strains were circulating: H5N8 and H5N2. In contrast, the current outbreak has been driven primarily by the H5N1 strain (U.S. Department of Agriculture 2016, 2; Harvey et al. 2023).

Although both outbreaks began with HPAI detections in wild birds, their progressions took distinct paths. During the 2014-2015 outbreak, H5N8 strain started spreading slowly across multiple states. The outbreak significantly gained momentum with the introduction of H5N2 strain in commercial flocks in April 2015. The outbreak soon swept through the Upper Midwest, affecting 188 of the 211 total commercial flocks in the region (U.S. Department of Agriculture 2016, 6). The rapid spread across the Upper Midwest was attributed to farm-to-farm transmission, associated with the movement of personnel, equipment, and other materials (U.S. Department of Agriculture 2022a, 17).



Figure 4. *Group of Chickens*. Published in *The Centers for Disease Control and Prevention*. Accessed April 25, 2025. <https://www.cdc.gov/bird-flu/about/index.html>.

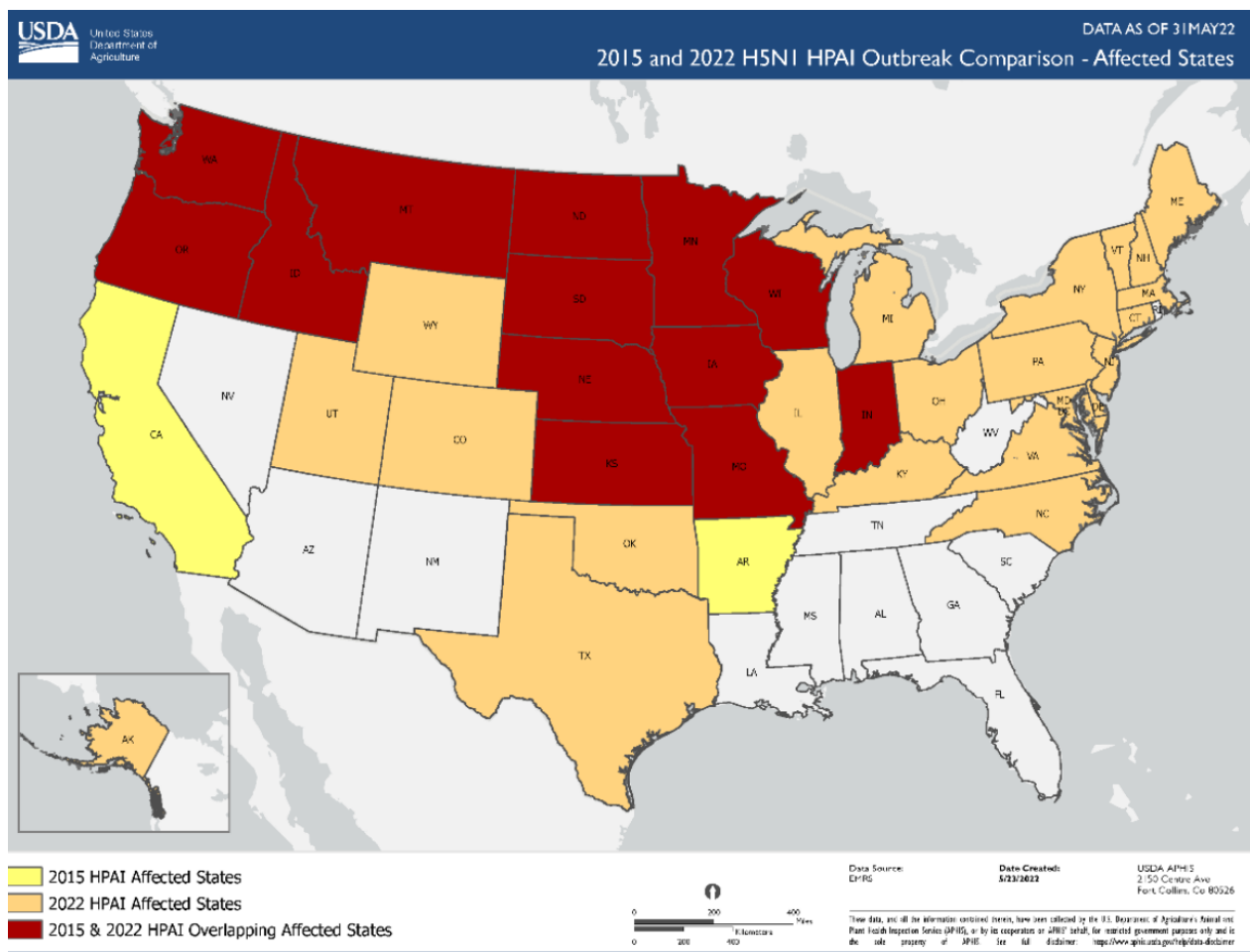


Figure 5. States Affected by Bird Flu in 2015 and 2022. Figure by U.S. Department of Agriculture. Published in *Epidemiologic and Other Analyses of HPAI-Affected Poultry Flocks: July 1, 2022*, page 17. <https://www.aphis.usda.gov/sites/default/files/epi-analyses-hpai-poultry-july2022.pdf>.

The current outbreak also began slowly, but covered a wider geographic area since the start. Figure 5 compares the states affected by bird flu outbreaks in 2015 and in 2022. The states colored red were affected in both years, the states colored yellow were only affected in 2015, and the states colored light orange were affected only in 2022. More states were affected in 2022 than in 2015. Nevertheless, its wide geographic coverage was due the migration pattern of wild birds not farm-to-farm transmission. Different species of wild aquatic birds carried H5N1 to different states around the same time (U.S. Department of Agriculture 2022a, 17).



