



Public Health Role and Response to Influenza A (H5N1) Outbreaks in Minnesota Poultry and Dairy

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**2025 National Academies of Sciences,
Engineering and Medicine Workshop
September 29, 2025**

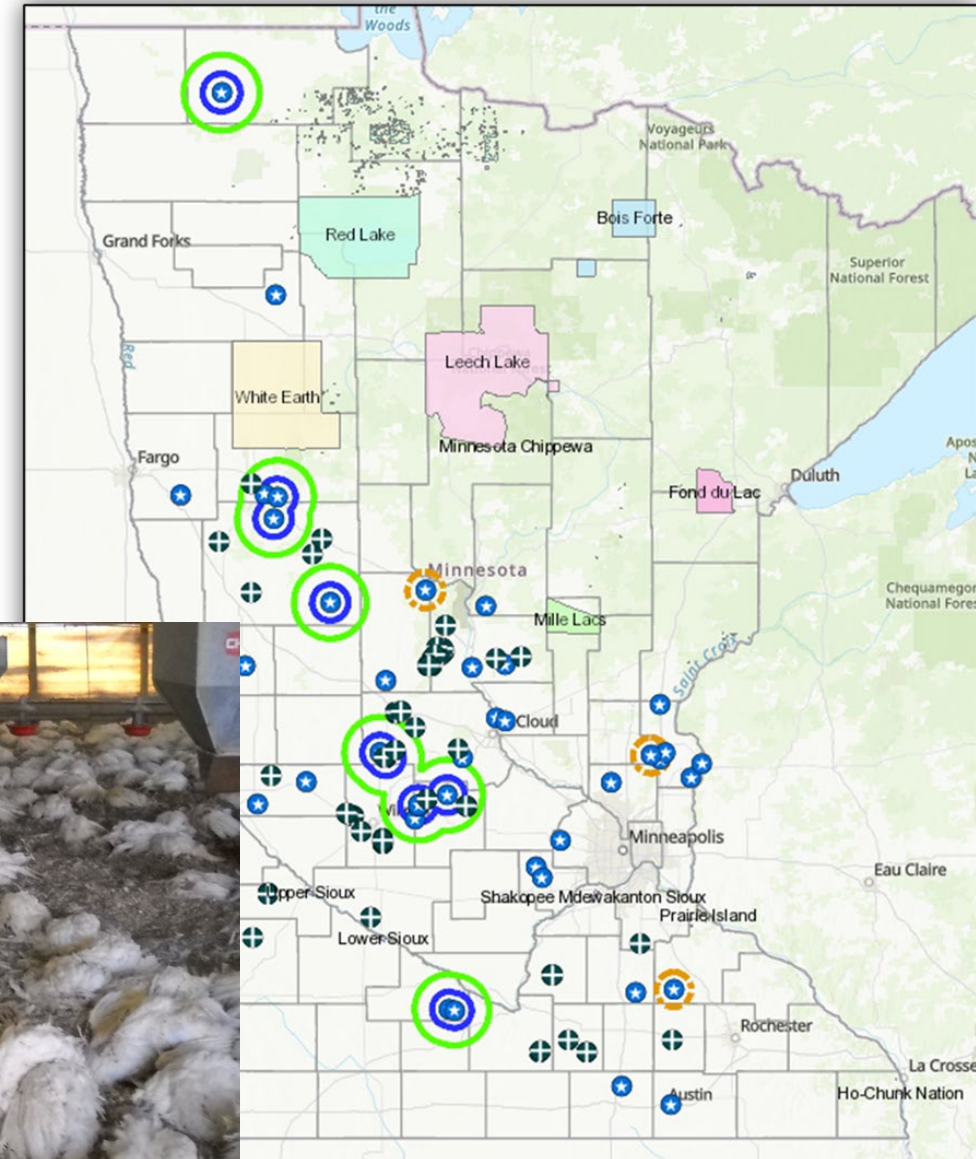
Poultry production in Minnesota

- **1st in turkey production and processing in the U.S.**
 - 600 turkey farms
 - 42 million meat turkeys annually
 - Breeders supply turkey poults nationwide
- **13th in egg production**
- **19th in broiler production**
- **Low and highly pathogenic avian influenza (HPAI) A viruses constant risk for these industries**
 - Long-standing industry surveillance systems



HPAI A(H5N2) Viruses in Minnesota, 2015

- 110 premises affected: 104 turkey, 5 chicken layers, 1 backyard flock
- Over 9 million birds died or were depopulated
- Estimated losses >650 million
 - 2500 jobs impacted
- Lasted 3 months
- Farm to farm spread



