

Bird Flu: It's Not Just for Birds Anymore

ECHO

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A photograph of two brown chickens standing in front of a wooden fence. The chicken in the foreground is facing the camera, while the one behind it is slightly to the left and looking away.

Overview

01

Overarching Concerns

02

Current Situation in the U.S.

03

Georgia Preparedness & Response

04

Wastewater Surveillance Potential

What are the overarching concerns?

Economic

- Primary impact on the agriculture industries
- Poultry depopulation
- Testing costs
- Food safety and perception
- Food prices
- And more...

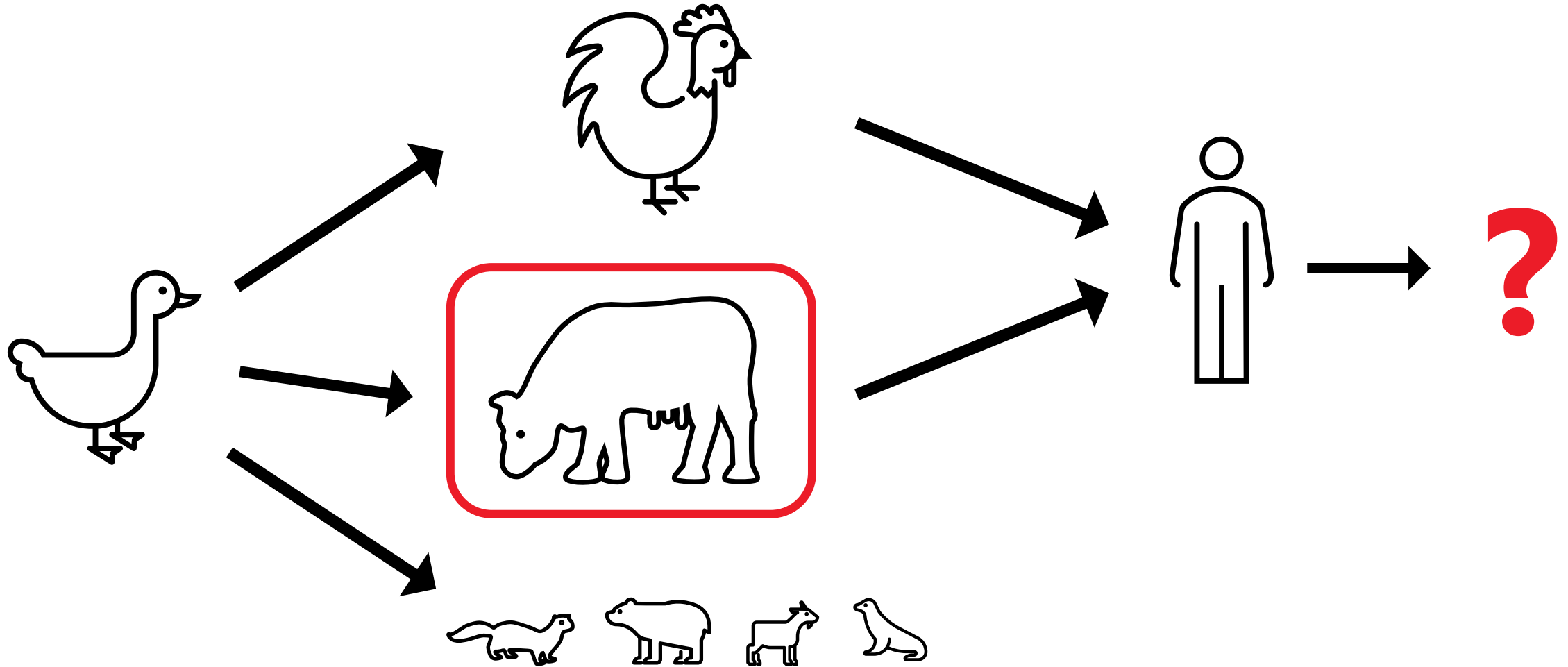
Georgia is the **top poultry producing state** in the nation.