Figure 6. *Dairy cattle in a farm*. Photograph by Rodrigo Abd. Published in *Science*, March 2024. <https://www.science.org/content/article/bird-flu-discovered-u-s-dairy-cows-disturbing>.

In the later stages, interstate transmissions sped up the outbreak. How did this happen? In 2024, first cases of bird flu transmission to dairy cattle were reported. Because bird flu had never been found in cattle before and the symptoms of bird flu in cattle are nonspecific, infected dairy cattle were moved across states (Cohen 2024).

As a result, the current outbreak has so far affected every state, as shown in Figure 7. Unlike in 2022, whose wide geographic coverage was caused by the migration pattern of wild aquatic birds, the current wide geographic coverage can be attributed to the interstate transmissions.

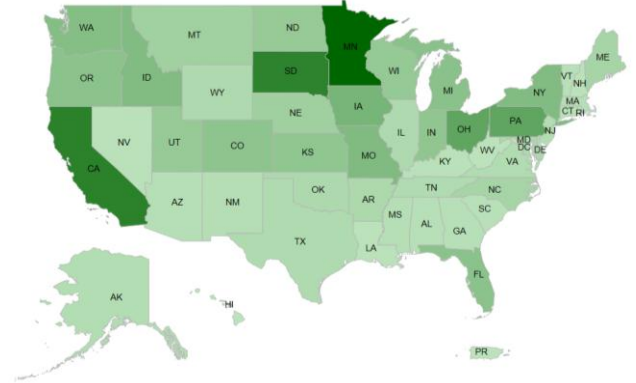


Figure 7: *States Affected by Bird Flu by April 24, 2025*. Figure by U.S. Department of Agriculture. Accessed April 25, 2025.

<https://www.aphis.usda.gov/livestock-poultry-disease/avian/avian-influenza/hpai-detections/commercial-backyard-flocks>.

The interstate movement of infected cows did not only affect cows. With H5N1 strain found in raw milk, it increased the number of possible transmitted routes of bird flu to poultry, leading to farm-to-farm transmissions; humans transporting raw milk and contaminated milking equipments are some examples (Kaylegian 2024). Figure 8 illustrates that following the bird-to-cow transmission, the number of bird flu detections in poultry soared. While the number of bird flu detections remained relatively constant between late 2022 and early 2024, the number almost tripled in December 2024, compared to in September 2022 .

