Schematic epidemiology of Beak and Feather Disease Virus (BFDV) in parrots

Susceptible parrots

Healthy parrots of different ages and species



- Naïve birds can become infected
- All parrot species are susceptible
- **Young birds are most vulnerable**

Acute infection in chicks / juveniles



- Feather dystrophy, poor feather growth
- Beak lesions and deformities
- Immunosuppression
- Poor growth and condition
- May lead to death

Young birds are most vulnerable

Chronic infection



- Progressive feather abnormalities (broken, brittle, absent feathers)
- Beak changes and overgrowth
- Immunosuppression
- Chronic, often lifelong infection

PI birds (persistently infected birds)



- Birds infected early in life that survive and remain long-term carriers
- May have mild or no obvious signs
- Continuously or intermittently shed virus

PI birds may act as key long-term reservoirs

Infection

Infection

Infection / maintenance

Infection and long-term carriage

Infected breeding birds

Vertical transmission / egg-associated transmission



- From infected breeding birds to eggs / chicks
- Infection can occur in the egg or shortly after hatching (e.g. via parental feeding)

BFDV

Virus shedding



- Feather dust / dander
- Feathers
- Feces
- Crop secretions / oral secretions

Infected chicks / juveniles

Horizontal transmission

Direct contact between birds
Parental feeding
Flock contact
Contaminated environment / fomites

Recovered / subclinical birds (optional)



- Some infected birds may remain subclinical or recover
- Can still shed low levels of virus
- Likely contribute less to transmission than PI birds

Breeding flock / aviary population



- Spread within groups via direct contact, parental feeding, flock contact and contaminated environment / fomites
- Movement of infected birds between aviaries and collections can introduce and spread BFDV
- PI birds maintain circulation within populations

Environmental contamination



- Contaminated nest boxes, aviaries, surfaces, dust, feeding equipment
- Virus can persist in the environment for long periods (weeks to months)

Young birds are most vulnerable to BFDV infection and severe disease.

Feather dust and contaminated nesting environments are important sources of spread.

PI birds may act as key long-term reservoirs, maintaining BFDV in parrot populations.