Pandemic

- Worst case scenario but **not likely**
- An animal flu virus that develops the ability to infect people evolves into a novel virus that can spread from person-to-person

Current Situation in the U.S.

2021: H5N1, Clade 2.3.4.4b





Detections of High Path Avian Influenza EA H5N1 in Mammals, May 2022 to Present

Points are approximations based on the county of detection and may represent multiple detections.



National Wildlife Disease Program
USDA/APHIS/Wildlife Services
Updated September 24, 2024
Data Source: State Agencies, USDA
Map created by: Jourdan Ringenberg



Flyway

- Pacific
- Central
- Mississippi
- Atlantic

Species

- Big cat (captive)
- Bobcat
- Domestic cat*
- Mountain lion
- Black bear
- Brown bear
- Polar bear
- Bottlenose dolphin
- Grey seal
- Harbor seal
- Coyote
- Red fox
- American marten
- American mink
- Fisher
- North American river otter
- Raccoon
- Skunk spp.
- Virginia opossum
- Abert's squirrel
- Desert cottontail
- Mouse spp.
- Prairie vole

0

800

Miles

Poultry vs Bovine H5N1

Poultry

- Spreads rapidly
- Causes severe respiratory infections and fatality
- Whole flock is depopulated

Bovine

- Not fatal, recovery in a few weeks
- Symptoms develop slowly or are asymptomatic
- Symptoms are not respiratory – primarily anorexia, decreased milk production, thick/yellow milk
- Herds are not depopulated
- Virus shed in milk – **raw milk is a risk, commercial milk is safe** (pasteurization kills H5N1 virus)
- Cows can transmit to each other – by milking equipment??

Current Concerns

- Closer and continued exposure of infected cattle to people
- More challenging to define the end of exposure period for human monitoring



