

Unified Response: Tulare County's Multidisciplinary Approach to H5N1:

Lessons in Coordination, Innovation, and Preparedness

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HHSA
Public Health



Accredited 2020

Agenda/Objectives

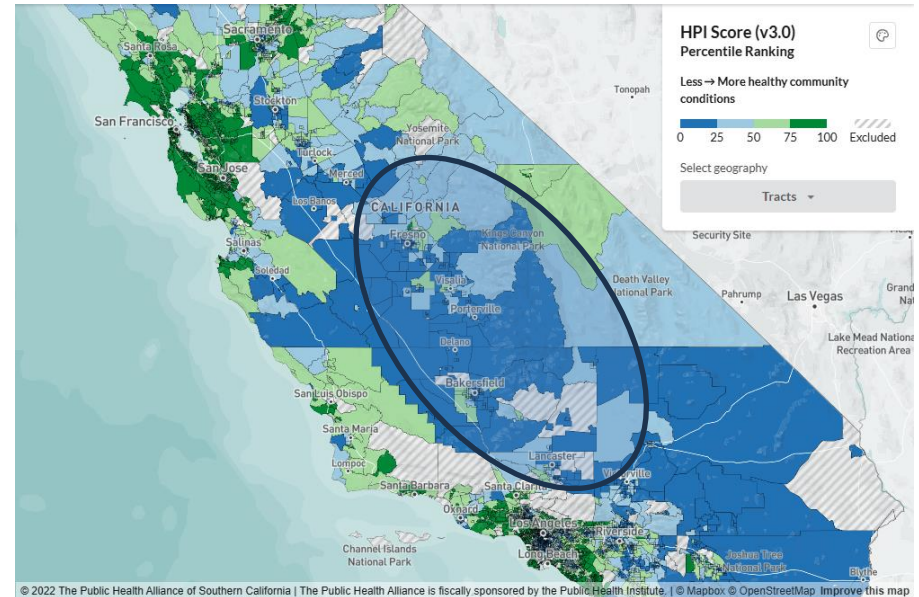
- Understand the timeline & activation of Tulare's H5N1 response
- Explore cross-departmental collaboration
- Review communication strategies & lessons learned
- Participate in an interactive response planning exercise
- Take away practical tools & templates



Who We Are



- Tulare County, CA pop. ~500,000
- Circled area pop. ~2.7 million
- Dairy industry: \$2 billion/year
 - 210 in Tulare County alone
 - Tulare-Kings one of the largest in the U.S.



H5N1 Dairy Outbreak Timeline

Early 2024 – Texas dairies reported new form of mastitis

March 25, 2024 – H5N1 identified as cause of Texas dairy cattle infection

April 1, 2024 – CDC reported first human case exposed to an infected cow in Texas

Additional states report H5N1 in dairy cattle (cow movement), additional human cases

April 2024 - USDA implements dairy cattle testing requirement for between-state movement of dairy cows

August 27, 2024 – Tulare County notified that H5N1 outbreak was identified in 2 dairies

September 2024 – 1st human case of H5N1 identified in Tulare County

September 2024 - First severe case of human H5N1 in U.S., no known exposures

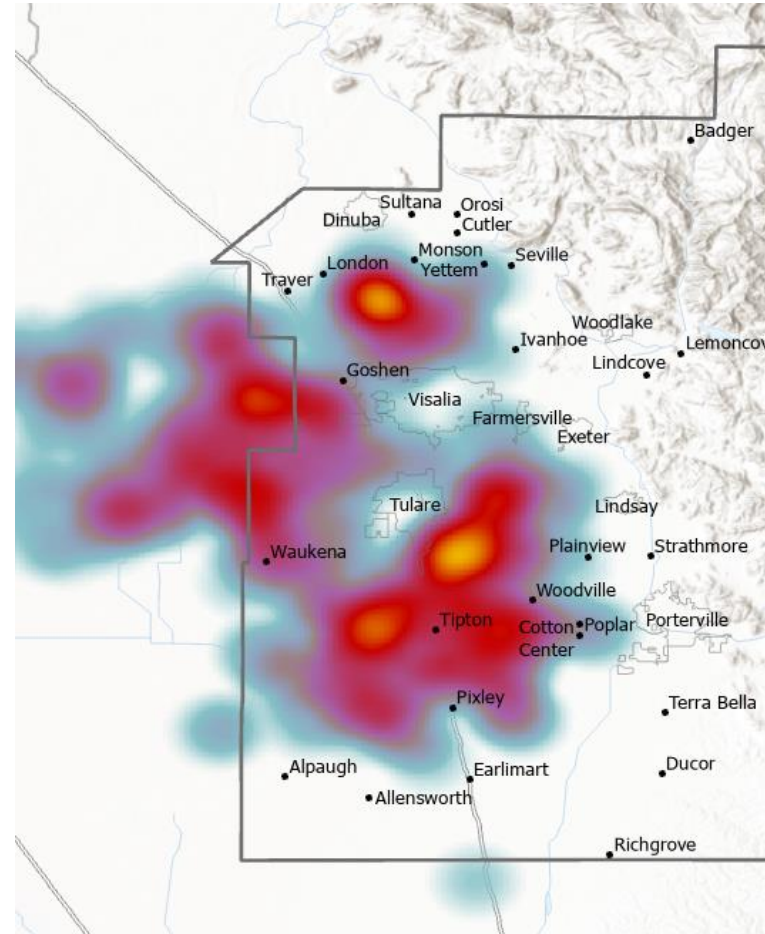
January 6, 2025 - First human death in U.S. (D1.1 genotype, Louisiana)