Two non-HPAI outbreaks among responders in 2015

- **Campylobacteriosis**
 - 5 cases among on-farm responders
 - Recommended clean trailer for resting and eating
- **Influenza B**
 - >30 cases in 2 MN Emergency Operations Centers (EOC)
 - Recommended evaluation, oseltamivir, isolation for symptomatic responders and influenza vaccination prior to deployment



Lessons learned in 2015 were applied to 2022

- Major lesson: public health must be a full partner in HPAI response
 - MDH incorporated into Incident Management Team
- Difficult for USDA and MN Board of Animal Health (BAH) responders to monitor themselves
 - Responder monitoring integrated into MDH human health monitoring
- The response must be sustainable
 - We automated most of the monitoring, used RedCap database

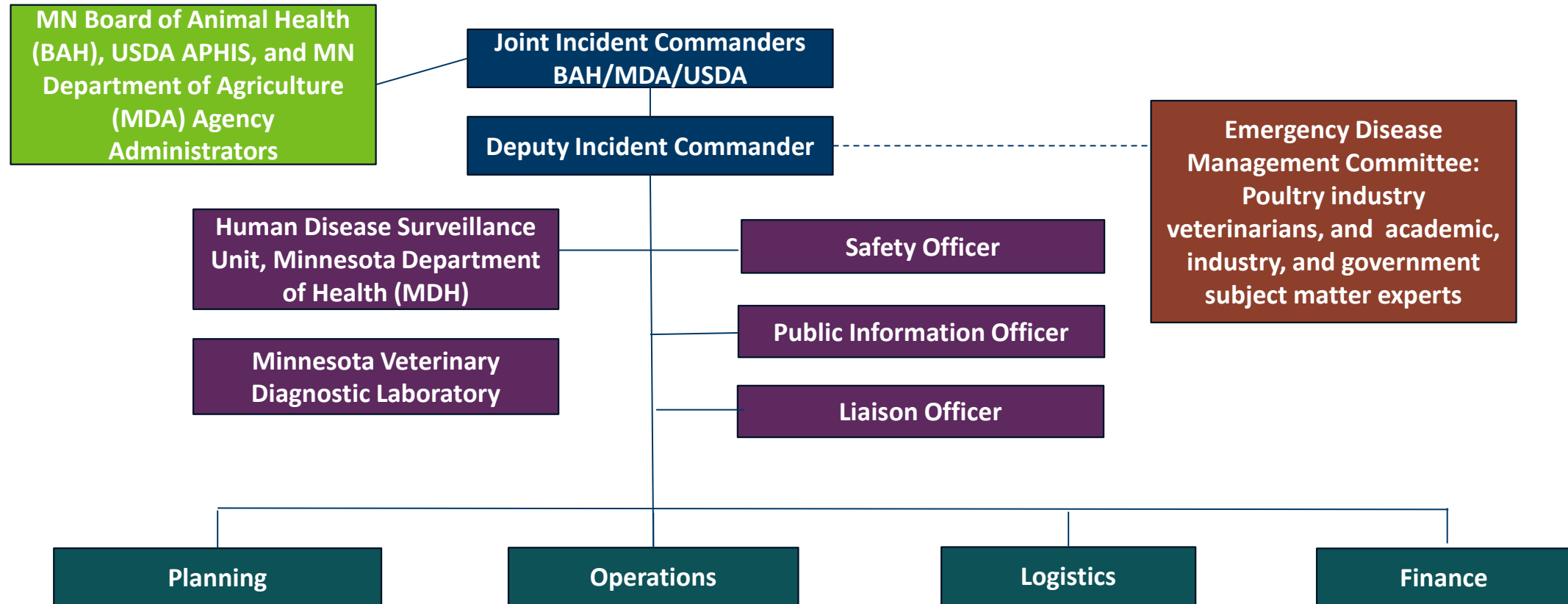


HPAI Returns: H5N1 Response in Minnesota, 2022 to present

MDH roles and responsibilities

- Protect human health
- Support responding animal health agencies
- Interview, and monitor the health of people in contact with infected birds or animals
- Test symptomatic people- MDH VPD Surveillance Unit
- Provide PPE and infection control guidance
- Provide information to animal production workers, industry, responders, the public
- Provide public health perspective on MN BAH Avian Influenza Emergency Disease Management Committee and Dairy Emergency Response Committee
- **Serve as Human Disease Surveillance Officers in the incident response**

Minnesota HPAI Incident Management Team Structure



Human Health Messages

- Human Health Sheets
- PPE One Page Infographic
- Spanish Worker Video
- <https://www.youtube.com/watch?v=e1Ar8lqXb9Y>



INFORMACIÓN DE SALUD PARA PERSONAS EN CONTACTO CON REBAÑOS DE GANADO LECHERO QUE HAN DADO POSITIVO POR INFLUENZA AVIAR
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Información de salud para personas en contacto con rebaños de ganado lechero que han dado positivo por influenza aviar (H5N1)

Este documento proporciona recomendaciones para las personas que tienen contacto con ganado de los que se sospecha o se ha confirmado que están infectados por influenza aviar A (H5N1).

