Pullorum-Typhoid, Avian Influenza, and Exotic Newcastle Disease Control Programs

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Objectives

- Discuss the decrease in the prevalence of fowl diseases: pullorum, typhoid, influenza, and exotic Newcastle
- Understand that health regulations prevent the spread of disease
Pullorum-Typhoid (P-T) Diseases

- Pullorum
  - *Salmonella pullorum*
  - Infectious to chickens and turkeys

- Fowl Typhoid
  - *Salmonella gallinarum*
  - Infectious to poultry
- Bacterial diseases
- High mortality
- Transmission
  - Spreads to day-old chicks by infected breeders through hatching eggs
- Highly transmissible
- No vaccine
- Reportable
  - Quarantine and depopulation
National Poultry Improvement Plan (NPIP)

- 1935 – USDA program
- Voluntary state-federal cooperative testing and certification program
  - Identify U.S. P-T clean flocks and states
- Improve poultry, products, and hatcheries.
Sale and Movement of Poultry

- Interstate and international movement
  - Hatching eggs and poultry originate from flocks participating in the NPIP

- Public exhibition and sale
  - P-T tested negative or originate from certified P-T free flock

- Sale or trade
  - All breeders register with state P-T Program Office
Avian Influenza (AI) (Bird Flu) (Avian Flu)

- Viral disease
- Caused by influenza strain A virus
- Types of virus
  - High mortality (HPAI) – FAD, potentially zoonotic
  - Low mortality (LPAI) – ED in U.S.
Over 144 subtypes of type HN
- By combinations of 16 Hs and 9 Ns surface proteins
  - H = Hemagglutinin
  - N = Neuraminidase
  - Examples = H1N1, H1N2, H2N2, H5N1, H7N2

Subtype re-assortments and mutations
- H1N1 swine + H1N1 bird + H1N1 human
- DNA of one or more subtypes
- 2009 H1N1 Flu
- Risks of epidemics and pandemics
- Bioterrorist agent
Migratory waterfowl – ducks, geese, shorebirds
Domestic poultry
Highly transmissible
- Direct, close contact – feces, saliva, nasal secretions
- Aerosol
- Indirect contact – contaminated environment
No vaccine
Reportable
- Quarantine and depopulation
### Exotic Newcastle Disease (END)

- **Viral disease of fowl**
  - Domestic poultry – chickens and turkeys
- **A FAD**
- **High mortality**
- **Highly transmissible**
  - Direct, close contact – feces, saliva, nasal secretions
  - Aerosol
  - Indirect contact – contaminated environment
- **Available vaccine**
- **Reportable**
  - Quarantine and depopulation