Highly Pathogenic Avian Influenza A(H5N1)

Vivien G. Dugan, PhD

Director, Influenza Division
National Center for Immunization and Respiratory Diseases
Centers for Disease Control and Prevention

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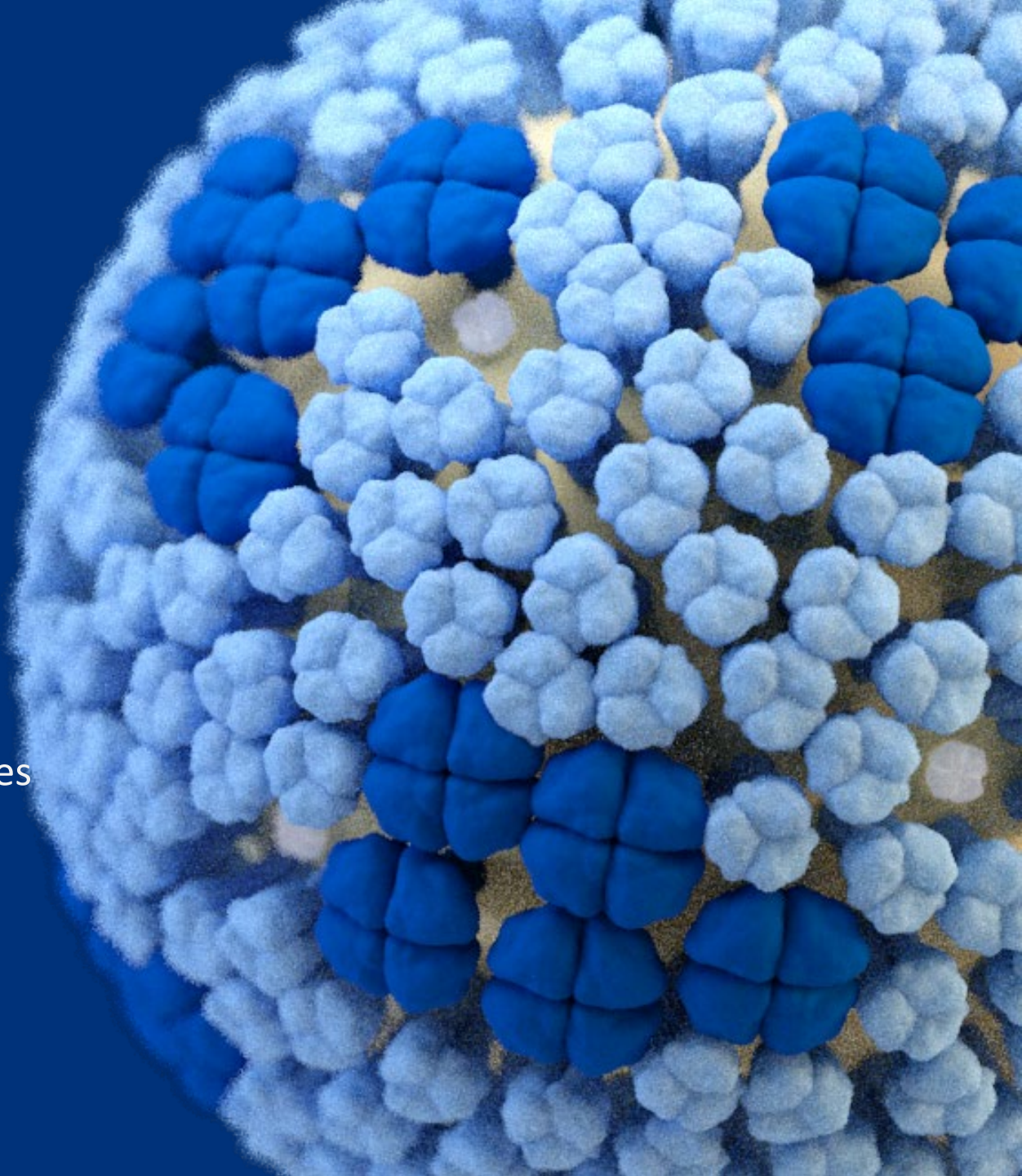

