Prevention

The National Association of State Public Health Veterinarians (2010) provides an excellent summary of measures to prevent and control avian chlamydiosis and psittacosis. Some of the key points are:

- Practice good husbandry to reduce stress in pet and store birds. Position cages to prevent the transfer of fecal matter, feathers, food, and other materials. Exhaust ventilation should be sufficient to prevent accumulation of aerosols and prevent cross contamination of rooms.
- The bottom of the cage should be made of a wire mesh. Solid-sided cages or barriers should be used if cages are adjoining. Substrate/litter that will not produce dust (e.g., newspapers) should be placed underneath the mesh.
- Clean all cages, food bowls, and water bowls daily. Soiled bowls should be emptied, cleaned with soap and water, rinsed, placed in a disinfectant solution, and rinsed again before re-use. Cages should be thoroughly scrubbed with soap and water, disinfected, and rinsed in clean running water before housing new birds.
- Inform all persons in contact with birds or bird-contaminated materials about potential health risks. Pet store workers and owners of psittacine birds should consider any flu-like symptoms as possible psittacosis, and inform their healthcare providers that they have had contact with psittacine birds. Confirmed cases of psittacosis in people should be reported to public health authorities.
- When cleaning cages or handling potentially infected birds, caretakers should wear protective clothing, which includes gloves, eyewear, a disposable surgical cap, and an appropriately fitted respirator with N95 or higher rating. Surgical masks might not be effective in preventing transmission of C. psittaci.
- Necropsies of potentially infected birds should be performed in a biological safety cabinet. The carcass should be moistened with detergent and water to prevent aerosolization of infectious particles during the procedure.

Symptoms, Diagnosis and Treatment

Psittacosis is not a common disease; according to the Centers for Disease Control and Prevention (CDC), fewer than 50 cases have been reported annually since 1996 (CDC Psittacosis web page). From 2005-2009, 66 cases were reported to CDC although it is likely that additional asymptomatic or mild cases were not diagnosed or reported. The disease develops 5-14 days after exposure, and symptoms range from mild non-specific illness to serious respiratory problems including pneumonia; in severe cases, other organs may be damaged. Typically, patients experience flu-like symptoms including fever, chills, headache, muscle aches and dry cough. Antibiotic therapy with tetracycline drugs is effective and full recovery is expected over 2-3 weeks (NAHSPV 2010, Medline 2013). Persons exposed to birds with avian chlamydiosis should seek medical attention if they develop influenza-like symptoms or other respiratory tract illnesses.

Acute clinical signs of *Chlamydia psittaci* in birds are ruffled appearance, poor appetite, weight loss, lethargy, respiratory disease, and lime green droppings. Some birds have ocular discharge, leading to the term “one eyed cold” (Long Beach Animal Hospital web page). Many infected birds show no symptoms of disease but can shed bacteria in droppings and secretions. Chronically infected birds may have tremors, unusual head movements or paralysis of the legs. Doxycycline is also effective in treating birds, with the course of treatment generally being 45 days (NAHSPV 2010, AvianWeb 2013).

Disease Vectors

Psittacosis is an infection transmitted to humans from birds, caused by the bacterium *Chlamydia psittaci*. The infection is called avian chlamydiosis in birds where it has been found in over 450 species (NAHSPV 2010) and caused symptoms in roughly 150 species (Eidson 2002). As the scientific name implies, this disease is more common among members of the parrot family with 57 species susceptible, but the infection also occurs in pigeons, all species of poultry, and shore birds. The primary transmission route to humans is from breathing dried secretions or excretions from infected birds, primarily feces, feathers or other contaminated material that becomes airborne. Those at risk include workers in places with concentrations of bird droppings (e.g., pet stores, poultry farms, poultry processing plants, and aviaries) and veterinarians with repeated exposure to infected animals. Individual pet owners who have inadvertently purchased an infected bird are also susceptible. There have been few documented cases of human-to-human transmission of psittacosis.

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To the extent possible, bird cages should be placed to prevent the transfer of fecal matter, feathers, food, and other materials. Cages, bowls and substrate should be cleaned and/or disinfected often to remove possible sources of infection. Particulate matter should be removed before disinfecting with ammonium compounds or bleach.

Avoid purchasing or selling birds that have signs consistent with avian chlamydiosis.

Pet stores should avoid housing together birds from different sources, and should consider quarantining newly acquired susceptible species.

Quarantine newly acquired or exposed birds and isolate ill birds in a separate air space from other birds and non-caretakers.

Birds that have been to shows, exhibitions, fairs, and other events should be quarantined for at least 30 days and tested before they are returned to a group.

Birds with frequent public contact (e.g., bird encounters, long-term care facilities, schools) should be tested in consultation with a veterinarian to reduce potential human exposure.

Test birds before they are to be boarded or sold on consignment and house them in a room separate from other birds pending test results.

Prevent the spread of infection.

- Thoroughly scrub soiled cages with a detergent to remove all fecal debris, rinse and disinfect (most disinfectants require 5-10 minutes of contact time), and re-rinse to remove the disinfectant.
- Discard all items that cannot be adequately disinfected (e.g., wooden perches, ropes, nest material, substrate/litter).
- Minimize the circulation of feathers and dust by wet mopping the floor frequently with disinfectants; prevent air currents and drafts within the area.
- Reduce contamination from dust by spraying the floor with a disinfectant or water before sweeping it. A vacuum cleaner or pressure washer may aerosolize infectious particles and should be used with caution.
- Frequently remove waste material from the cage (after moistening the material), and burn or double-bag the waste for disposal.

To aid in traceback following confirmed psittacosis, records of transactions of susceptible birds should be kept for at least one year.

References