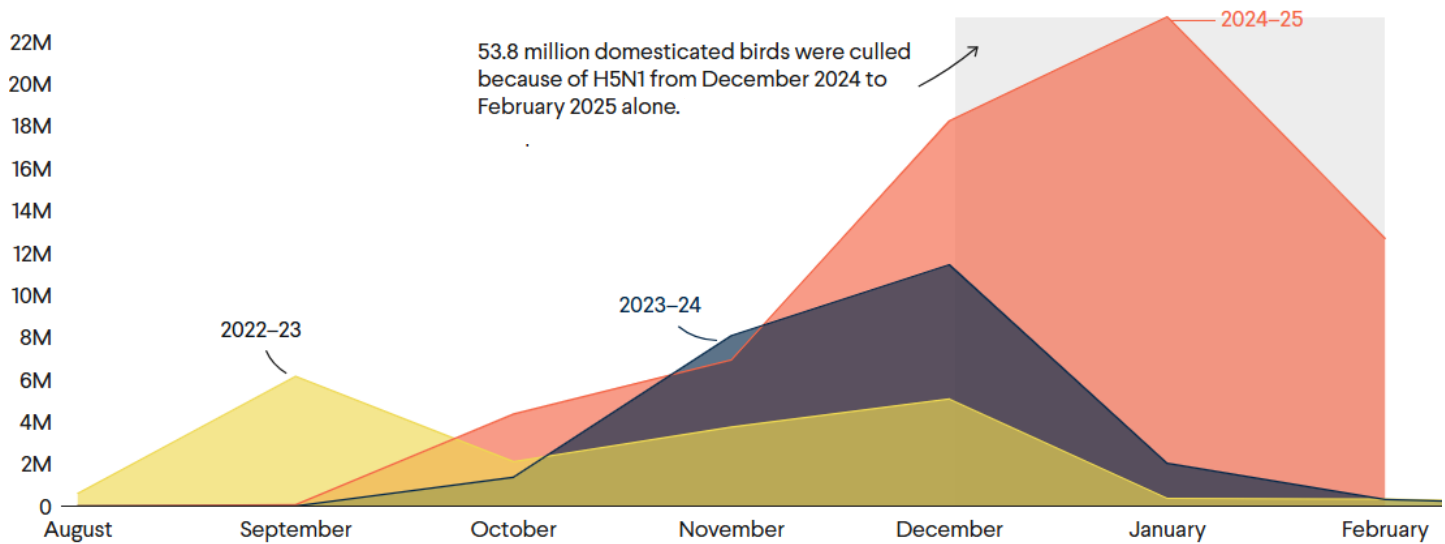


Figure 8: *H5N1* detections in poultry from December 2022 through February 2025. Figure by Nsikan Akpan and Allison Krugman. Published in *ThinkGlobalHealth*, March 12, 2025.

<https://www.thinkglobalhealth.org/article/us-egg-prices-see-largest-jump-1980-bird-flu-outbreaks-continue>.

The 2014-2015 and current outbreaks followed different trajectories, but reveal similar insights. Both outbreaks began with HPAI detections in wild birds, which highlights the importance of HPAI surveillance in the wild. Although wild birds are the natural source of avian influenza viruses, the rapid spread of outbreaks was achieved mainly through interstate and farm-to-farm transmissions. When avian influenza viruses are carried across states, multiple sources—animals, personnel, equipments, and animal products, such as milk—can act as transmission pathways across farms.

The comparison of both outbreaks suggest that bird flu can be put under control. In the 2014-2015 outbreak, bird flu spread rapidly among commercial flocks in the Upper Midwest. Although the current outbreak also began in commercial flocks, it did not spread as fast. The slower spread at the onset of the current outbreak suggests that in 2022, commercial flock owners adhered more strictly to bird flu prevention measures, such as reducing

movement of personnel and equipment between farm, than they did toward the end of the 2014-2015 outbreak.