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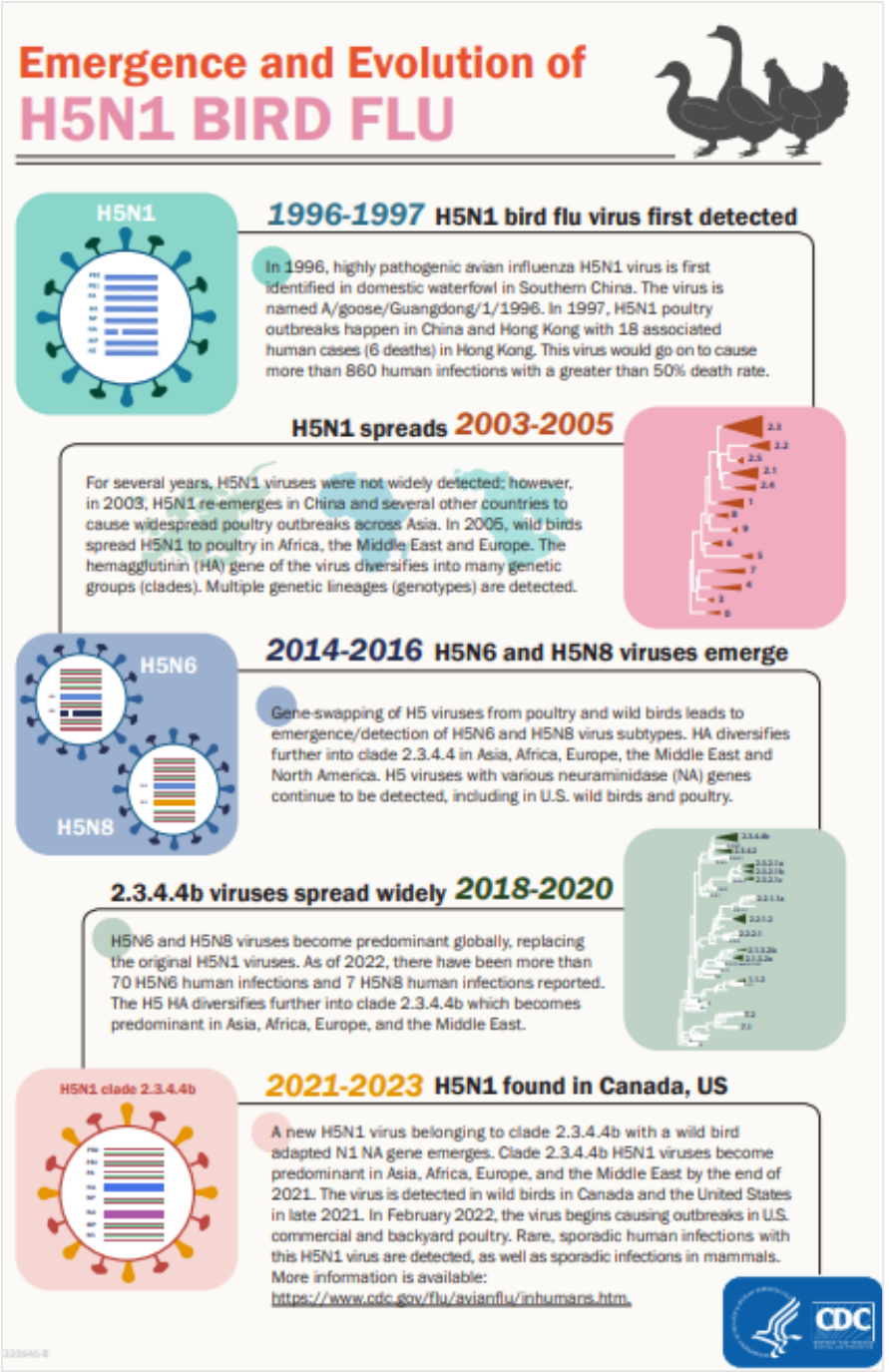
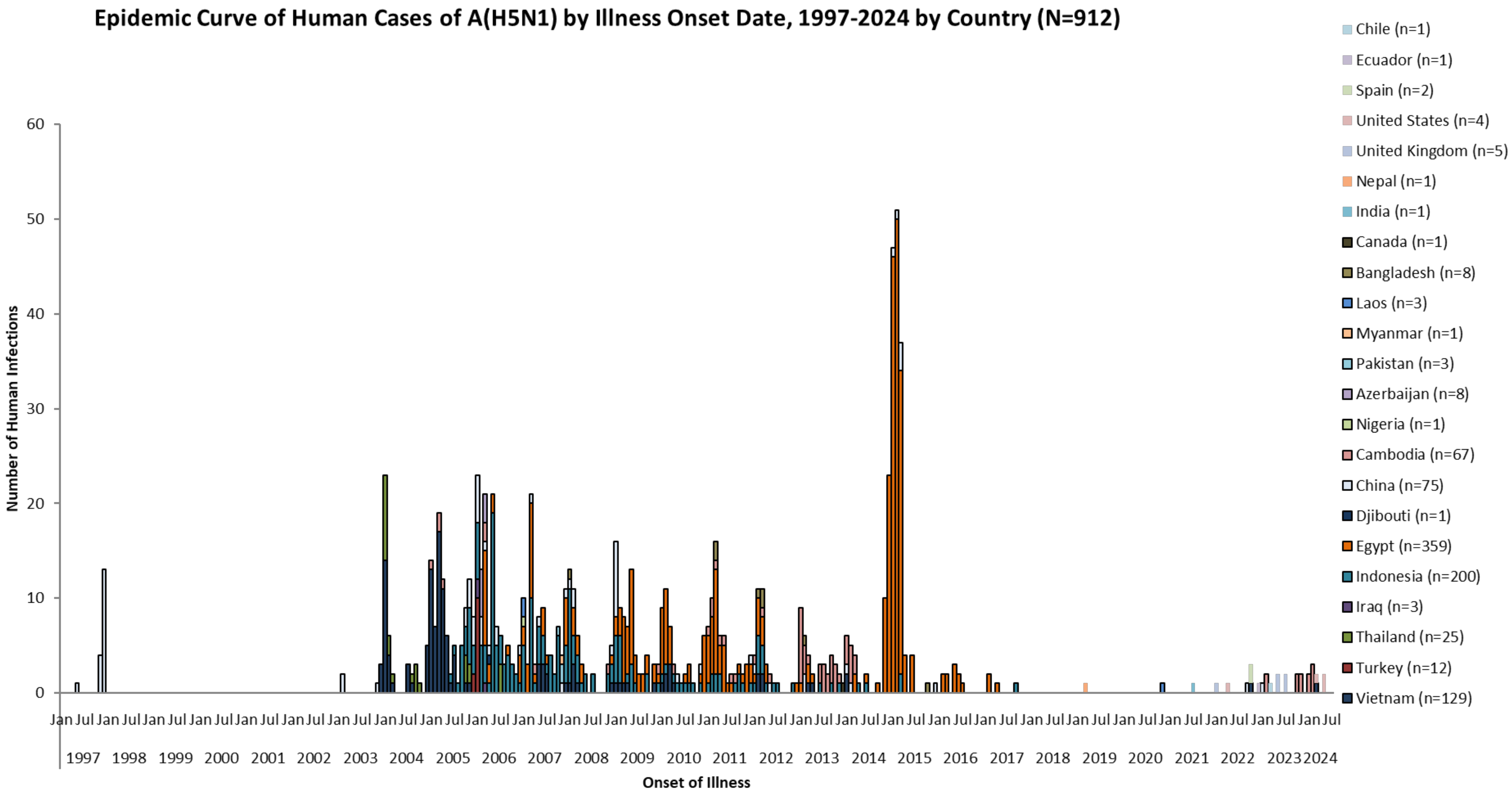
Overview of HPAI A(H5N1)

