Often referred to as Avian Distemper or Velogenic Viscerotropic Newcastle Disease, (VVND), Newcastle Disease is one of the most serious of all avian diseases. First identified in 1926 in Newcastle-on-Tyne in England, the disease was later found in the United States in 1944. Now, the disease has spread to include world-wide avian populations, affecting birds of all ages. It is most prevalent, however, in birds imported from Southeast Asia and Central America.

What causes Newcastle Disease?

Newcastle Disease is caused by a virus (paramyxovirus, of the Group 1 serotype). Especially aggressive, the first widespread outbreak of Newcastle Disease occurred in the United States in southern California. In 1972, infected birds in an exotic aviary spread the infection to chickens on neighboring farms. Before it was over, millions of chickens either died or were euthanized in a successful attempt to control further spread. This outbreak was directly responsible for the USDA's adoption of quarantine systems for imported birds in 1974. Since that time, there has not been another outbreak of similar severity.

How is Newcastle Disease transmitted?

With an affinity for red blood cells, the virus spreads rapidly throughout the body. The virus is highly contagious and spread in droppings and nasal discharge via direct contact, through the air, or on contaminated items such as bottoms of shoes, food, or infected dishes and cages. The virus can also penetrate eggshells that come in contact with infected tissue or food, thereby, infecting the embryo. It can survive outside a host for several weeks in a warm and humid environment and indefinitely in frozen material.

What are the signs of Newcastle Disease?

The incubation period (time from exposure to the development of signs of disease) is 4 to 7 days. In general, signs can include ocular and/or nasal discharge, dyspnea, and bloody diarrhea. Central nervous system signs can also occur, including depression or the opposite-hyperexcitability; vestibular or balance problems; tremors, especially of the head and neck; weakness; and partial or total paralysis. The onset of signs may be semi-acute to sudden death. Signs vary depending on the strain of virus and the species of bird.

How is Newcastle Disease diagnosed?

The diagnosis is made by isolating the virus from either the feces of live birds or the organs of infected animals available at necropsy. All suspect cases must be reported to the United States Department of Agriculture (USDA), and analysis must be done in a government-approved laboratory. Once diagnosis is confirmed, the USDA will make recommendations on the euthanasia and disposal of infected birds, and the administration of quarantines to prevent spread.

What is the treatment for Newcastle Disease?

There is no treatment or vaccine; however, injections of hyper-immune serum have been used to protect exposed birds before they become symptomatic. When birds begin showing symptoms, this is ineffective. Unfortunately, the prognosis for this disease is poor, with nearly a 100 percent mortality rate, once infected.

How is Newcastle Disease prevented?

Since the quarantine requirements were introduced in 1974, the incidence of Newcastle Disease has been greatly reduced, but it is not yet eradicated worldwide. Although hearty and able to survive in many environments, the virus is destroyed rapidly by dehydration and exposure to ultraviolet rays (sunlight).

The following protocols and recommendations are helping to reduce the incidence of Newcastle Disease:

- All birds to be imported into the United States must be quarantined in facilities outside the country for 30 days before entering the U.S.
- All suspected cases of Newcastle Disease must be reported to the USDA.
- Newly acquired birds should be isolated for at least 30 days - 6 weeks is better. Set aside shoes and clothing to be worn only in the quarantine area.
- Certification should be requested from the supplier of your birds that confirms your bird or birds are legally imported or are raised in the U.S. A health certificate should be requested and you should verify that the bird(s) will be transported in new or thoroughly disinfected cages. The biggest contributor to the spread of Newcastle Disease is the avian smuggling industry.

The USDA has made the following recommendations to poultry farmers:
• Allow only essential workers and vehicles on the farm or at least only in the areas immediately adjacent to and including the poultry houses.

• Provide clean clothing and cleansing facilities for employees.

• Clean and disinfect vehicles (including tires and undercarriages) entering and leaving the farm.

• Avoid visiting other poultry operations.

• Maintain an all-in, all-out philosophy of flock management:
  • Control the movement of all poultry and poultry products from farm to farm.
  • Do not cull mature birds from a flock to be sold in a live market.
  • Clean and disinfect poultry houses between each lot of birds.

• Do not keep pet birds on the farm.

• Protect flocks from wild birds trying to nest in poultry houses and do not feed flocks combined with domestic birds.

• Maintain strict controls over the disposal and handling of bird carcasses, litter, and manure.

• Bring diseased birds to an approved laboratory for examination.

We can all play a role in helping to eliminate this deadly avian disease by following the guidelines above. Any poultry or pet bird owners or veterinarians who suspect a bird may have Newcastle Disease, should immediately contact State or Federal animal health authorities. Any suspicions regarding suppliers should also be reported.