What Are the Impacts of the Current Outbreak?



Figure 9. *Commercial poultry farm*. Published in *Penn State Extension*, updated June 8, 2023.

<https://extension.psu.edu/commerical-poultry-industry>.

The scale of the current outbreak is almost double the scale of the 2014-2015 outbreak. While roughly 50 million poultry were

lost in the 2014-2015 outbreak, since February 2022, at least 168.33 million birds have been affected, meaning they tested positive for H5N1, were exposed to H5N1, or were culled (U.S. Department of Agriculture 2016, 46; U.S. Department of Agriculture n.d.-a). Given the high mortality rate among birds affected by bird flu, the number of birds lost in the current outbreak likely approaches 168.33 million. This has been devastating for poultry owners (Wells 2025).

Greg Herbruck is the CEO of Herbruck's Poultry Ranch, one of the largest poultry business in the U.S. When he had to cull 6.5 million of his birds, his team members broke down in tears (Wells 2025).

"The mental toll on our team of dealing with that many dead chickens is just, I mean, you can't imagine it," Herbruck said. "I didn't sleep. Our team didn't sleep" (Wells 2025).

Marty Thomas owns Kakadoodle Farm, a small business with 3,000 hens. Her farm was also affected by bird flu. After USDA depopulated her chickens that tested positive for H5N1, Marty and her family buried the depopulated chickens and wept in front of their graves. Since the depopulation, her family has also been experiencing financial troubles and relying on their GoFundMe campaign.

"We're at the bottom of our barrel," Marty said. "If this doesn't work, we're out our entire life savings" (Khim 2025).



Figure 10. *Signs limit the number of cartons of eggs a customer can purchase at a grocery store.* Photograph by Brian Snyder. Published in *ThinkGlobalHealth*, March 12, 2025. <https://www.thinkglobalhealth.org/article/us-egg-prices-see-largest-jump-1980-bird-flu-outbreaks-continue>

The poultry owners are not the only ones deeply unsettled by the bird flu outbreak. Since the start of the current outbreak, egg supplies have been low and egg prices have been on the rise, limiting the general public's access to the staple food. For example, Trader Joe's stores across the country have been limiting the number of egg each customer can purchase and breakfast chains like Waffle House have added a surcharge of 50 cents for eggs (McCarthy 2025; Gammon 2025). The 'eggflation' has even sent grocery shoppers in the United States to Mexico (Gammon 2025).

While rising egg prices broadly affect the general public, it also aggravates the existing social inequities. David Ortega, the Noel W. Stuckman Chair in Food Economics & Policy at Michigan State University, underscores this point.

"It's really low-income households that bear the brunt of any [egg] price increases because they spend a significant higher portion of their disposable income on food," said David (Akpan 2025).

Given the negative impacts of low food security, how do the egg prices today compare to 2014-2015? Figure 11 shows the average prices of dozen large grade-A eggs from 1980 to 2025. The prices are not adjusted for inflation, and recession periods are marked in gray. From the figure, it is clear that the average egg price in 2025 is the highest recorded in the past 45 years. During the 2014-2015 outbreak, the average egg price peaked around \$3 per dozen. In contrast,

the average price in 2025 have nearly doubled. The figure also marks the arrival of D1.1, which is characteristic of the H5N1 strain found in dairy cattle (U.S. Department of Agriculture 2025a). It was previously noted that current outbreak

worsened after the bird-to-cow transmission. In line with the trend, the average egg price reached the highest in 2025 following the detection of bird flu cases in dairy cattle.