- HPAI A(H5N1) detected in birds in 1996
  → **A(H5N1) is not a new threat**
- Sporadic HPAI A(H5N1) virus infections of mammals have been reported since 2003-2004
- A(H5N1) clade 2.3.4.4b viruses emerged in wild birds in 2020
- 29 human cases of HPAI A(H5N1) have been detected globally since January 2022
  - U.K. (5), U.S. (4), Spain (2), Vietnam (2), China (2), Ecuador, Cambodia (11), Chile, Australia



Avian Influenza Communication Resources | Bird Flu | CDC

Human A(H5N1) Cases Since 1997



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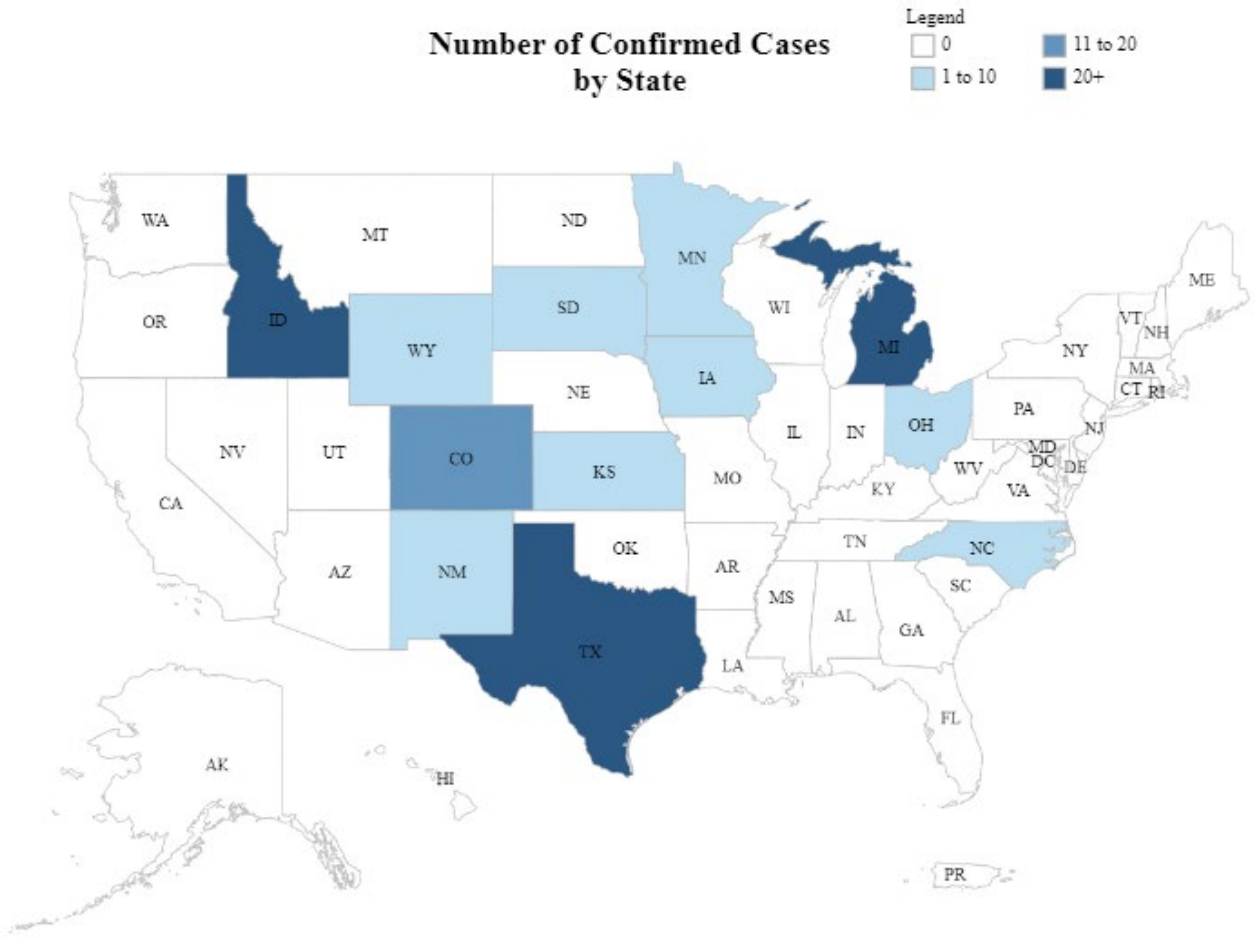
[Technical Report: June 2024 Highly Pathogenic Avian Influenza A(H5N1) Viruses | Bird Flu | CDC]