H5N1 in Dairy Cattle

320*

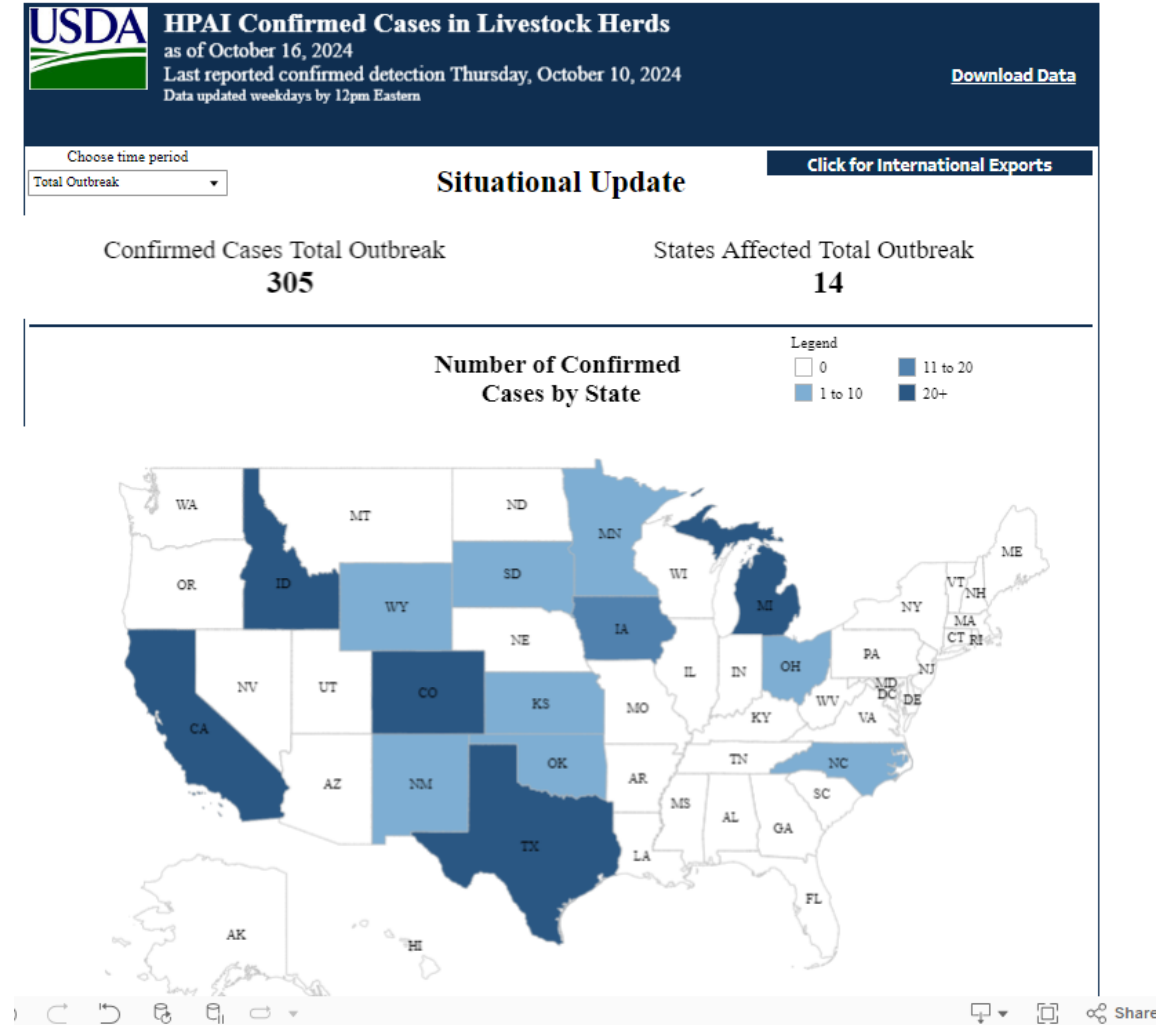
Herds

14

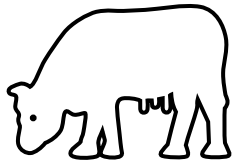
States

Genomic sequencing of cattle H5N1 viruses showed:

- H5N1 was initially transmitted from wild birds to dairy cattle in Texas in late December 2023
- Last 30 days: 112 herds in 2 states (CA and ID)

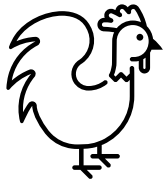


Human Cases of H5N1 (2024)



Cases associated with cattle exposure (**10**)

- **1** in Texas – reported April 1
- **2** in Michigan, **1** in Colorado, **6** in California



Cases associated with poultry exposure (**9**)

- **9** in Colorado – reported starting July 14

One UNKNOWN in Missouri

All mildly ill, no hospitalizations, conjunctivitis most common symptom (varied in severity)

Current Situation in the U.S.



**No human-to-human
transmission has been detected**

HPAI H5N1 has NOT been
confirmed in beef cattle nor swine,
but farm cats have been affected

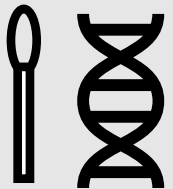
Should we worry about a pandemic?



Health risk for the general public remains **low**.



Farm workers with close, prolonged exposures to infected animals or their environments are at **higher risk** (and need PPE).