Antecedentes

- En marzo del 2024, el Departamento de Agricultura de EE.UU. (USDA) informó de enfermedades principalmente entre vacas lecheras mayores en Texas, Kansas y Nuevo México. El ganado experimentaba una disminución de la producción de leche y poco apetito.
- Las muestras de leche no pasteurizada y la dieron positivo por influenza A(H5N1). Este virus de influenza aviar altamente patógena (HPAI) en aves silvestres, aves comerciales (industria 2021).

Riesgo para la salud de las personas

El riesgo para el público por este virus es bajo. Las granjas lecheras y quienes atienden o cuidan ganado no corren el riesgo de enfermarse.

- Una persona en Texas dio positivo por influenza aviar. La persona informó un leve resaca.
- Los funcionarios de salud pública han estado monitoreando la influenza A(H5N1) para detectar brotes por primera vez en EE. UU. en 2024.
- Las enfermedades en las personas causadas por la influenza aviar A(H5N1) son raras y los síntomas varían desde leves (p. ej., fiebre, fatiga) hasta graves (p. ej., neumonía).

Queremos que sea consciente de la posibilidad de enfermarse, incluso si el riesgo es bajo.

Manténgase saludable

Proteja a los trabajadores de granjas lecheras y avícolas de la influenza aviar A(H5N1).

La influenza aviar A(H5N1) generalmente no infecta a los humanos, pero es posible enfermarse si tiene contacto con aves o animales enfermos. Aquí hay algunos consejos para mantenerse saludable mientras trabaja en granjas avícolas o lecheras.

Las aves de corral y el ganado lechero enfermos pueden propagar la influenza.

No beba productos de leche cruda.

Contacte a un centro de salud comunitario si tiene síntomas.

Use guantes, gafas, mascarilla, botas y overoles para protección.

Lávese las manos después de trabajar con animales o en su entorno.

Esté atento a la tos, el dolor de garganta y el enrojecimiento de los ojos.

Infectious Disease Epidemiology, Prevention and Control
PO Box 64975, St. Paul, MN 55164
651-201-5434 or 1-877-476-5434
www.health.state.mn.us

Consulte la Guía de Influenza A(H5N1) para Trabajadores de Granjas Lecheras y Avícolas.
<https://www.youtube.com/watch?v=e1Ar8lqXb9Y>



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07/9/2024

Stay Healthy

Protect Dairy and Poultry Workers From Avian Influenza A(H5N1).

Avian influenza A(H5N1) typically doesn't infect humans, but it's possible to get sick if you have contact with sick birds or animals. Here are some tips to stay healthy while working on poultry or dairy farms.

Sick poultry and dairy cattle can spread influenza.

Do not drink raw milk.

Wash hands after working with animals or in their environment.

Wear gloves, goggles, mask, boots, coveralls for protection.

Watch for cough, sore throat, eye redness.

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MDH 2022-2025 Human Monitoring and Testing

- We have interviewed, evaluated, monitored people associated with 191 flocks, 9 dairy herds, 1 goat herd and 5 cats
 - 2494 exposures reported to MDH
 - 21 people currently in monitoring
- 106 people have reported symptoms and testing was recommended
 - 81 were tested, no human infections with H5N1
 - 29% tested had seasonal respiratory pathogens detected



Human Health Surveillance During Animal Disease Emergencies: Minnesota Department of Health Response to Highly Pathogenic Avian Influenza Outbreaks, 2015 and 2022–2023

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- **Paper focused on MDH Zoonotic Diseases Unit's (ZDU's) "One Health" response**
- **Entire public health response included MDH's Vaccine Preventable Diseases Surveillance Unit and Public Health Laboratory**

Methods section of paper

- Information flow from BAH and poultry industry to MDH Zoonotic Diseases Unit
- Interviewing and monitoring of exposed people
- Data handling
- Communications and outreach efforts



Results: Monitoring experience in MN, 2015 and 2022-2023

Measure	2015 N (%)	2022-2023 N (%)	P-value
Affected flocks	110	151	
Attempted interviews	437	992	
-- poultry workers	435 (99.5)	635 (64.0)	
-- contractors	N/A	218 (22.0)	
-- responders	N/A	75 (7.6)	
-- backyard flock owners	2 (0.5)	64 (6.4)	
LTF*, refused interview	60 (13.8)	343 (34.6)	<0.01
Completed interviews	375 (85.8)	649 (65.4)	<0.01

*LTF: Loss to follow-up

Self-reported PPE usage and seasonal influenza vaccine uptake, MN, 2015 vs. 2022-2023