HPAI A(H5N1) in Dairy Cattle: Current Situation and Response Updates

HPAI A(H5N1) in Dairy Herds

- USDA has confirmed A(H5N1) virus infections of dairy herds in >100 farms across 12 states
  - Clade 2.3.4.4b virus
  - High levels of virus in raw milk
- Other animal species reported in association with infected dairy herds in the United States include:
  - Wild birds, cats, racoon, opossums
- Wide range of infected wild birds, terrestrial and marine mammal species worldwide



USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

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Highly Pathogenic Avian Influenza (HPAI) Detections in Livestock; WAHIS (woah.org)

A(H5N1) Human Cases

- April 1 – Texas announced 1st human infection of HPAI A(H5N1) virus*
- May 22 – Michigan announced 2nd human infection of influenza A (H5)†
- May 30 – Michigan announced 3rd human infection of influenza A (H5)†
- Adults working at dairy farms and in contact with cows
- 1st and 2nd cases reported conjunctivitis only, 3rd reported minor respiratory symptoms
- All offered oseltamivir, mild illness and recovered without hospitalization
- No human-to-human transmission

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* Health Alert: First Case of Novel Influenza A (H5N1) in Texas, March 2024 | Texas DSHS

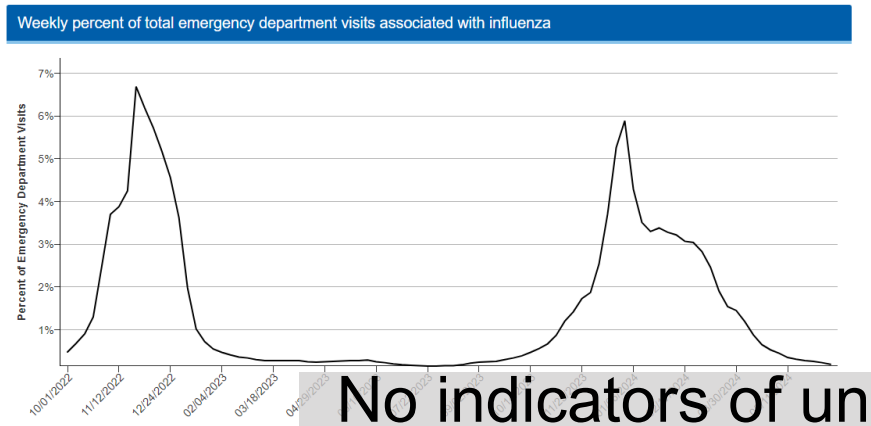
† Influenza A (H5N1) (michigan.gov)

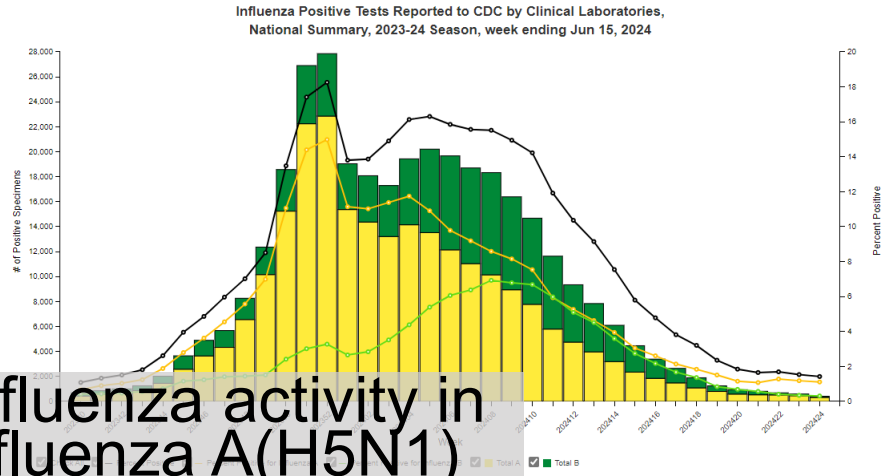
A(H5N1) Human Cases – Virus Sequences to Date

- **Diagnostics:** No impact to current CDC influenza diagnostic assay's ability to detect A(H5N1) viruses
- **Treatments:** No known markers of resistance to FDA approved antiviral drugs (polymerase acidic inhibitor: baloxavir; neuraminidase inhibitors: oseltamivir, peramivir, and zanamivir)
- **Candidate Vaccine Viruses** (CVVs)
  - HA of human influenza virus very closely related to **two available CVVs**
  - CVVs expected to provide good protection against this virus

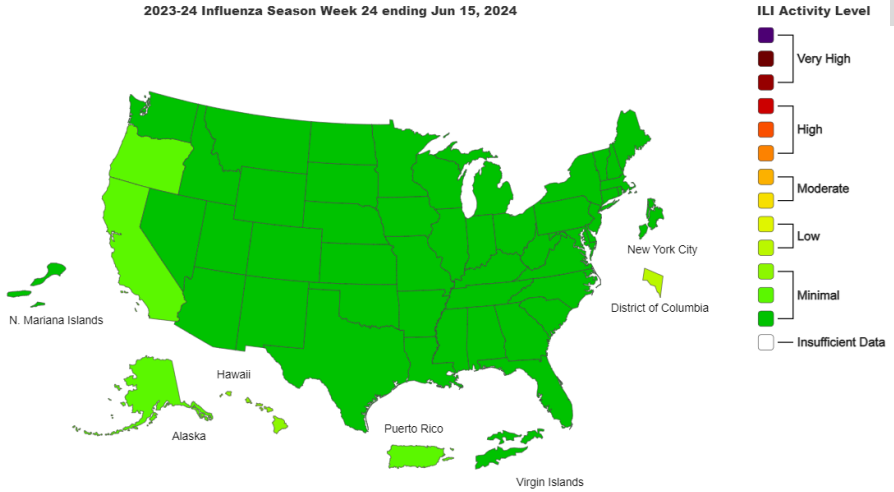
Surveillance, Human Monitoring, and Testing

