



## State Public Health Response to 2015 HPAI Outbreak

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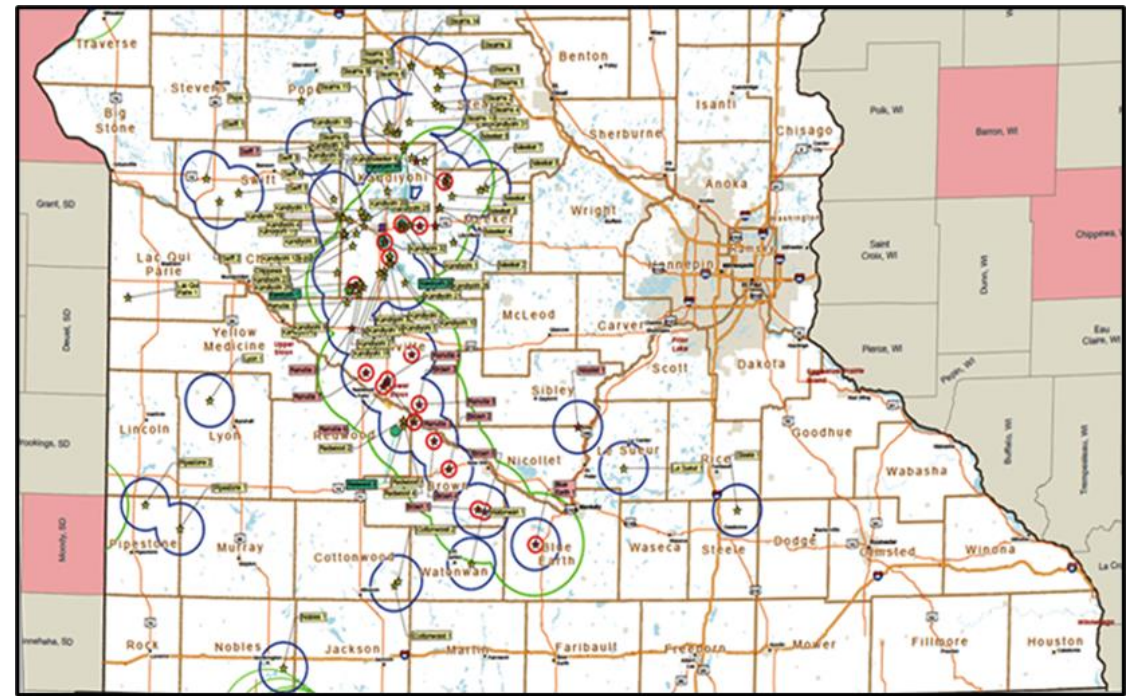
# Poultry production in Minnesota

- MN ranked #1 in turkey production and processing in the U.S.
  - 600 turkey farms
  - 40-42 million meat turkeys annually
  - MN breeder flocks supply the nation with turkey poults
- MN ranked #13 in egg production
  - 10 million layers
- MN ranked #19 in broiler production
  - 300 broiler chicken farms
  - 58 million broilers annually