January 31, 2025 - First dairy herd infected with D1.1 genotype (Nevada)

February 10, 2025 – First human case with D1.1 genotype exposed to cattle (Nevada)

Mapping the Dairies in GIS

- 1st notification of a positive herd received 8/27/24
 - Two herds positive; same owner, but different locations in different cities
- Began spreading rapidly to other dairies in the region



This hotspot map shows where the dairies are concentrated in Tulare County

One Team, Many Roles

- Collaborative meeting with Deputy Health Officer, Communicable Disease (CD), Public Health Nursing (PHN), Epidemiology, Environmental Health (EH), Public Health Emergency Preparedness (PHEP), and Tulare County Public Health Lab (TCPHL) teams
 - CD: assist with worker health monitoring, education materials, and how to communicate symptomatic contacts, if necessary
 - PHN: to monitor symptomatic employees, if necessary
 - EH: added for familiarity, as dairy inspectors work with dairies
 - Lab: explained how they would support testing, if necessary
 - PHEP: provided PPE support

CD: Adapting Under Pressure

Challenge: difficulty connecting with dairy owners

- Incorrect contact information
- Owners busy saving cows
- CD modified its original, collaborative meeting model into a quick phone call model, developed packet of information

Challenge: owner confusion

- Another liaison from another government agency
- Who has jurisdiction over what?
- CD explained intent to assist with required worker monitoring, rather than interrupt work

CD: Adapting Under Pressure

Challenge: lack of line lists

- Owners didn't have complete rosters
- Employees did not want information shared
- CD enrolled owners into CalConnect to use virtual assistant survey on behalf of entire location

Challenge: rapid spread

- 49 affected locations by end of September
- 150 affected locations by end of October
- CD utilized contact tracers and borrowed CDPH CalConnect users

127 owners enrolled in electronic monitoring, +1,500 responses, +2,900 employees monitored