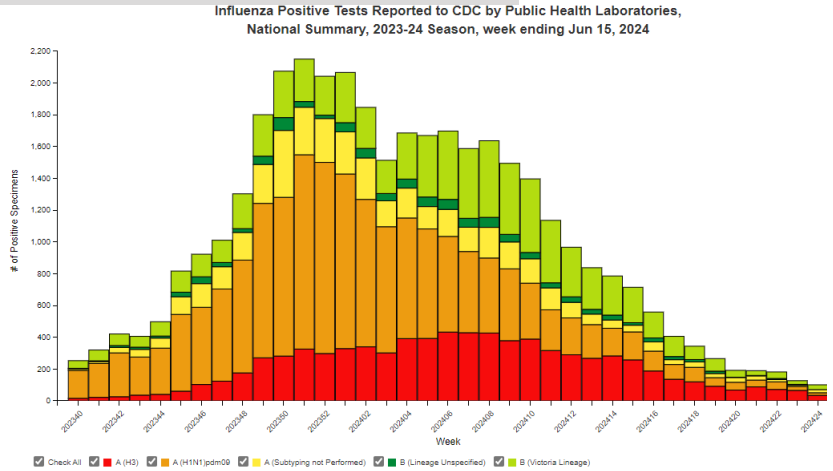
- Since March 2024, during the current HPAI A(H5N1) outbreak in dairy cattle, at least 690 people monitored from affected farms, at least 51 tested, 3 positives (1 in TX, 2 in MI, last case detected May 30, 2024)
- Since March 2024, public health laboratory monitoring includes testing of 30,163 specimens have been tested using a protocol that would have detected A(H5N1) and other novel viruses





No indicators of unusual influenza activity in people, including avian influenza A(H5N1)

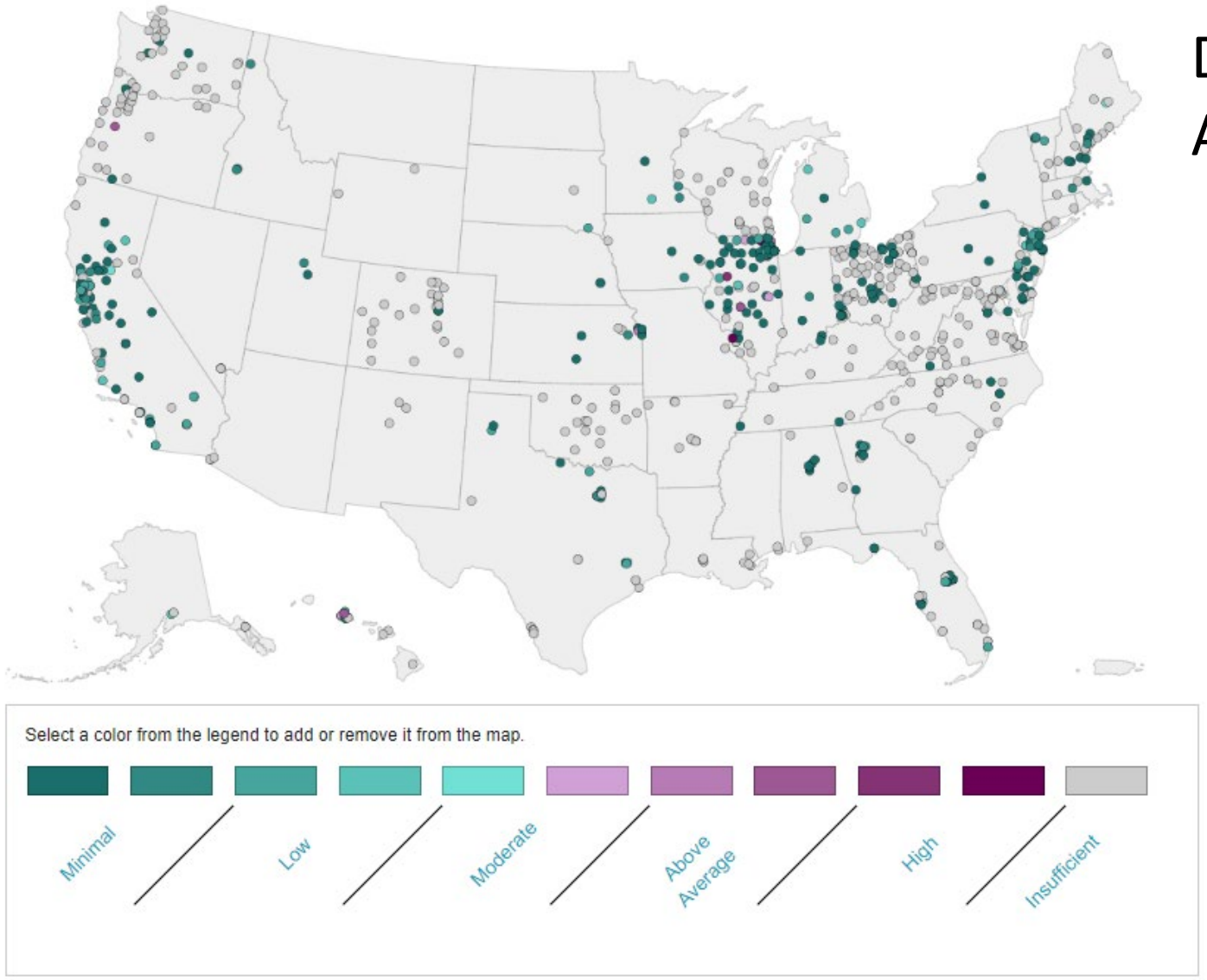




Influenza

How CDC is monitoring influenza data among people to better understand the current avian influenza A (H5N1) situation | Bird Flu | CDC, Weekly U.S. Influenza Surveillance Report | CDC