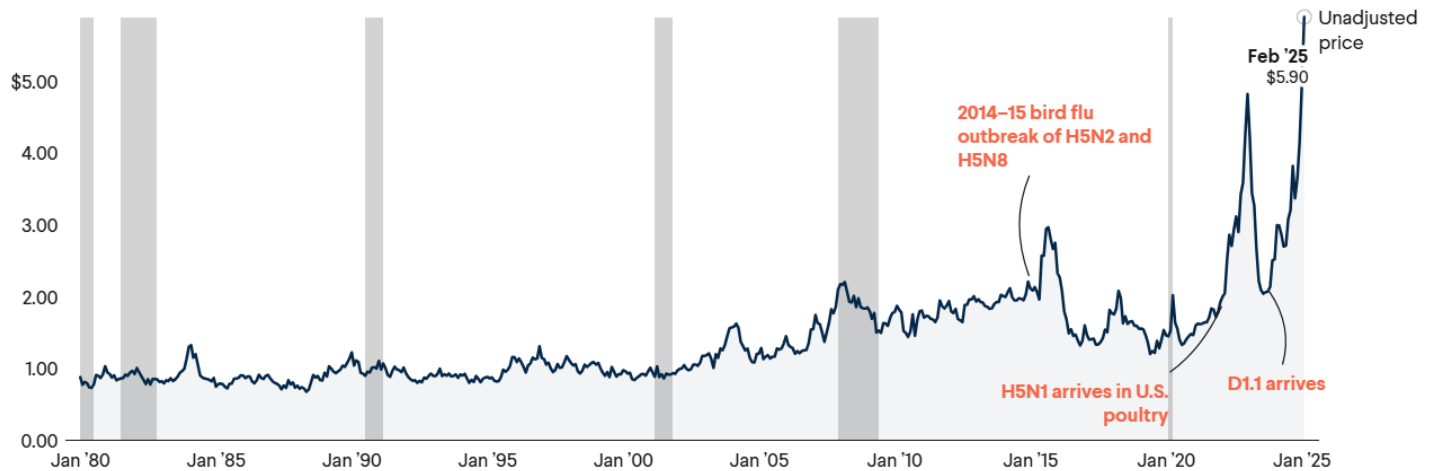


Figure 11. *Average Egg Prices from 1980 to 2025*. Figure by Nsikan Akpan and Allison Krugman. Published in *ThinkGlobalHealth*, March 12, 2025. <https://www.thinkglobalhealth.org/article/us-egg-prices-see-largest-jump-1980-bird-flu-outbreaks-continue>. Note: Recessions are marked in gray.

Another significant impact of the current outbreak is public's growing fear that it could cause human-to-human transmission and evolve into a future pandemic. The concern stems from the ability of influenza A viruses to mutate easily and infect different species of birds and mammals. These abilities allow avian influenza viruses to reassort, or in other words mix genetic materials of the multiple species, which can generate new strains that are better at infecting humans (Kupferschmidt 2024).

In the current outbreak, transmissions of bird flu have expanded to new mammalian species. For example, since 2022, bird flu has been observed in foxes, seals, cats, and more (U.S. Department of Agriculture n.d.-b). In the 2014-2015 outbreak, however, there were no documented cases of bird flu in mammal (Centers for Disease n.d.-a). This suggests that avian influenza viruses are getting better at

adapting to mammalian hosts, including humans. In fact, a recent study found that H5N1 strain in dairy cattle was one mutation away from binding more effectively to human cells (Young 2024).

At the current point in time, CDC believes the risk of human-to-human transmission of bird flu is low (Centers for Disease n.d.-b). To their defense, the majority of the human infections of bird flu during the current outbreak were among farm workers who had high exposure to the H5N1 strain (Young 2024). Nevertheless, scientists warn that the longer the current outbreak persists, the higher the risk of a new pandemic gets (Whitaker 2025).

What Challenges Were Overcome?

The U.S. Department of Agriculture (USDA) has tackled challenges of managing personnel, improving measures for eradicating bird flu and enforcing biosecurity since the 2014-2015 outbreak.