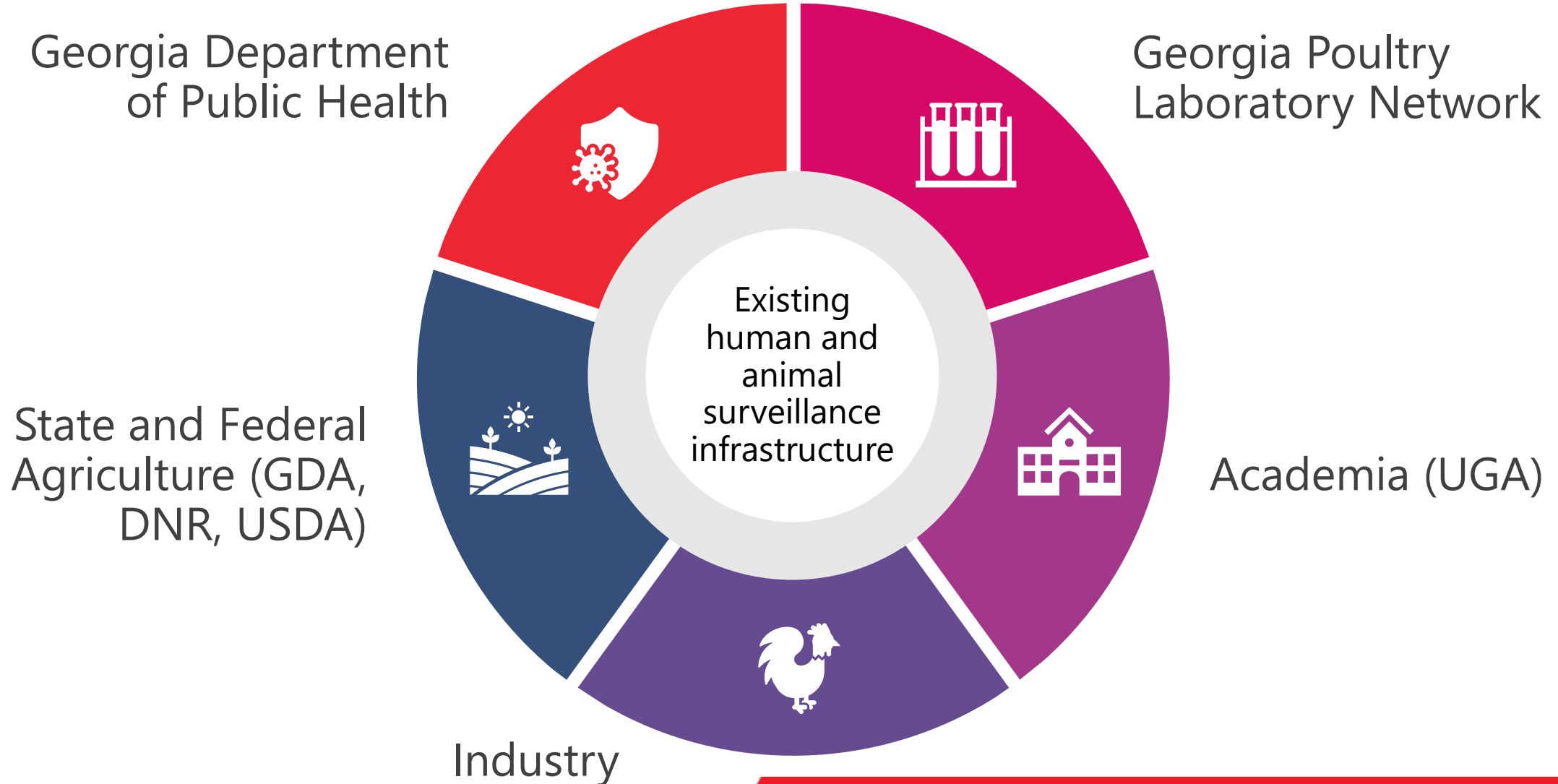


Sustained spread in mammals and humans has not occurred... but **we need ongoing testing** of animals/workers **AND genomic sequencing** to monitor for changes in virus.

