

PSITTACOSIS

Potential Bioterrorism Agent: Category B

Also known as: Parrott fever, Omithosis

Responsibilities:

Hospital: Report by IDSS, mail, facsimile, or phone

Lab: Report by IDSS, mail, facsimile, or phone

Physician: Report by mail, facsimile, or phone

Local Public Health Agency (LPHA): Report by IDSS, mail, facsimile, or phone.

Follow-up required

Iowa Department of Public Health

Disease Reporting Hotline: (800) 362-2736

Secure Fax: (515) 281-5698

1) THE DISEASE AND ITS EPIDEMIOLOGY

A. Agent

Chlamydia psittaci is the bacterium that causes psittacosis. It is an obligate intracellular parasite.

B. Clinical Description

Symptoms can include high fever, headache, rash, myalgia (muscle aches), chills, and upper or lower respiratory tract disease. A cough may or may not be present.

Onset of respiratory symptoms often seem milder than expected based on chest x-ray findings.

Complications such as systemic illness can occur with pneumonia. Human disease can be severe (including encephalitis and myocarditis), especially in untreated elderly people, although it is usually mild or moderate for others. Relapses of illness may occur. Occasionally fatal in untreated patients.

C. Reservoirs

Common reservoirs *C. psittaci* is found primarily in psittacine birds (parrots, parakeets, macaws, love birds, and cockatoos); pigeons and some poultry (turkeys, geese and ducks) may also shed the infectious agent.

D. Modes of Transmission

Spread: Pet birds, especially psittacine birds are often implicated, especially when owners clean a cage with dried droppings. Occupational exposure can also occur when workers are exposed to areas with contaminated dust during clean up, repair or demolition. Laboratory infections have occurred as well. Farms or rendering plants may be a source of exposure for workers. Many seemingly healthy birds may shed the agent when stressed by crowding or transport. Dramatic outbreaks may occur in poultry packing plant workers.

Airborne: Human illness occurs from inhalation of the bacteria in dried droppings, secretions, and dust from feathers of infected birds.

Person-to-person: transmission (through paroxysmal coughing during acute illness) has only rarely been reported.

E. Incubation period

The incubation period for psittacosis can range from 1–4 weeks, but it is usually 7 - 14 days.

F. Period of Communicability or Infectious Period

Infected birds, including those that appear to be healthy, can be lifetime carriers or have continuous or intermittent shedding periods of weeks or even months. If humans are contagious at all, it is during paroxysmal coughing with acute illness.

G. Epidemiology

Psittacosis occurs worldwide and in all seasons, with some increase in winter months owing to maintaining the agent in ambient air. Most human cases are sporadic and are usually confined within families. Human outbreaks of psittacosis occasionally occur in individual households, pet shops, aviaries, and avian exhibits in zoos. Outbreaks among birds can occur in poultry flocks or other groups of birds such as in pet stores. Quarantine of imported birds and treatment of birds with antibiotics reduces the risk of disease transmission from birds.

In Iowa no cases have been reported in the last 5 years.

H. Bioterrorism Potential

Category B Agent: Psittacosis has been identified as a potential category B bioterrorism agent as a respiratory threat.

2) DISEASE REPORTING AND CASE INVESTIGATION

A. Purpose of Surveillance and Reporting

- To identify and control outbreaks.
- To help identify the source (*e.g.*, pet stores, workers in a facility with excess dust or unrecognized bird droppings) and prevent further transmission.
- To monitor the emergence of psittacosis in new areas and new risk groups.
- To design more effective control or prevention methods.

B. Laboratory and Healthcare Provider Reporting Requirements

Iowa Administrative Code 641-1.3(139) stipulates that the laboratory and the healthcare provider must report. The preferred method of reporting is by utilizing the Iowa Disease Surveillance System (IDSS). However, if IDSS is not available to your facility the reporting number for IDPH Center for Acute Disease Epidemiology (CADE) is (800) 362-2736; fax number (515) 281-5698, mailing address:

IDPH, CADE
Lucas State Office Building, 5th Floor
321 E. 12th Street
Des Moines, IA 50319-0075

Postage-paid disease reporting forms are available free of charge from the IDPH clearinghouse.