PPE component, Seasonal flu vaccine	Exposed poultry workers (2015) N = 359 n (%)	Exposed poultry workers (2022-2023) N = 309 n (%)	p-value
Coveralls	263 (73.3)	249 (80.6)	0.03
Gloves	291 (81.1)	239 (77.3)	0.24
Boots	297 (82.7)	285 (92.2)	<0.01
Mask or respirator of any kind	254 (70.8)	198 (64.1)	0.07
Eye protection	186 (51.8)	103 (33.3)	<0.01
Wearing full PPE	186 (51.8)	74 (23.9)	<0.01
Wearing full PPE, excluding poultry workers employed by a turkey breeding facility	N=269 96 (35.7)	N=257 59 (23.0)	<0.01
Seasonal Influenza Vaccine	N = 281 132 (47.0)	N=308 102 (33.1)	<0.01

Results: Monitoring experience in MN, 2024

Measure	Poultry N (%)	Dairy N (%)
Affected flocks or herds	31	9
Attempted interviews	918	122
-- workers	680 (74.1)	113 (92.6)
-- responders	223 (24.2)	9 (7.4)
-- backyard flock owners	15 (1.6)	N/A
LTF, refused interview	535 (58.3)	55 (45.1)
Completed interviews	383 (41.7)	67 (54.9)

Self-reported PPE usage and seasonal influenza vaccine uptake, MN, 2024

PPE component, Seasonal flu vaccine	Exposed poultry workers (2024) N = 113 n (%)	Exposed dairy workers (2024) N = 58 n (%)
Coveralls	86 (76.1)	28 (48.2)
Gloves	89 (78.8)	50 (86.2)
Boots	94 (83.2)	42 (72.4)
Mask or respirator of any kind	89 (78.8)	13 (64.1)
Eye protection	57 (50.4)	23 (22.4)
Wearing full PPE	57 (50.4)	10 (17.2)
Seasonal Influenza Vaccine	40 (35.4)	17 (29.3)

Unresolved issues

- **Contractors difficult to identify and monitor**
 - They don't know who to contact if they do get sick
- **People assist with depopulation without the use of full PPE**
 - Mainly independent poultry producers and backyard flock owners
 - Current outreach efforts not effective
- **Response fatigue**

Potential Paths Forward

- Continued communication and feedback between public health, animal health and industry
- Engagement of industry occupational health providers, university extension, rural health providers and immigrant and migrant outreach organizations
- Meet the industry and the community where they are

Thank you!

Acknowledgements:

- Minnesota Poultry and Dairy Industry
- Minnesota Board of Animal Health
- USDA APHIS VS
- Minnesota Department of Agriculture
- University of Minnesota
- MDH Zoonotic Diseases Unit
- MDH VPD Surveillance Unit
- MDH Public Health Laboratory
- UMN Raptor Center
- Minnesota Department of Natural Resources



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BOARD OF ANIMAL HEALTH

ATTENTION: Highly Pathogenic Avian Influenza

Highly pathogenic avian influenza (HPAI), H5N1, has been confirmed in the United States in 2022. Introduced by migrating wild birds, H5N1 will spread through spring migration, and can affect all domestic poultry: small and urban flocks and commercial industries.



Scan for info on avian influenza

Poultry with HPAI ***do not*** survive the illness. Vaccines for HPAI are not readily available.

Signs of Avian Influenza

- Extreme depression
- Very quiet
- Difficulty breathing
- Decrease in feed or water intake
- Swelling or purple discoloration of head, eyelids, comb, wattle, and hocks
- Decrease in egg production
- Sudden unexplained death

Biosecurity is your best option to prevent HPAI from entering your small or urban poultry flock.

Here is what you can do:

Scan for more biosecurity tips



Protect Your Small Flock from Avian Influenza

- 1 **Avoid** attracting wild birds and waterfowl to your home. Song birds, sparrows, starlings, etc. are **low risk**.



- 2 **Limit or halt** travel with your birds to sales, shows, and swaps.

Ensure you have clean hands, clothes, and footwear before handling your birds if you attend events. **Do not** allow others to handle your birds.



- 3 **Limit your birds' visitors.** If someone must visit your birds:
 - Discuss where they have been.
 - Have them wash their hands and wear clean clothes and footwear.



Call your veterinarian if your flock shows signs of influenza or you suspect exposure. No veterinarian? Call Minnesota Poultry Testing Laboratory at 320-231-5170.



You provide for your family.
You can protect them too.
Get your flu shot.

Find out more about where to get vaccinated

health.state.mn.us/people/immunize/basics/vaxfinder.html



Questions?

The findings and conclusions presented here are those of the authors and do not necessarily represent the official position of the CDC.