‘High’ Wastewater Sites and H5 Detections



Data from June 2, 2024 – June,15, 2024

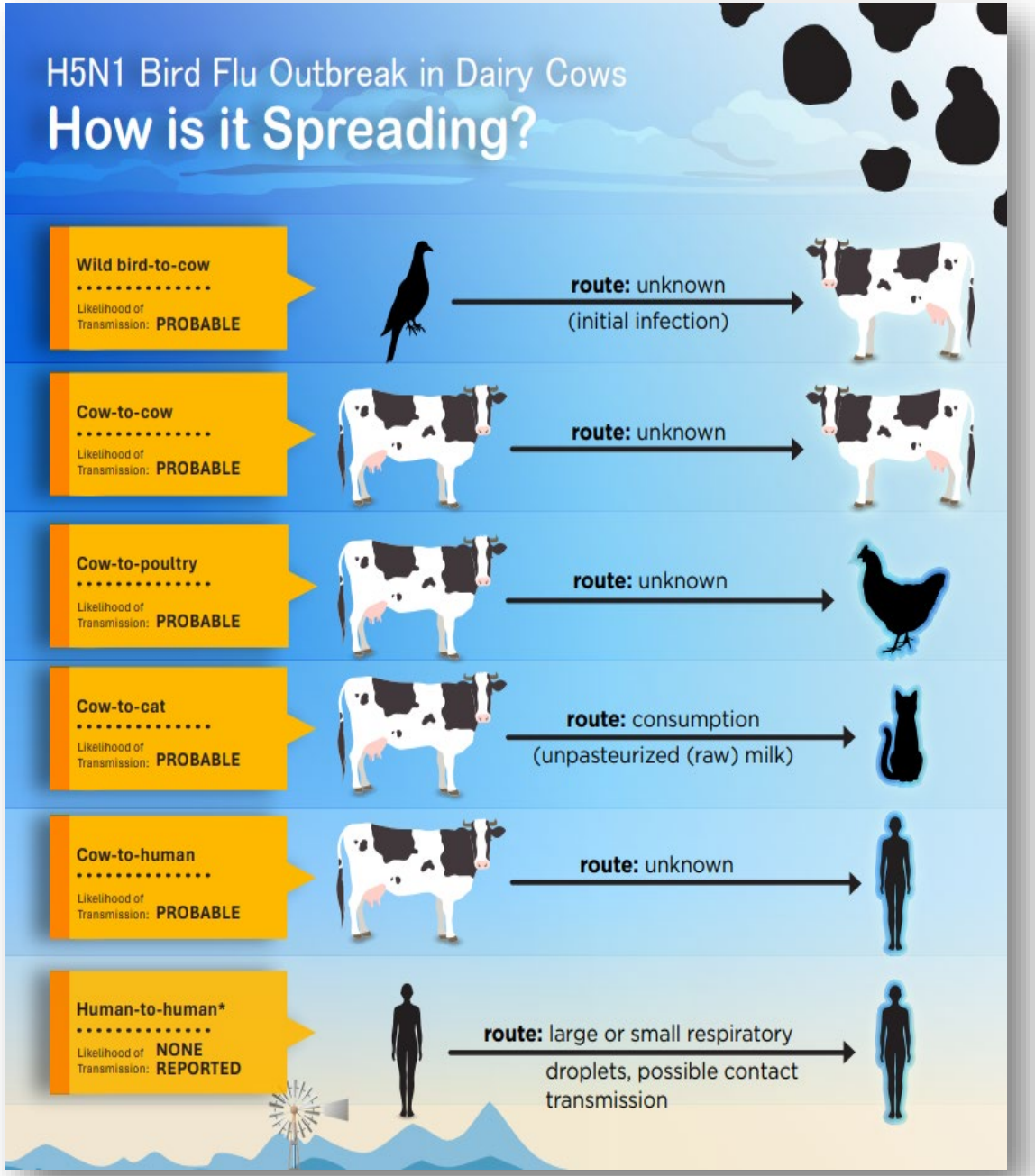
Developed Levels for Influenza A Virus in Wastewater

- Influenza A Virus Level metric
- Compare current level to levels at the same site during the 2023-2024 influenza season
- Flag ≥80th percentile as “high”
- Outreach to state/local partners in "high" areas, as well as notifying state, local, and federal partners

[How CDC is monitoring influenza data among people to better understand the current avian influenza A (H5N1) situation | Bird Flu | CDC]

Epidemiologic Investigations

- Health and agricultural partners at local, state and federal level, and affected farms using One Health approach
- Important public health questions
  - Evidence of infection in exposed populations?
  - Spectrum of illness and rate of asymptomatic infections?
  - Types of exposure on farms/dairies?
  - Behaviors associated with human infections or protection from infection?
- Assess risk for symptomatic and asymptomatic infection and a survey to assess exposures