Call (319) 398-5133 or visit the website:

healthclearinghouse.drugfreeinfo.org/cart.php?target=category&category_id=295 to request a supply.

Consult with CADE (1-800-362-2736) or the University of Iowa State Hygienic Laboratory (SHL) (319-335-4500) concerning proper specimen collection and testing.

Report any of the following:

- Isolation of *C. psittaci* from respiratory secretions; or
- Fourfold or greater increase in antibody against *C. psittaci* by complement fixation (CF); or microimmunofluorescence (MIF) to a reciprocal titer of greater than or equal to 32 between paired acute- and convalescent-phase serum specimens ; or
- Presence of immunoglobulin M antibody (IgM) against *C. psittaci* by MIF to a reciprocal titer of greater than or equal to 16.

C. Local Public Health Agency Follow-up Responsibilities

Case Investigation

- a. It is the LPHA responsibility to complete a case investigation by interviewing the case and others who may be able to provide pertinent information. Much of the information can be obtained from the case's healthcare provider or the medical record.
- b. Use the following guidelines to complete the IDSS form:
 - 1) Accurately record the demographic information (including full name and address), date of symptom onset, healthcare provider information, whether hospitalized (including location and associated dates), therapy received, and outcome of disease (*e.g.*, recovered, died).
 - 2) Diagnostic tests: Complete questions on the type(s), date(s), and result(s) of any diagnostic tests.
 - 3) Exposure history: Use the approximate incubation period range for psittacosis (1–4 weeks). Specifically, focus on the period beginning about 1 week prior to the case's onset date back to approximately 4 weeks before onset for the following exposures:
 - a) Occupation/duties: Determine the occupation of the case. Determine whether the case had any occupational exposure to birds or other animals (*e.g.*, farmer, pet store worker, poultry plant worker).
 - b) Bird contact: Ask the case about contact with birds (psittacine birds, pigeons, domestic fowl, or other birds). If possible, indicate the type, number of birds, and health of the birds to which the case was exposed.
 - c) Contact with a human case of psittacosis: Ask the case if he/she had recent contact with a person with pneumonia.
 - d) Indicate where and when any of the above exposures occurred.
 - 4) Investigation of source: Record any information regarding the testing of birds suspected as the case's source of infection.
 - 5) If several unsuccessful attempts have been made to obtain case information, (*e.g.*, the case or healthcare provider does not return calls or respond to a letter, or the case refuses to divulge information or is too ill to be interviewed), complete the IDSS form with as much information as possible. If using IDSS, select the appropriate reason under the Event tab in the Event Exception field.
- c. Complete the form in IDSS or, if mailing, attach the lab report(s) and mail (in an envelope marked "Confidential") to IDPH the Center for Acute Disease Epidemiology. The mailing address is:

IDPH, CADE
Lucas State Office Building, 5th Floor
321 E. 12th Street
Des Moines, IA 50319-0075
- d. Institution of disease control measures is an integral part of case investigation. It is the LPHA responsibility to understand, and, if necessary, institute the control guidelines listed below.

3) CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements

None.

B. Protection of Contacts of a Case

None.

C. Managing Special Situations

Disease in Birds

Psittacosis diagnosed in a bird is reportable to the Iowa Dept. of Agriculture and Land Stewardship (IDALS). They in turn will notify the Center for Acute Disease Epidemiology (CADE). If evidence suggests that humans have been exposed to infected birds or become sick with psittacosis, the local

board of health will be asked to assist CADE in investigating the situation, ensuring that any sick persons receive medical attention, and educating exposed individuals about their potential risk. In cases without human illness, the local board of health should be aware of the situation so that concerned individuals can be given information about psittacosis, their risk of exposure, and the need to see a physician if they have been exposed and develop respiratory illness.