CD/PHN: Adapting Under Pressure

Challenge: testing hesitancy

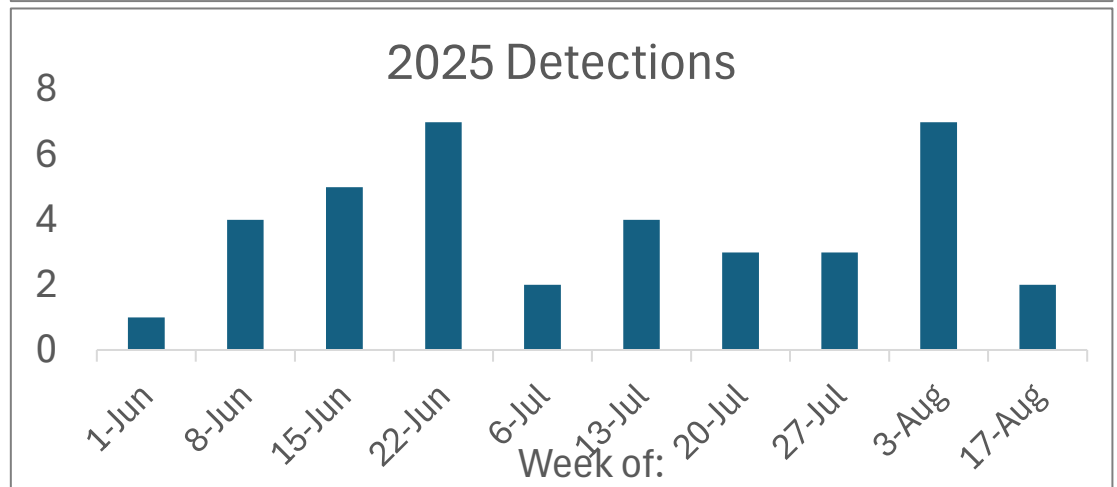
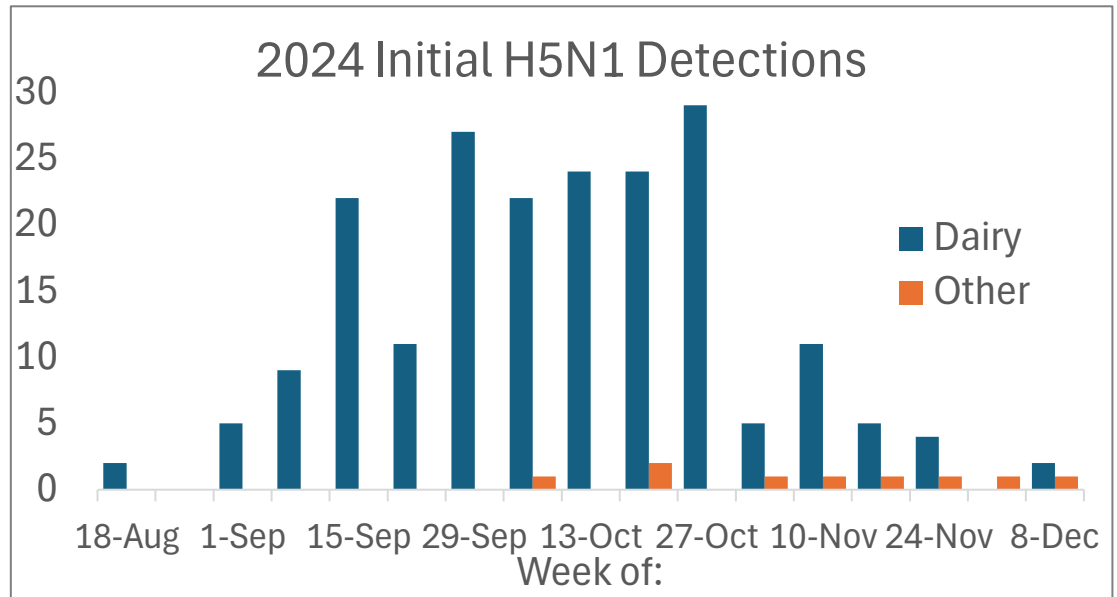
- Owners didn't want employees restricted from work
- Employees hesitant to test
- PHN followed symptomatic referrals and cases for symptom monitoring, Tamiflu distribution, household contact monitoring

PHN followed all 19 human cases. No non-dairy worker contacts tested positive. No human-to-human transmission was detected.

CD/PHN's work alongside CDC helped to inform current work restriction guidance and quicksheet updates.

H5N1 Dairy Epi Curves in Tulare County

- By December 2024, over 200 dairies had been affected
- Between June and August 2025, 38 dairies have been affected with presumably the new strain (D1.1)
- 76 locations are still being monitored



Laboratory: PHL Response Model

CDC required Public Health Laboratories to test exposed symptomatic workers

- Biosafety, biosecurity, expertise, and specific approved reagents
- Quick TAT and direct communication with local public health team and executives
- Since PHLs are embedded within their public health departments, they can focus testing response based on public health team and executive priorities
- Similar structure with other emerging and/or reemerging diseases (MPOX, Zika, Ebola)

Infrastructure developed with PHEP funding for LRN laboratories, like the Tulare County Public Health Laboratory (TCPHL), ensures a network of PHLs that have the required instrumentation and trained personnel to perform molecular testing for emerging and reemerging public health threats

- LRN laboratories also help their surrounding jurisdictions to ensure statewide coverage

Laboratory: Speed, Scale, Support

TCPHL Prioritized a rapid TAT

- Effective internal surge strategies (slightly staggered shifts, good cross-training, TATs for other tests lengthened slightly, non-essential projects deferred, etc)
- Average time from sample collection to arrival at TCPHL: ~ 13.5 hrs
- Average time from sample arrival to reporting of results: ~ 13.7 hrs

Results/data was provided in real-time directly to public health team taking direct action, public health executives, CDPH, and CDC for situational awareness

Regional, statewide, and national impact

- Tested for surrounding counties and out-of-state exposed workers
- Provided conjunctival swabs to 15 local PHLs and CDPH to expand testing capacity across the state
- Provided testing and data to assist CDPH with improvements to home isolation protocols
- Provided testing and data to assist CDC with improvements to sample collection protocols distributed nationally

Laboratory: Lessons Learned

- **A public health testing strategy provides the best data and intervention opportunities**
- **Expect extremely high information demands during these events**
 - International media attention, media requests, BOS requests, public information requests, etc.
 - CDPH and CDC wanted updates, multiple times per day, on all stages of testing and follow-up
- **Data directly from public health laboratories is often the highest quality data available in those crucial early weeks**
 - Public Health cannot rely on electronic reporting systems, such as CalREDIE during dynamic newly emerging public health emergencies
 - Due to competing priorities, it takes commercial labs a significant amount of time to implement and offer new tests and/or to report effectively to public health during public health emergencies.