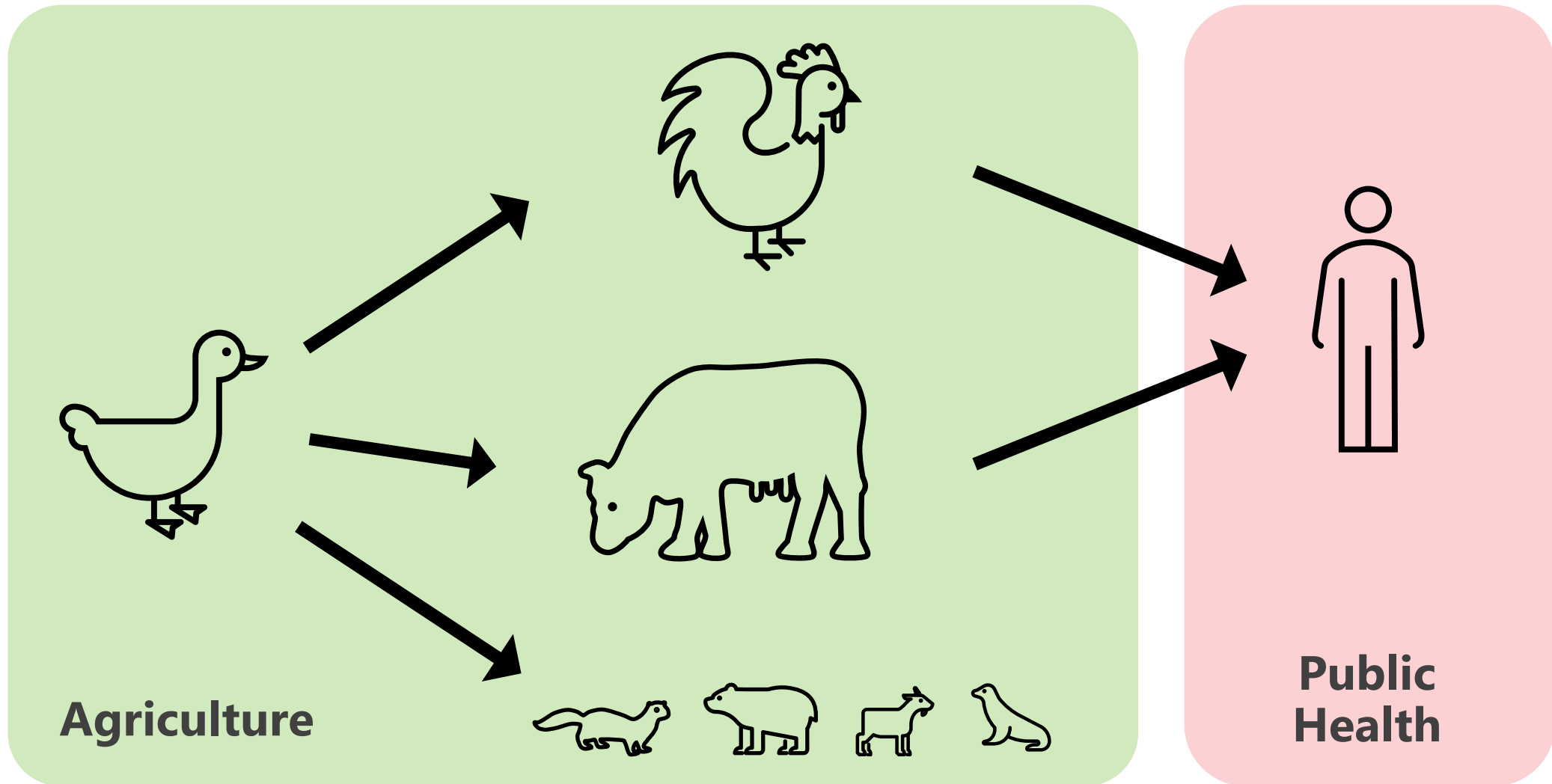
We can be prepared!

Georgia Preparedness & Response

Years of Multi-Agency HPAI Response Planning in Georgia



Existing Surveillance Activities



Primary Role

Monitoring persons exposed to affected poultry or cows (primarily farm workers and response personnel)



Providing testing for H5N1 infections (those with symptoms + epi link)



Find a GPL photo

Promoting farm worker protection



PREPARING FOR HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI) IN GEORGIA

WHAT SHOULD I DO IF I WORK WITH BIRDS?



Get your annual flu shot.
The flu shot does not prevent avian influenza, but can protect you against seasonal flu.

Signs and Symptoms

Additional 2024 Efforts

- Tailored messaging and communication materials for dairy farm workers
- Enhanced summer surveillance of flu specimens
- Increased collaboration with GDA and other partners (Georgia Milk Producers, GPLN, USDA, GA public health districts, Georgia Poison Control)

As of October 16, 2024, Georgia has **not** had any dairy cow herds with HPAI infection and has **no** ongoing poultry outbreaks.