1. Personnel



Figure 12. *Health workers pack dead chickens into trash bins.* Photograph by Tyrone Siu. Published in *ThinkGlobalHealth*, March 12, 2025. <https://www.thinkglobalhealth.org/article/us-egg-prices-see-largest-jump-1980-bird-flu-outbreaks-continue>.

At the start of the outbreak, USDA deployed over 3,000 personnel to facilitate poultry owners in managing their infected poultry. These personnel included established teams within USDA, such as the National Incident Management Team (NIMT) (U.S. Department of Agriculture 2016, 47). However, in the later stages of the outbreak, USDA realized that they need more personnel to respond to the rapidly spreading cases of bird flu. To address this, USDA employed 3,000 additional contractors to assist their ongoing efforts (Greene 2015, 15). By June 2015, at the peak of the outbreak, over 3,400 personnel were engaged (U.S. Department of Agriculture 2016, 11).

However, USDA was not ready to take on the significant number of contractors. The major issue stemmed from the lack of a standardized system for monitoring contractors. During the 2014-2015 outbreak, contractors did not receive the level of training they would have under normal circumstances due to the fully occupied staff. This heightened the need to have overseers from USDA. Yet, without a standardized system, there was no clear accountability in overseeing contractors, leaving them to their own hands (Zack 2016, 24; Greene, 2015, 15).

The oversight gap led to inconsistencies in responses given to poultry owners. USDA had a rotational system in 2014-2015 where it deployed personnel to work with different farms at different times. When USDA personnel rotated with contractors, poultry owners received different responses from them, reinforcing the lack of proper training for contractors. This caused confusion among poultry owners and delayed operations (Greene 2015, 15).

Since the 2014-2015 outbreak, USDA modified its system to address the issues. It has increased the number of personnel in NIMT to mitigate the issue of insufficient personnel when needed. It plans to embed USDA personnel with each team of contractors to resolve oversight issues. In addition, it has gotten rid of the rotational system, assigning one APHIS employee to work with each farm owner dealing with an outbreak from the start to finish. Lastly, it has established more teams, such as Incident Coordination Group (ICG), to manage inter-organizational and nation-wide cooperation across responders and stakeholders (Greene, p. 15, 2015; USDA, p. 44, 2016).

2. Measures for eradicating bird flu



Figure 13. A Centers for Disease Control (CDC) scientist looks at avian influenza virus.

Photograph by James Gathany. *Reuters*, March 17, 2025.

<https://www.reuters.com/business/healthcare-pharmaceuticals/us-reported-first-outbreak-h7n9-bird-flu-farm-since-2017-woah-says-2025-03-17/>.

Whenever USDA receives a positive test result for bird flu, it follows a five-step process to eradicate the virus: quarantine, eradicate, monitor region, disinfect, and test (Greene 2015, 4). However, during the 2014-2015 outbreak, USDA experienced delays in execution of some of the steps. For example, diagnostic testing was delayed up to at least seven days due to lack of personnel (Zack 2016, 16, 21; U.S. Department of Agriculture 2016, 32). In addition, culling or depopulation was delayed due to the lack of alternative strategies when water sources were not available (Zack 2016, 16, 21).

Through trial and error, USDA has been updating its procedure for curtailing the spread of bird flu. For example, since the 2014-2015 outbreak, USDA has increased staffing for diagnostic testing and assigned contractors to acquire water locally or transport water to the infection site when immediate water sources are not available for depopulation (Zack 2016, 16,

21). Additionally, it has explicitly set a 24-48 hour depopulation goal, emphasizing speed as a critical factor in effectively halting the spread of bird flu (U.S. Department of Agriculture 2022b). In a more recent time, with the advent of bird-to-cow transmissions, USDA has announced new legal measures that limit interstate movement of lactating dairy cattle and mandate testing of raw milk nationwide in 2024 (U.S. Department of Agriculture, 2024b, 2024c).

3. Biosecurity



Figure 14. A farm in quarantines after a bird flu outbreak. Published in *The Chicago Tribune*, January 2, 2025.

