

# ND in Commercial Flocks

## Risk Factors

### ➤ **Primary source**

- Employees, association with game fowl
- Proximity to infected neighborhoods
- Illegally imported or smuggled birds especially parrots

### ➤ **Secondary sources**

- Marketing links
- Direct marketing links
  - Shared racks, flats, egg/feed trucks, *etc.*

# Virulent Newcastle Disease (ND) - Birds Susceptible

- All birds, even vaccinated birds, are susceptible to infections with all pathotypes of NDV. Usually only velogenic (both neurotropic and viscerotropic) strains cause high levels of mortality.
- Mesogenic and velogenic strains of NDV are both reportable.
  - Little mortality in unvaccinated chickens of any age with mesogens. Clinical signs minimal. May see neurological signs in younger birds.
- 90 – 100 % mortality in unvaccinated chickens of any age with virulent strains
- Turkeys, quail and other gallinaceous birds are also highly susceptible
- Pigeons, cormorants, gulls, pelicans, psittacines and other wild birds are susceptible and may serve as carriers
- Ducks and geese are relatively resistant to disease but can be infected and shed virus

# Virulent ND – Clinical Signs

- **Incubation period: 2 to 15 days.**
- **Signs and mortality varies with:**
  - strain of the virus, dose, route of exposure
  - host species, age, nutritional status
  - immunity, vaccination
  - concurrent infections, stress
- **Lentogenic strains** — lentogenic strains are often used as vaccines. These NDV of low virulence may also cause respiratory signs, drop in egg production and abnormal shell quality. However, this disease is not defined as ND and is not reportable.

# Virulent ND – Clinical Signs (Cont.)

- Prior vaccination may influence signs- layers with high ND antibodies may show no clinical signs of disease upon infection except a drop in egg production with abnormally shaped eggs.
- Depression, weakness, down on legs, reluctance to move, dyspnea, etc.
- Diarrhea (common with viscerotropic strains)
- Swollen head/eyes, hemorrhagic conjunctiva
- Increased Mortality
- Tremors, paralysis, twisting of the head and neck (mostly with neurotropic strains, but commonly seen in birds with partial immunity to ND with viscerotropic strains)
- Rule/out HPAI, ILT, Aspergillosis, Fowl Cholera, toxicosis

# Game chicken infected with virulent ND exhibiting depression and reluctance to move



**Game chicken infected with virulent ND showing drooling of mucus from the mouth**