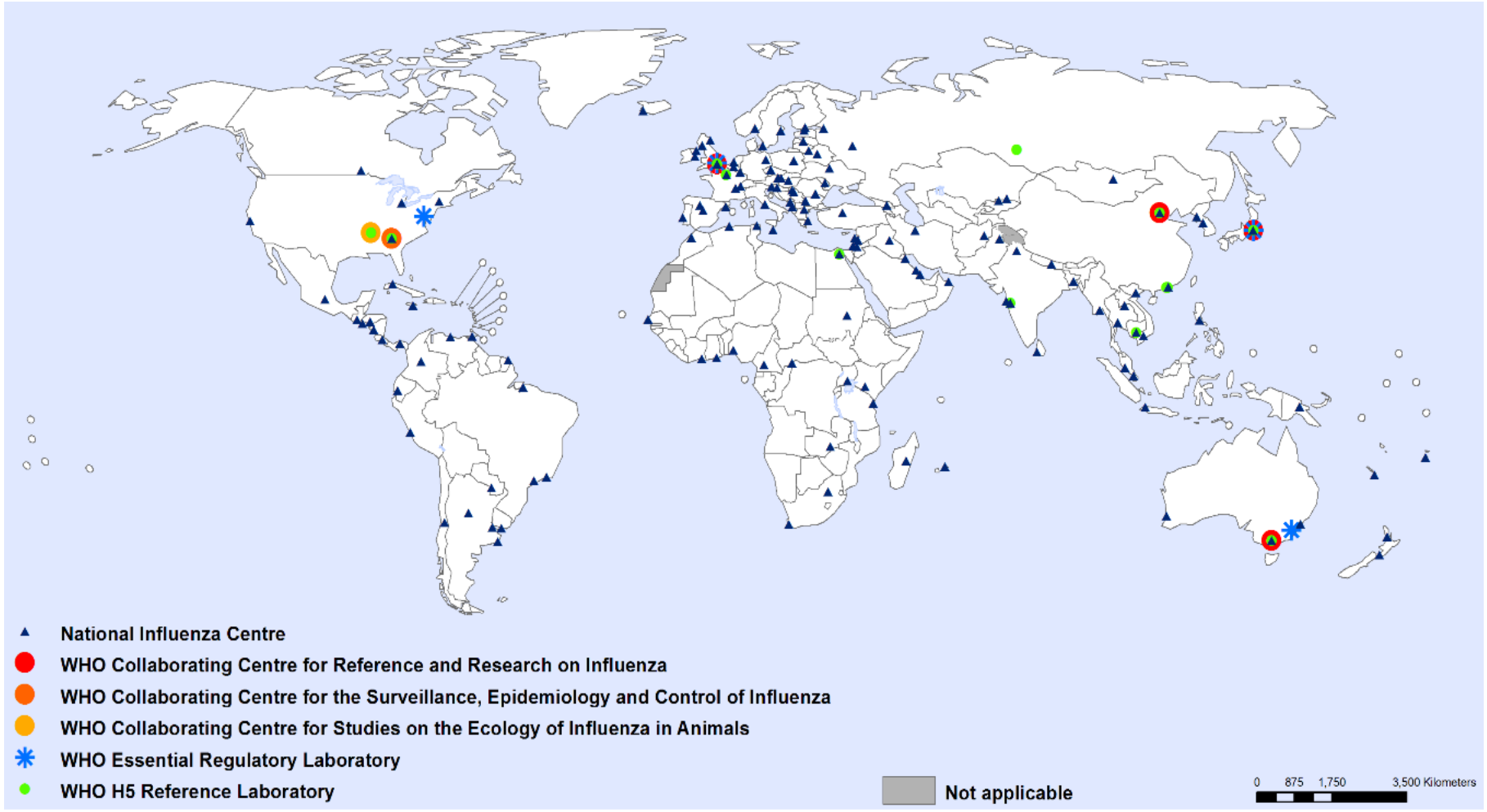
Avian Influenza Communication Resources | Bird Flu | CDC

CDC Influenza

Summer Influenza Surveillance Priorities

- Continued monitoring of people with recent exposure on confirmed farms
- Facilitate detection of A(H5N1) human cases in the community through enhanced, national surveillance at seasonal influenza levels
  - Subtyping of influenza A positive specimens, expanded specimen sources
  - Continued surveillance of lab-confirmed influenza associated hospitalizations through FluSurv-NET
- Continued follow-up for areas that flag in syndromic and wastewater data
- Provider outreach to continue influenza testing through summer, particularly for patients with recent history of relevant exposures