EH: On the Front Lines

Tulare County Overview

Milk Inspection Program

- Approximately 300 Dairies (Covers 2 counties Tulare and Kings)
- Approximately 13 Goat Dairies (unaffected by H5N1)
- 4 Registered Dairy Inspectors and 1 Aid

H5N1

- First H5N1 confirmed positive (cow) and quarantine- August 2024
- DOC activated August 2024- March 2025

EH: On the Front Lines

Last Sit Rep

- 188 infected cattle herds
- 9 infected Flocks

Initial Response to Dairies

- CDFA-boots on ground
 - Inspection staff sidelined to protect potential for spread
 - CDFA resource request
 - Milk sampling for dairies under surveillance
 - Liaison with CDFA (Emergency Response Coordinator)
 - Environmental sampling assistance backyard flocks

EH: On the Front Lines

Current Status

- January 2025
 - Milk inspections resume for released farms
 - Waiver still in affect from CDFA/USDA
 - Waiver allows for reduced oversight of milk inspections due farms and redetections but allows for surveillance of milk quality for public health and safety
- February-September 2025
 - Milk Inspections with continuous updates of redetections, releases
 - Waiver expected to lift by end of year

PHEP: Planning Meets Reality

Key areas where planning translated into real-world actions:

- Department Operations Center
- Tabletop Exercise Outcome
- Training of Dairy Inspectors
- PPE Distribution
- Establishment of Testing/Treatment Sites
- Medical Countermeasures
- After Action Report/Corrective Action Plan

PHEP: H5N1 Tabletop Exercise

- As H5N1 progressed throughout the country it became a matter of “when” not “if”
- PHEP organized a multidisciplinary tabletop exercise with representatives across sectors
- Held in August with 85 participants with local, state, including local, state, and federal partners
- Identified areas for improvement in preparedness and created valuable networking opportunities



PHEP: TTX Participating Agencies

Public Health Programs	Local Partners	State Partners	Federal and Industry Partners
Public Health Emergency Preparedness	Fresno County	CDPH Epidemiology	USDA
Public Health Lab	Madera County	CDPH CPR	CDC
Epidemiology	Kings County	UC Davis Tulare Lab	Dairy Farmers of America
Deputy Health Officer and Leadership (Director)	Kern County/RDMHS	UC Davis Vet School	Land of Lakes Creamery
Public Health Education and PIO	Kaweah Health, Adventist Health, Sierra View	California Department of Food and Agriculture	Tulare County Farm Bureau
Public Health Nursing	American Ambulance, Lifestar Ambulance		
Environmental Health	Family Healthcare Network, Omni Healthcare		

PHEP: Point of Distribution

The decision was made to proactively set up PODs (Points of Distribution) where dairies could drive through and obtain PPE.

- They were held at trusted locations such as creameries and the AG commissioner's office
- Minimal information was obtained, preserving privacy
- Dairies in Kings County participated
- 10 large scale Point of Distribution events were held in total



Over 1.7 million pieces of PPE were distributed to Tulare County dairy workers to date (Over 10% of the national total).

PHEP: Establishment of Testing Sites/Treatment: Partnerships

- While some counties in other states had a single collection location, we realized early on that this would cause barriers.
- PHEP worked to develop a network of testing/treatment sites in the county with equitable distribution at the heart of it.
- A team was created and met with interested clinics via Teams to make presentations that included:
 - Lab representative
 - PHEP representative
 - Communicable Disease representative

17 Testing Sites were onboarded

PHEP: Planning Considerations

- Is there a process for receiving local outbreak notifications in animals from the state? Who is the appropriate contact?
- What does the initial coordination piece look like between federal, state, and local entities? How can we combine efforts in order avoid duplication? Especially regarding the following:
 - Farm biosecurity
 - Reducing spread
 - Human contact monitoring
 - Personal Protective Equipment (PPE) distribution
 - Public messaging

Lessons Learned: Our Takeaways

Public Health Laboratory

- A public health testing strategy that includes the public health laboratory network provides the best data and intervention opportunities. Public health labs can help meet extremely high information demands during these events. Data directly from public health laboratories is often the highest quality data available in those crucial early weeks

Communicable Disease/Public Health Nursing

- We employed flexibility and adaptability in the face of rapidly evolving challenges. We shifted our approach to meet people where they were with a collaborative, solutions-focused approach. We leveraged our virtual tools, like CalConnect, to build trust and ensure an effective response.

Public Health Emergency Preparedness

- We strengthened relationships with partners before the incident, which built trust and enabled rapid coordination. Prior planning and exercises gave staff clarity and confidence, allowing the response to run smoothly. By taking a proactive approach rather than reacting, we were able to anticipate needs, stay ahead of challenges and maintain an effective response



Questions?



THANK YOU!

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