

Chlamydiosis:

More Than Just an Avicultural Inconvenience

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Of all the diseases and conditions suffered by humans, there are 53 that must be reported to the U.S. Centers for Disease Control (CDC).

This mandate comes from federal law and all physicians and other health care providers are required to comply or risk potential sanctions including monetary fines. Most states have similar reportable diseases, and have authority similar to the CDC to investigate disease outbreaks. Of the 53 diseases listed by the CDC only one, psittacosis (also called parrot fever), is commonly transmitted to humans by birds and, as such, should be of particular concern to bird breeders and bird owners.

Psittacosis (called chlamydiosis in avian species) is caused by the bacterium *Chlamydia psittaci*. In humans, an infection with this bacteria usually causes a respiratory disease similar to severe pneumonia. Before antibiotics were developed, a mortality rate of 20% was common but, with advances in medicine, less than 1% of properly treated patients today succumb to the disease. Unfortunately, pregnant women are at particularly high risk and many fetal abnormalities and/or fetal deaths have been attributed to this disease.

What Does This Mean for You?

Now, what has any of this got to do with aviculturists?

Plenty, if your bird is the one that transmitted the disease to the human who contracted psittacosis.

Because of the reporting requirements, the Centers for Disease Control and/or state public health agencies are required to do a follow-up epidemiological investigation to assist in con-

trolling the transmission of *C. psittaci*. That means that the appropriate authorities will interview the victim to determine how and when he or she came in contact with any birds and then the owners of the bird(s) will be contacted for testing to see if the birds are carriers of the disease.

Under the CDC guidelines, all birds that have been in contact with the sick person must be identified and the location of the bird (e.g. pet store, dealer, breeder, quarantine station) must be contacted so that the bird may be tested for the disease. Even more important, if the potential carrier bird was part of a flock or housed with other birds, testing of all birds in the facility is mandated.

While all of this investigation and testing is going on, the birds must be quarantined and will not be allowed to leave the premises. For a breeder or a pet store, this could spell financial disaster, since testing and subsequent treatment can take 2-3 months to clear the birds of any disease.

Moreover, the testing process alone can take more than a month, since serial tests need to be run to confirm that the bird(s) do not have the disease.

While laws vary from state to state, some local jurisdictions have the legal authority to sequester, impound and/or euthanize your birds to prevent the further spread of disease. In California, as an example, the Health and Safety Code authorizes the State Department of Health Services to quarantine or isolate people and/or animals suspected of harboring an infectious or communicable disease (including psittacosis). Additionally, the law gives wide discretion to the health authorities with respect to what

to do if a bird or a flock is infected.

Some long-time aviculturists will remember when there was an outbreak of Newcastle's disease at some of California's poultry farms. With respect to the Newcastle's outbreak in 1971, 1,341 flocks were identified, 12 million birds were destroyed and the effort cost the taxpayers \$56 million. Newcastle's is transmissible to humans, usually causing conjunctivitis (inflammation of lining of eye), and rarely fever, chills, and sore throat. Newcastle's is not a reportable disease under either the CDC guidelines or the California Dept. of Health guidelines. However, these listings are talking about diseases appearing in humans, not animals.

While this was a disease that affected birds and rarely humans, the same event could occur should *people* start turning up with psittacosis.

The other potential problem with a person contracting psittacosis and tracing it back to your aviary is the potential liability you might incur for that individual's illness and related damages. Again, laws on this subject vary from state to state, but a serious case of psittacosis "though curable" can be very disabling to an individual and many people will be looking for someone to compensate them for their losses once the disease process is over. That someone may, in fact, be you.

How Do You Know If Your Bird or Flock Is Safe?

The first question that comes to mind, whether you own one or a 100 members of the avian species, is what can you do to ensure that your bird does not have this disease. Unfortunately, the answer is complicated because veterinarians and avian researchers have not come up with a single sure-fire test for chlamydiosis. Moreover, there is not a single drug that can effect a cure and the road to health can be a long and rocky one as far as this disease is concerned.

First, with respect to diagnosis in live birds, cultures based on combined cloacal and choanal-swabs can demonstrate the presence of the disease. However, birds being screened for *C. psittaci* may not shed the organism daily, so to reduce costs specimens collected over 3-5 days need to be col-

lected and pooled before being cultured. Handling of the specimens is critical and the assistance of a veterinarian or a trained vet technician is often important so that false negatives do not result.

An alternative method of testing for the disease is a blood test that identifies not *C. psittaci* itself, but either antigens or antibodies in the bird's blood. Four different serology tests are currently available from different laboratories and each of them has its advantages and disadvantages. These include direct complement fixation (CF) test (risk of false-negatives in some birds); elementary-body agglutination (EBA) test (can be positive even after treatment and bacteria has been destroyed); immunofluorescent-staining test (gives rapid results but is most useful only if the bird is in an active shedding stage of the disease), and the enzyme-linked immunosorbent assay (ELISA) test (can vary in sensitivity depending upon the severity of the infection in the individual bird).

Obviously, blood tests are also more expensive since someone has to catch up the birds, draw the blood, make sure it is handled properly, and submit the samples to the appropriate lab for examination.

Veterinarians vary, but some are willing to test "group" samples specimens collected from multiple birds in an effort to reduce costs. Then, if a positive result comes back, the individual members can be retested to determine who is carrying the disease.

Finally, the most recent diagnostic tool is called a polymerase chain-reaction (PCR) test. The lab takes a piece of the DNA of the *C. psittaci*, reproduces it until there are many hundreds of copies, labels those copies with some sort of marker (usually radioactive or fluorescent) and then places the replicated DNA into a sample of the bird's feces or a tissue sample to see if it "pairs up" with similar DNA. The matching reaction is evidence that the bacteria is (or recently was) present in the bird. Unfortunately, while this test has the potential for being much more accurate than any of the others mentioned above, it is not yet widely available and the cost is prohibitive when testing multiple members of a flock.

What Can be Done to Avoid the Disease and Liability?

So, what can you do to protect yourself and your birds from this potential risk? A number of things, depending on how much effort you wish to expend, the size of your flock, and your potential for exposure (e.g. how many birds you have in trade each year).

The Centers for Disease Control has issued some general recommendations for control of birds to minimize the incidence of the disease in your flock. These recommendations include:

- Maintain accurate records for all bird-related transactions to identify both potential sources of infected birds and potentially exposed persons. Include date of purchase, species, source of bird, record of any health problems and vet checks, name of purchaser when the bird is sold, and band number.
- Do not purchase any birds that have signs compatible with avian chlamydiosis (e.g. discharge from eyes or nares, diarrhea or low body weight).
- Quarantine newly acquired birds for 30-45 days and test for chlamydia before adding them to the flock.
- Test birds again for chlamydia before selling them.
- Follow good husbandry practices including sterilizing food and water bowls regularly, isolating birds with suspected illness, regularly cleaning cages, wall, and floors of aviaries, dispose of litter so that it will not recontaminate the aviary. *C. psittaci* is sus-

ceptible to most disinfectants and detergents but is best destroyed with quaternary ammonium compounds (brand names include Rocal or Zephiran) or a 1:100 dilution of household bleach.

Summary

As with many avian diseases, vigilance in the areas of hygiene and health checks seems to be the way to go to avoid developing a problem with the chlamydiosis bacteria in your birds. While some effort is involved in keeping the birds healthy, the payoff comes in knowing that you will not have to be dealing with various governmental health agencies down the road as the result of someone contracting this potentially debilitating disease.

References

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