NVAP Reference Guide: Exotic Newcastle Disease

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NVAP Reference Guide: Table of Contents

Preface

Introduction

Control and Eradication

- Brucellosis
- Johne’s Disease
- Pseudorabies (PRV)
- Tuberculosis
- Transmissible Spongiform Encephalopathies
- Scrapie
- Bovine Spongiform Encephalopathy (BSE)
- Chronic Wasting Disease (CWD)

Poultry

- National Poultry Improvement Plan (NPIP)
- Avian Influenza (AI)

- Exotic Newcastle disease (END)
- Equine Disease

Aquatic Animal

- Aquatic Animal National Health Plan
- Aquatic Animal Health Activities

Animal Health Emergency Management

- Animal Health Emergency Management
- Emergency Response Structure
- National Response Framework (NRF)
- National Incident Management System (NIMS)
- National Animal Health Emergency Management System (NAHEMS)
- Foreign Animal Disease Preparedness and Response Plan (FAD PReP)
- FAD Recognition and Initial Response
- National Animal Health Emergency Response Corps (NAHERC)
- Notifiable Diseases and Conditions
- WOAH and International Standards
- Cleaning and Disinfection
    - Importance of Cleaning & Disinfection
    - Cleaning
    - Disinfection
    - Regulation of Disinfectants
    - Safety
- Disease Surveillance
- Laboratory Submissions

Animal Movement

- Interstate Regulations
- Interstate Movement of Cattle, Horses, Swine, Sheep and Goats
- Issuing Interstate Animal Movement Documents
- International Animal Movement
- Issuing International Health Certificates (IHCs) for Live Animal Movement
- Common Problems Observed on Certificates for Live Animal Movement

Animal Identification

- Animal Identification
- Cattle Identification
- Swine Identification
- Equine Identification
- Sheep and Goat Identification
- Fowl Identification
- Compliance and Regulations

Appendix

- A: 9 CFR PARTS 160, 161, and 162
- B: APHIS VS District Offices
- C: State Animal Health Officials
- D: Forms
- E: Other Organizational Information with Contact Points
- F: Web Sites
- G: Equine Teeth and Aging

END is a contagious and fatal disease affecting all species of birds. Previously known as velogenic viscerotropic Newcastle disease, END is one of the most infectious diseases of poultry in the world. The mortality in unvaccinated birds can reach 100 percent, and birds may die without any clinical signs of disease. Though recommended and widely used, vaccination does not fully protect against END and may obscure the disease, resulting in further spread.

Identifying Affected Birds

END affects the respiratory, digestive, and nervous systems. The incubation period ranges from 2 to 15 days. An infected bird may exhibit some or all of the following signs:

- Sneezing, gasping, nasal discharge, coughing;
- Greenish, watery diarrhea;
- Depression, muscular tremors, droopy wings, opisthotonus, circling, and complete paralysis;
- Partial to complete drop in egg production and thin-shelled eggs;

- Swelling of tissues around the eyes and in the neck;
- Sudden death; and
- Increased flock mortality.

Epidemiology

END is spread primarily through direct contact with droppings and nasal, ocular, or oral secretions of infected birds. The virus is present in high concentrations in body fluids and discharges and spreads rapidly through birds in confinement. The virus can be carried from one premises to another on contaminated shoes and clothing of service crews and visitors and their contaminated vehicles. END virus survives for several weeks in a warm and humid environment on feathers and in manure and other materials and can survive indefinitely in frozen material. It is rapidly destroyed by dehydration and ultraviolet rays. Smuggled psittacines, especially Amazon parrots from Latin America, pose great risks for introducing the virus into the United States. These parrots are asymptomatic carriers and can carry the virus for up to 400 days.

Biosecurity Measures on the Farm

Veterinarians should work with poultry producers to strengthen biosecurity practices. Established and enforced biosecurity protocols will help prevent introduction of END and other infectious agents. Recommend biosecurity measures include:

- Establishing an “all-in, all-out” flock-management policy;
- Protecting against exposure to wild birds or water or ground contaminated by wild birds;
- Closing bird areas to nonessential personnel or vehicles;
- Providing employees with clean clothing and disinfection facilities and directions for their use;
- Thoroughly cleaning and disinfecting equipment and vehicles (including tires and undercarriage) when entering or leaving the farm;
- Banning the borrowing or lending of equipment or vehicles;
- Banning visiting other poultry farms, exhibitions, fairs, and sales or swap meets (if visits must occur, direct workers to change footwear and clothing on their return); and

- Banning bringing birds in slaughter channels back to the farm.

Reporting Suspicious Diseases and Illegal Bird Movements

Veterinarians may receive information regarding illegal introductions of birds from countries at risk for END. All such incidents should immediately be reported to both the Assistant District Director (AD) and the State Animal Health Official. Once END has been introduced, the only way to eradicate it is through depopulation, cleaning and disinfection, and strict quarantine. Practitioners are encouraged to educate their poultry clientele and pet bird owners to report all signs of disease. If signs of disease resemble END or cannot be diagnosed, they should immediately be reported to the AD or State animal health official.

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