When a bird in or purchased from a pet store has been diagnosed with psittacosis, whether or not human cases have occurred as a result of exposure to the diseased bird, control measures in birds will be instituted by the IDALS. These measures include quarantine and treating exposed birds and properly disinfecting cages and other surfaces. Other control measures, including notifying the pet store owner and workers of the diagnosis and their possible risk of disease, and notifying the public who may have visited the store by posting public health notices at the store, will be made in collaboration with CADE. Also, depending on the situation, CADE may contact individuals who have purchased birds from the facility to inform them about psittacosis, the possibility that their birds may be carriers, and the potential risks to their health.

In addition to pet shops and veterinary offices, other high-risk environments in which psittacosis can occur include poultry farms and specialty bird shows. Where a diseased bird is identified, control measures similar to those described above (*e.g.*, quarantine and treating exposed birds, disinfecting the animal's environment and notifying exposed individuals about their disease risk) will be instituted by IDALS in conjunction with CADE.

Contact the Iowa Department of Agriculture and Land Stewardship (IDALS), (515) 281-8601 (after hours 515-242-0247) with question about the disease in animals. For information about the risk to humans, contact CADE at (800) 362-2736, if after hours instructions will be given on hours to reach on-call staff

Reported Incidence Is Higher than Usual/Outbreak Suspected

If an outbreak is suspected, investigate to determine the source of infection and mode of transmission. A common vehicle, such as a cluster of sick birds in a pet store, should be sought and applicable preventive or control measures should be instituted. Consult with the epidemiologist on-call at CADE at (800) 362-2736. CADE can help determine a course of action to prevent further cases and can perform surveillance for cases that may cross jurisdictions and therefore be difficult to identify at a local level.

D. Preventive Measures

To avoid exposure IDPH recommends:

- Obtain birds only from a licensed pet store or aviary.
- Pet owners and animal handlers should be made aware of the dangers of household or occupational exposure to infected birds and the risk of inhalation of dried bird droppings, even from seemingly healthy birds.
- Medical personnel who take care of people in poultry processing plants or other workers in high-risk occupations should learn to include psittacosis in their differential diagnosis for workers who become sick with febrile illness and myalgia.
- Psittacine birds that are bought, traded, or otherwise procured should be raised and handled in a way that prohibits psittacosis spread. Tetracycline can be used to control or prevent disease in birds, although treatment failures can occur.
- Pet stores, farms, or processing plants that are epidemiologically linked to human psittacosis should be part of a surveillance effort to identify other cases. Any infected birds should be treated or destroyed, and the environs should be thoroughly disinfected.

4) ADDITIONAL INFORMATION

The Council of State and Territorial Epidemiologists (CSTE) surveillance case definitions Psittacosis can be found at: www.cdc.gov/osels/ph_surveillance/nndss/phs/infdis.htm#top

CSTE case definitions should not affect the investigation or reporting of a case that fulfills the criteria in this chapter. (CSTE case definitions are used by the state health department and the CDC to maintain uniform standards for national reporting.)

References

American Academy of Pediatrics. *2006 Red Book: Report of the Committee on Infectious Diseases, 27th Edition*. Illinois, American Academy of Pediatrics, 2006.

Heymann, David L., ed., *Control of Communicable Diseases Manual, 20th Edition*. Washington, DC, American Public Health Association, 2015.

National Association of State Public Health Veterinarians. *Compendium of Measures to Control Chlamydia psittaci Infection among Humans (Psittacosis) and Pet Birds (Avian Chlamydiosis), 2004*.

National Association of State Public Health Veterinarians, Inc., 2004.

Resources

www.cdc.gov/ncidod/dbmd/diseaseinfo/psittacosis_t.htm