We're Experienced (GA)

In 2022, Georgia documented its first backyard flock positive event

DPH's Response Efforts:

- Monitored over 130 exposed persons (Department of Agriculture responders, farm workers) for 10 days
- For those that developed ILI symptoms:
 - Arranged telemedicine consults
 - GPHL tested several people for H5N1 → they tested (-) and were (+) for rhinovirus or other common respiratory viruses



Georgia Department of Public Health

HPAI

10 Day Temperature / Symptom Monitoring

Due to your exposure to HPAI, the Georgia DPH is asking that you monitor yourself for any symptoms of influenza like illness for 10 days following your exposure. Please sign in below to report your symptoms. DPH privacy policies can be accessed at dph.georgia.gov/notice-privacy-policies.

Please enter your User name:

Please enter your Password:

Log In

We're Experienced (U.S.)

Monitoring of Persons Exposed to Infected Animals*

February 2022 – Present	<p>CDC and state and local health departments monitor people exposed to infected birds, poultry, dairy cows or other animals for 10 days after exposure. Between February 2022 and now, there have been</p> <ul style="list-style-type: none">• At least 14,500 people monitored and• At least 540 people tested for novel influenza A
Current HPAI Outbreak (2024)	<p>CDC and state and local health departments monitor people exposed to infected birds, poultry, dairy cows and other animals for 10 days after exposure. Between March 24, 2024, and now, there have been</p> <ul style="list-style-type: none">• At least 5,100 people monitored<ul style="list-style-type: none">◦ At least 2,560 with exposures to dairy cows◦ At least 2,600 with exposures to birds and other animals including poultry (non-dairy cow source)• At least 250 persons tested for novel influenza A<ul style="list-style-type: none">◦ At least 85 with exposures to dairy cows◦ At least 170 with exposures to birds and other animals including poultry (non-dairy cow source)

- We are ready and adept
- Exposure is rare, and becoming infected even more so
- There is a need for increased testing to monitor the situation, which we are seeing as a result of the current outbreak

Potential of Wastewater Surveillance

What We Know

- H5 can be tested for in wastewater
- Influenza A activity detected in wastewater MAY include H5 contribution
- This may be a useful tool in conjunction with other surveillance systems



What We Don't

- The source of any H5 contribution
 - People? Mammals? Birds?
 - Does it come from waste or byproducts?
 - Differential shedding?
- Threshold?
- If it's infectious virus
- If it is H5N1



Wastewater Surveillance Considerations

- Agricultural businesses of concern may be on septic systems or may not contribute to municipal water systems
- It would likely take high levels of H5N1 to identify a “spike”
 - We would have likely already identified this through reporting, especially in poultry
 - This is not a tool to identify a single or small number of cases

We should be cautious about overinterpretation as we are still learning.

Wastewater Surveillance Targets



**WASTEWATER
SCAN**
Collect. Detect. Inform.



COVID-19	✓	✓	✓	✓	✓
Influenza			✓	✓	✓
RSV			✓	✓	✓
Mpox			✓		✓
Human Metapneumovirus			✓		
Norovirus			✓		