Global Surveillance is Central to Prevention and Mitigation



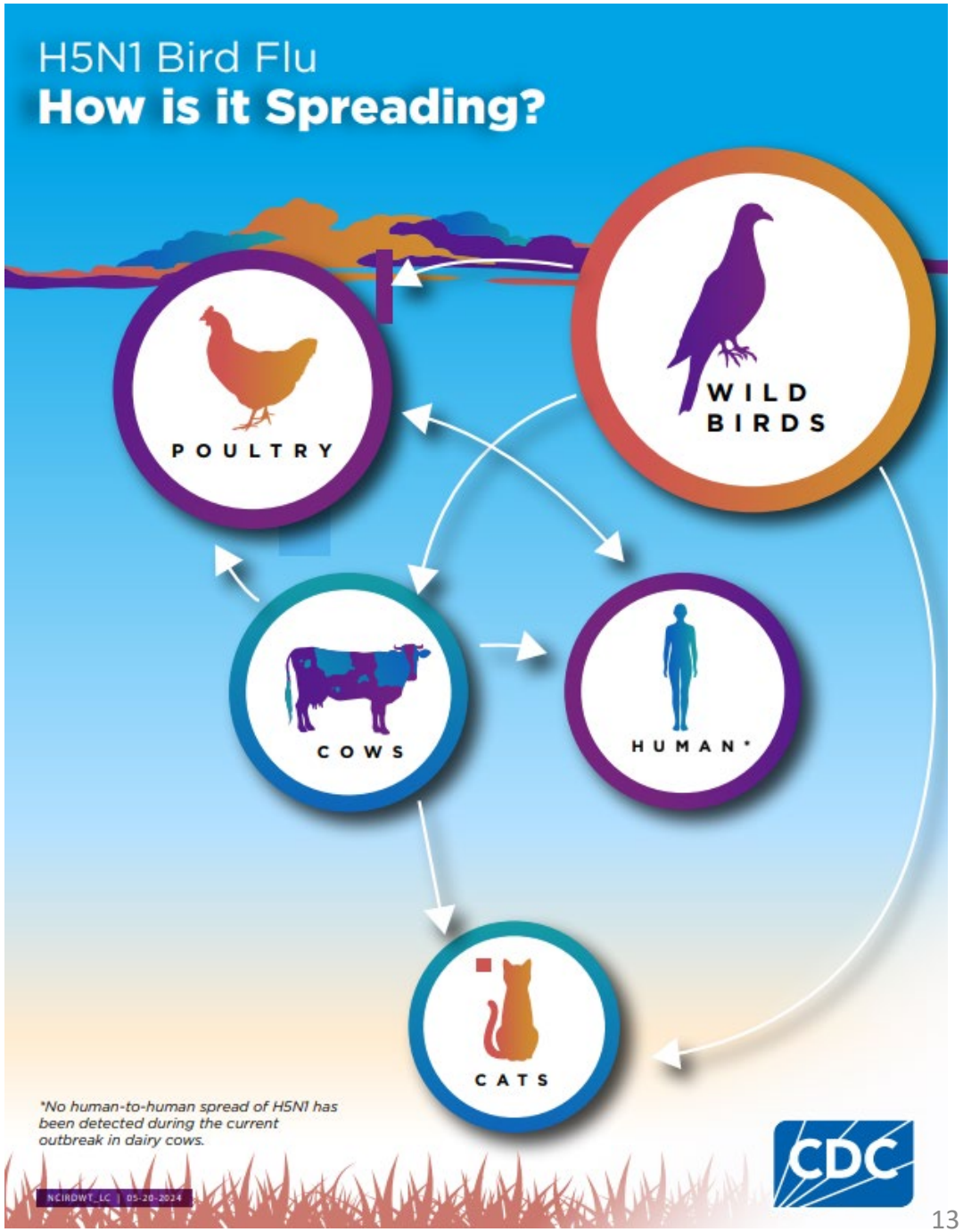
- Characterize human and zoonotic influenza viruses
- Contribute data for biannual vaccine composition
- Generate and evaluate Candidate Vaccine Viruses

- 147 WHO National Influenza Centers in 123 Member States (CDC Atlanta Influenza Laboratory is one)
- 7 WHO Collaborating Centers for Influenza (CDC is one)
- 12 WHO H5 Reference Laboratories

Global Influenza Surveillance and Response System (GISRS) (who.int)

Public Health Risk

- Overall risk to the public remains low
- Increased risk with exposure to infected animals or environment (occupational, recreational)
- Exposed individuals should monitor for symptoms after first exposure and for 10 days after last exposure



Avian Influenza Communication Resources | Bird Flu | CDC

CDC Influenza

Highly Pathogenic Avian Influenza A(H5N1) Virus in Animals: Interim Recommendations for Prevention, Monitoring, and Public Health Investigations | Avian Influenza (Flu) (cdc.gov)

CDC's HPAI A(H5N1) Response Priorities

- CDC leads public health activities and is working closely with USDA, FDA, and state and local public health agencies
- Supporting and engaging public health and agricultural partners using a One Health approach
- Protecting human health and safety
- Understanding risk to people from A(H5N1) viruses
- Assessing A(H5N1) viruses for genetic changes

Avian Influenza Communication Resources | Bird Flu | CDC

Resources from CDC

- **Situation Updates**
  - CDC A(H5N1) Bird Flu Response Update | Avian Influenza (Flu)
- **Surveillance Updates**
  - How CDC is monitoring influenza data among people to better understand the current avian influenza A (H5N1) situation | Avian Influenza (Flu)
- **Technical Report**
  - Technical Report: Highly Pathogenic Avian Influenza A(H5N1) Viruses | Avian Influenza (Flu) (cdc.gov)
- **Updated Recommendations**
  - Highly Pathogenic Avian Influenza A(H5N1) Virus in Animals: Interim Recommendations for Prevention, Monitoring, and Public Health Investigations | Bird Flu | CDC
  - Recommendations for Worker Protection and Use of Personal Protective Equipment (PPE) to Reduce Exposure to Novel Influenza A Viruses Associated with Severe Disease in Humans
- **CDC Public Health Science Agenda**
  - CDC Public Health Science Agenda for Highly Pathogenic Avian Influenza A(H5N1) – June 2024 | Bird Flu | CDC

CDC A(H5N1) Bird Flu Response Update June 21, 2024 | Bird Flu | CDC

CDC Influenza

Questions