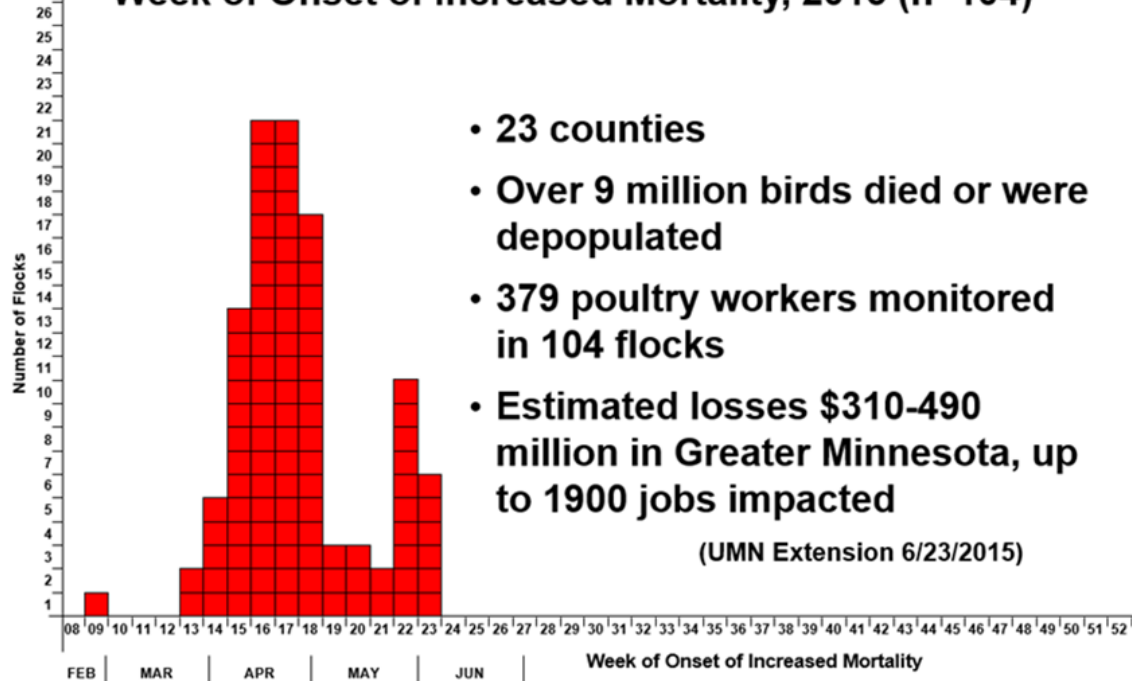


# HPAI H5N2 in Minnesota, 2015

- First detection 3/4/2015
- 104 premises affected, plus six epi-linked premises



**HPAI H5N2-Infected Poultry Flocks in Minnesota by Week of Onset of Increased Mortality, 2015 (n=104)**



- 23 counties
- Over 9 million birds died or were depopulated
- 379 poultry workers monitored in 104 flocks
- Estimated losses \$310-490 million in Greater Minnesota, up to 1900 jobs impacted

(UMN Extension 6/23/2015)

- 75 commercial turkey growers
- 23 breeder turkey facilities
- 4 table egg layer facilities
- 1 chicken pullet grower
- 1 backyard chicken and duck flock

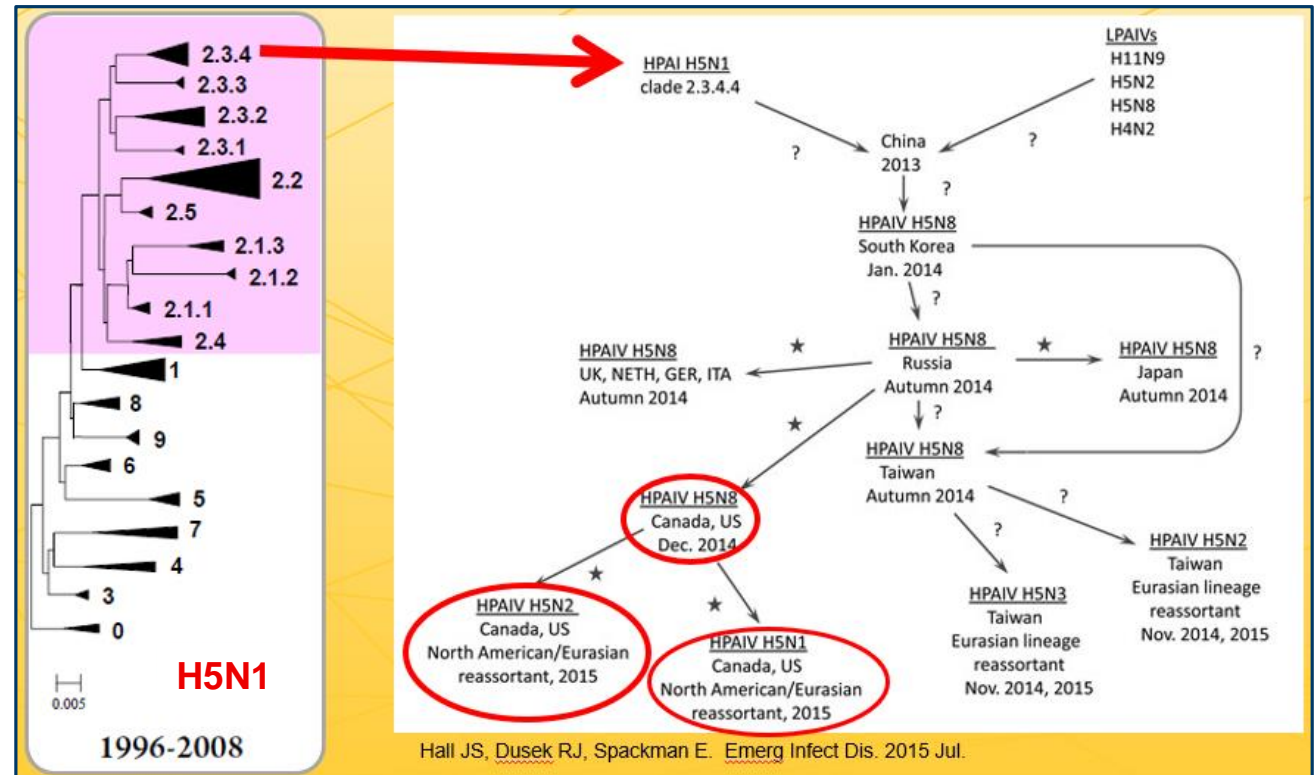
# Role of Minnesota Department of Health (MDH)