= Pilot testing/validating



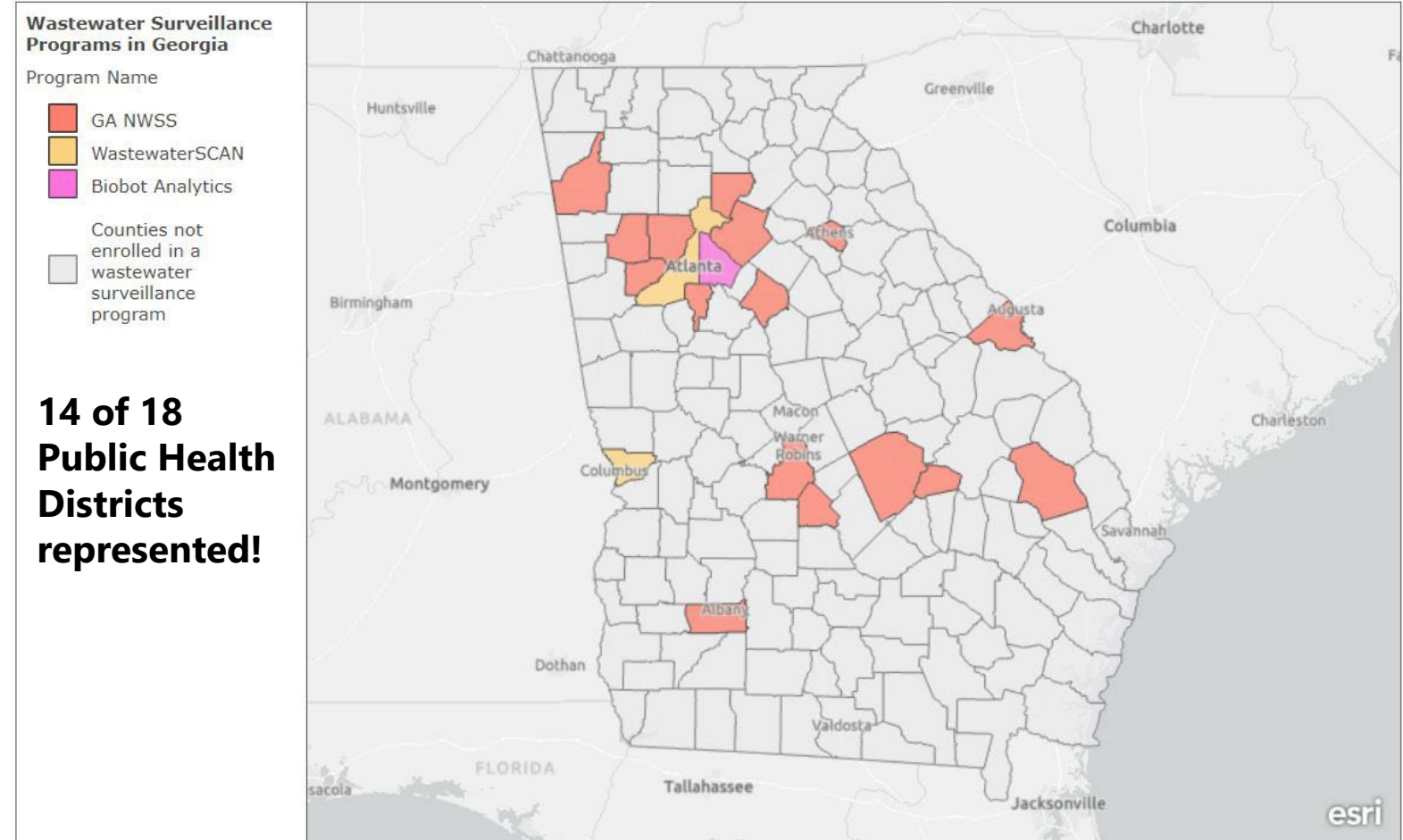
= Actively testing

Wastewater Surveillance Coverage in Georgia

Counties Covered:

- Bulloch
- Clarke
- Clayton
- Cobb
- Dougherty
- Douglas
- Forsyth
- Floyd
- Fulton
- Gwinnett
- Houston
- Laurens
- Muscogee
- Newton
- Paulding
- Richmond
- Treutlen

Wastewater Surveillance Activities in Georgia as of November 2, 2023



Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS | Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS

Key Takeaways



Epidemiology and surveillance (including genomic surveillance) are the foundation of prevention and control recommendations.



In Georgia we have existing protocols and very strong partnerships and plans with the Georgia Department of Agriculture.



Even if this situation does not worsen, bird flu preparedness has **overarching benefits** for seasonal flu, pandemic flu, and emerging infectious disease response.

A black and white cow is positioned on the right side of the image, looking towards a large red speech bubble on the left. The speech bubble has a black outline and a small tail pointing towards the cow's head.

Thank Moo!

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