<https://www.chicagotribune.com/2025/01/02/as-bird-flu-increases-officials-add-biosecurity-requirement-for-farmers-looking-for-reimbursement/>.

“We saw it coming,” said Dr. Jack Shere, associate deputy administrator at USDA in 2015. “We saw it in Washington, we saw it in Oregon. We said you better up your biosecurity; this thing is coming. And it came” (Fox 2015).

Despite the warnings from USDA, biosecurity was not strictly kept during the 2014-2015 outbreak. Among the identified transmission pathways were sharing equipment between farms, inadequate cleaning of vehicles

between farms, entry of wild birds into poultry barns, visitors to farms, short distance aerosol spread, and other biosecurity breaches (USDA 2016, 9; Greene 2015, 13).

In response, USDA collaborated with state, academic, and industry experts to develop stronger biosecurity measures during and after the 2014-2015 bird flu outbreak (Zack 2016, 18). Poultry farmers also reinforced the stronger biosecurity protocols.

“During the outbreak of HPAI in 2014 and 2015, U.S. poultry owners made great improvements to biosecurity to protect their flocks, which greatly reduced the presence of HPAI among the country’s poultry flock” said Dr. Rosemary Sifford, USDA Chief Veterinary Officer (U.S. Department of Agriculture 2024a).



Figure 15. *A farm worker wears protective coveralls and boot covers.* Published in *Poultry World*, June 7, 2016.

<https://www.poultryworld.net/health-nutrition/biosecurity-is-key-in-avian-influenza-battle/>.

In addition, USDA recently updated its indemnity program to incentivize farmers to follow biosecurity audit. Although the 2014-2015 outbreak demonstrated championing of biosecurity, some poultry farmers continued to face biosecurity challenges. To address this, USDA has made biosecurity audits mandatory

for affected farms that want to restock their poultry in order to be eligible for future compensation on that restock. It is also requiring biosecurity audits for commercial poultry farms within the “buffer zone” (minimal 7 km radius around the infected zone) (U.S. Department of Agriculture 2024a). This increases motivations for poultry farmers to closely follow biosecurity protocols endorsed by USDA.

Lastly, USDA has launched programs to strengthen biosecurity practices. The Wildlife Services division assesses risks posed by wildlife interactions at poultry farms and provide recommendations for facility repairs to mitigate those risks. The Veterinary Services division works with unaffected farm owners to review biosecurity measures, ensuring that potential gaps are addressed before bird flu is introduced (U.S. Department of Agriculture 2025c).

What Challenges Do We Face Today?



Figure 16. *A restricted access sign blocks the entrance to a quarantined section at Kakadoodle Farm.* Photograph by Jim Vondruska. Published in *NBC News*, March 21, 2025.

<https://www.nbcnews.com/news/us-news/bird-flu-kakadoodle-farm-eggs-rcna196879>.

As mentioned previously, biosecurity breaches by poultry farm owners have been happening since the 2014-2015 outbreak. While USDA is striving to address them, the concern persists.

Let's revisit the story of Marty Thomas, the owner of Kakadoodle Farm. As she was familiarizing herself with what bird flu is, she noticed that some poultry owners never reported bird flu outbreak in their farms. They didn't want the USDA to shut down and quarantine their operations (Khim 2025).



Figure 17. A farmer stands with his cows at sunrise. Photograph by Tomas Ovalle. Published in *Los Angeles Times*, November 24, 2024. <https://www.latimes.com/environment/story/2024-11-24/bird-flu-detected-in-california-raw-milk>.

Such reaction is not limited to poultry owners. Jamie Jonker, chief science officer at the National Milk Producers Federation, an organization that represents dairy farmers, mirrors the sentiment.

"There is a fear within the dairy farmer community that if they become officially listed as an affected farm, they may lose their milk market," said Jamie Jonker (Maxmen 2025).

The mistrust of federal agencies among farmers is also echoed by state officials. In response to the federal response against bird flu, Texas Agriculture Commissioner, Sid Miller,

said "It's overreach. They don't need to do that. They need to back off" (Hill, Lim, and Brown 2024).