- Protect human health
- Support other responding agencies
- Monitor the health of people in direct contact with infected birds
- Provide guidance on infection control and use of PPE for producers, poultry personnel and responders
- Serve as a source of information for the industry and the public
- Provide public health perspective on the Board of Animal Health Avian Influenza Emergency Disease Management Committee



# What did we know about this high path H5N2 virus at the time?

- Descendant of the Asian lineage H5 that is known to infect people
- North American/Eurasian reassortant
- No molecular markers associated with increased virulence and transmission in mammals
- No molecular markers associated with NA inhibitor resistance
- Many opportunities for disease transmission reported from western states, yet no cases reported



# MDH actions and responsibilities

- Recommended human seasonal influenza vaccination and provided recommendations for PPE
- Interviewed poultry workers for work duties, flock contact, PPE usage, and illness history
- Assessed exposure based on contact and PPE usage
- Recommended antivirals based on exposure and risk of severe disease with influenza
- Initiated active surveillance for respiratory symptoms in people exposed to test-positive poultry premises – “Monitoring”
- Coordinated testing for symptomatic poultry workers
  - Joint effort with MDH Influenza Unit

# Poultry worker monitoring

- Flock managers were expected to provide employee contact information
  - Participation by individual poultry workers was voluntary
- Exposure defined as any contact with birds or entering any barn on a test-positive premises
- Exposed persons were contacted for 10 days to detect onset of symptoms compatible with avian influenza
  - Infected barns – Every day for 10 days
  - Healthy barns – Days 0, 5 and 10
- Initial interview by phone. Subsequent monitoring was conducted via preferred method: phone, text, email
  - 55% of poultry personnel preferred texting

# MDH monitoring experience

- 104 flocks: interviewed, evaluated, and monitored
- 379 (86%) of 439 poultry workers interviewed and monitored
  - 198 (53%) of 379 recommended oseltamivir
    - 119 (60%) agreed to take prophylactic oseltamivir
- 15 (4%) poultry workers reported symptoms and were evaluated and tested
  - No cases of avian influenza
- 437 poultry workers for whom primary language was known
  - 363 English; 62 Karen; 12 Spanish speakers





# Compliance with recommended PPE

PPE Component	Total (%) n = 379
Coveralls	263 (69.9)
Gloves	291 (77.4)
Boots	297 (79.0)
Eye protection	186 (49.1)
Mask	254 (67.6)

- 194 (51%) did not adhere to wearing all recommended PPE components
- Poorest compliance with wearing eye protection
- As outbreak progressed, compliance improved

# Two outbreaks among responders

- Campylobacteriosis
  - 5 cases among responders on farms
  - 2 hospitalized, 1 ED visit
  - Recommended clean trailer for resting and eating
- Influenza B
  - 30 cases identified in 2 MN EOCs
  - Recommended immediate evaluation, Tamiflu, and isolation for symptomatic responders
  - Flu vaccination prior to deployment



# Successes and challenges

- Great cooperation from the poultry industry and poultry workers
    - <1% lost to follow up during monitoring
    - Company Occ Health willing to facilitate and pay for prophylaxis
  - ED's, urgent care and clinics willing to assess ill poultry workers and responders
  - Materials and innovations shared regionally and nationally
- State and USDA responders had been asked to self-monitor – bad idea
    - Transient responder population
    - Rotation every 3 weeks
    - Unclear when or how to report illness
  - USDA depopulation and C/D contractors
    - Rapid and large deployment
    - No designated point of contact to address health issues

# What we are planning for 2022

- Monitoring of poultry personnel *and* Board of Animal Health, MN Department of Agriculture and MN USDA responders
- Increased emphasis on PPE, N95 or PAPR usage, for everyone in the barns, including producers
- Poultry company employee and state/federal responder contact lists prepared in advance and provided to MDH as needed for test-positive premises
- RedCap database and automated email-based daily monitoring
- Biggest lesson from 2015 to apply to 2022: There is a clear need for public health to be a full partner in the response to HPAI. In Minnesota, we are.

# Thank you!

## Acknowledgements:

- Poultry industry
- Minnesota Board of Animal Health
- USDA APHIS VS
- Minnesota Department of Ag
- University of Minnesota
- MDH Zoonotic Diseases Unit
- MDH Influenza Unit
- MDH Public Health Laboratory