The expressed sentiments raise cooperation concerns. To effectively eradicate bird flu outbreaks, federal agencies, including USDA, must collaborate with individual farmers and state officials. However, hen farmers mistrust the intentions of federal agencies and do not report instances of bird flu, federal agencies cannot ensure avian influenza viruses are effectively eradicated. In addition, the actions of federal agencies are limited in the scope if state officials are not in consensus with them.



Figure 18. *The United States Capitol building under a clear blue sky*. Published in *PBS News*, March 26, 2025. <https://www.pbs.org/newshour/politics/watch-live-pbs-and-npr-leaders-testify-on-federal-support-for-public-broadcasting-in-house-hearing>.

Another challenge is posed by the current funding cuts in the government, which is directly affecting USDA personnel. For example, in February 2024, USDA accidentally laid off personnel working on the bird flu outbreak and quickly reinstated their positions (U.S. Department of Agriculture 2025b).). In April 2025, Reuter reported that three out of 13 USDA

personnel involved in monitoring and controlling bird flu took the offer to take financial incentives to quit (Douglas 2025b).

As identified in the 2014-2015 outbreak, a large number of personnel is important to address the spread of bird flu. The funding cuts are, however, encouraging smaller number of personnel, which raises concerns about how well prepared USDA will be in the future.



Figure 19. A group of cows being unloaded from a truck. Published in *Beyond the Numbers*, vol. 5, no. 3, February 2016.

<https://www.bls.gov/opub/btn/volume-5/producer-prices-in-2015.htm>.

Not only that, the funding cuts are causing suspensions of federal programs aimed at improving bird flu responses. For instance, in April 2025, the U.S. Food and Drug Administration (FDA) suspended their efforts to improve its bird flu testing of milk, cheese, and pet food due to funding cuts (Douglas 2025a). These programs comprise the pillar of federal responses. With suspension of these programs, the impact of federal actions will be reduced

What Is Next for Bird Flu?

It has been over three years since the current pandemic began. Although bird flu outbreaks typically decline during the summer, this one has continued to escalate due to unexpected developments including bird-to-cow transmissions and government funding cuts (Fox 2015).

Experts warn that the outbreak poses a real risk of developing into a full-scale pandemic, with consequences even more severe than the current crisis. Recent political developments have further complicated containment efforts, highlighting the need for federal support to poultry farmers, adequate personnel to implement biosecurity measures, and cooperation among stakeholders, including state officials.

Despite these challenges, there is still reason for hope. The USDA has demonstrated consistent progress, having successfully ended the 2014–2015 outbreak through coordinated efforts. Today, scientists and policymakers continue working toward containing the current outbreak, driven by the shared goal of preventing further devastation.

"I would scorch the earth if this ends up in children deaths," said Russo, a Colorado veterinarian. "And so as a mother, as a veterinarian, as a scientist, I'm just asking you: trust us, because I will do everything in my power and there's plenty of folks behind me that will do the same, to keep this from getting to that point" (Whitaker and Chasan 2025).

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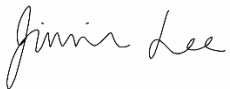
Dear Smithsonian Editor,

I am pleased to share the final copy of “What Can We Learn from the 2014–2015 Bird Flu Outbreak?” This article examines the current outbreak through a comparative lens, reflecting on the 2014–2015 outbreak, which was, at the time, an unprecedented crisis in bird flu history.

Today’s outbreak is disrupting lives—from farmers to consumers—and fueling concerns over its escalating impact. Given its far-reaching effects, I felt it was important to address this issue in my article.

Information is powerful—it not only prepares us for uncertainty but also provides clarity and peace of mind. By exploring both the history and present realities of the bird flu outbreak, I hope this article offers valuable insights and reassurance.

Sincerely,

A handwritten signature in cursive script that reads "Jimin Lee".

Jimin