Psittacosis[1,2]

Disease Category: Zoonotic Disease

Timeframe to follow-up: Within one working day

Signs and Symptoms	• Abrupt onset of fever and chills • Headache • Myalgia • Dry, nonproductive Cough
Incubation	Usually 5-14 days; range up to 39 days
Case Classification	Clinical criteria: Psittacosis is an illness characterized by fever, chills, headache, myalgia, and a dry cough with pneumonia often evident on chest x-ray. Severe pneumonia requiring intensive-care support, endocarditis, hepatitis, and neurologic complications occasionally occur.
	Laboratory Criteria for Diagnosis • Isolation of *Chlamydophila psittaci* from respiratory specimens (e.g., sputum, pleural fluid, or tissue), or blood, OR • Fourfold or greater increase in antibody (Immunoglobulin G [IgG]) against *C. psittaci* by complement fixation (CF) or microimmunofluorescence (MIF) between paired acute- and convalescent-phase serum specimens obtained at least 2-4 weeks apart , OR • Supportive serology (e.g. *C. psittaci* antibody titer [Immunoglobulin M (IgM)] of greater than or equal to 32 in at least one serum specimen obtained after onset of symptoms), OR • Detection of *C. psittaci* DNA in a respiratory specimen (e.g. sputum, pleural fluid or tissue) via amplification of a specific target by polymerase chain reaction (PCR) assay.
	Case Classification Probable An illness characterized by fever, chills, headache, cough and myalgia that has either: • Supportive serology (e.g. *C. psittaci* antibody titer [Immunoglobulin M, IgM] of greater than or equal to 32 in at least one serum specimen obtained after onset of symptoms), OR • Detection of *C. psittaci* DNA in a respiratory specimen (e.g. sputum, pleural fluid or tissue) via amplification of a specific target by polymerase chain reaction (PCR) assay. Confirmed

	An illness characterized by fever, chills, headache, cough and myalgia, and laboratory confirmed by either: • Isolation of *C. psittaci* from respiratory specimens (e.g., sputum, pleural fluid, or tissue), or blood, OR • Fourfold or greater increase in antibody (Immunoglobulin G [IgG]) against *C. psittaci* by complement fixation (CF) or microimmunofluorescence (MIF) between paired acute- and convalescent-phase serum specimens obtained at least 2-4 weeks apart.
	Comments Although MIF has shown greater specificity to *C. psittaci* than CF, positive serologic findings by both techniques may occur as a result of infection with other Chlamydia species and should be interpreted with caution. To increase the reliability of test results, acute- and convalescent-phase serum specimens should be analyzed at the same time in the same laboratory. A real-time polymerase chain reaction (rtPCR) has been developed and validated in avian specimens but has not yet been validated for use in humans.
Differential Diagnosis	Symptoms may align with Influenzas atypical pneumonia, endocarditis, septicemia, vasculitis, Q fever, leptospirosis, COVID-19, and brucellosis. When extrapulmonary manifestations predominate, symptoms can overlap with gastroenteritis, hepatitis, meningitis, or encephalitis.
Treatment	Doxycycline is the recommended antimicrobial therapy. Erythromycin and azithromycin can be used when treating pregnant people. In severe infections, intravenous doxycycline is recommended.
Duration	Symptoms usually persist until antibiotic treatment is started, usually 1- 2 days after first dose is taken.
Exposure	Inhalation of dried bird feces, bird bites, mouth-to-beak contact, and through handling poultry.
Laboratory Testing	Samples may be collected from sputum, nose or throat, or blood. Serologic testing using microimmunoflourescence (MIF) with paired sera. MIF is more sensitive and specific than complement fixation but can display cross-reactivity with other *Chlamydia* species. Nucleic acid amplification tests (NAATs) are not available in commercial laboratories. Culturing is not recommended due to *C. psittaci* being a biosafety level 3 organism and the need to use a specialized laboratory.
Control of Contacts	Disease does not have person-to-person contact and does not require any control measures of contacts.
Key areas of focus during investigation	Dependent on type of disease (i.e., travel history, food history, recent hospitalizations, water exposure).

Public Health Actions	Reports of psittacosis cases must be made to the Local Health Authority during the regular business hours of the health authority on the first working day following the identification of the case. Local Health Authority to notify Office of State Epidemiology (dpbhepi@health.nv.gov) or call 775-684-5911/775-400-0333 (after hours) if outbreak suspected. For individual confirmed or probable cases: • Confirm diagnosis, if possible • Identify potential exposures • Prepare a case report and submit to the Chief Medical Officer (through OSE) within 7 days after completing the case investigation • Identify potential outbreaks from common sources • Provide education about how to prevent transmission To the best of the local health authority's ability, each step of the investigation should be completed within one working day or in alignment with NAC 441A.
Key Partner Agencies	• Local health authorities • Nevada Department of Agriculture—Animal Disease Laboratory • University of Nevada, Reno—Nevada Cooperative Extension • Nevada Outdoor Recreational Partners

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PSITTACOSIS DISEASE REPORTING

A. Legal Reporting Requirements

A report to the health authority may be made by telephone; telecopy (in the form prescribed by the health authority); or any form of electronic communication identified by the health authority, following the specified format and procedure.[3]

1. Health Care Providers and Health Care Facilities

Health providers and facilities must notify the health authority where provider is located within the first working day after identifying the case.[3–5]

2. *Laboratories*

Laboratories must notify the health authority within the first working day after identifying the case.[3] If the lab is located outside of Nevada, notify the Nevada Chief Medical Officer through the Office of State Epidemiology (OSE) within the same timeframe.[3,6]

3. Local Health Authority (LHA)

LHA's must notify the Office of State Epidemiology (OSE) within 7 days after completing the case investigation.[7]

II. THE DISEASE AND ITS EPIDEMIOLOGY

A. Background[1,2]

Psittacosis, also known as Ornithosis or Parrot Fever, is a mild disease caused by *Chlamydia psittaci*, a bacterium commonly found in birds. It has been detected in at least 467 species across 30 bird orders. The disease is recognized worldwide—in the United States, Europe, the Middle East, and Australia—but remains underrecognized and underreported. People who work closely with birds, such as veterinarians, pet shop employees, poultry workers, and bird owners, are at high risk of infection, along with immuno-compromised individuals. While mortality from Psittacosis is extremely rare, severe complications occur in some cases. Infection usually happens through inhalation of dried bird secretions or droppings. Overall, the disease is typically mild but warrants awareness due to its potential severity.

B. Etiologic Agent[1]

Chlamydia psittaci is a Gram-negative, obligate intracellular bacterium that causes psittacosis. It has a biphasic life cycle alternating between infectious elementary bodies (EBs) and replicative bodies (RBs). EBs attach to host cells, avoid phagocytosis by residing in vacuoles, and convert into RBs inside the cell. After 48-72 hours, RBs transform back into EBs, which exit to infect new cells. EBs can survive for months outside the host, enabling environmental transmission.

C. Description of Illness[1]

Psittacosis is a bacterial infection that primarily causes symptoms along with respiratory complications. Common signs include fever, headache, chills, muscle aches, and a dry cough. With prompt treatment, most people with mild to moderate illness recover fully. However, severe cases may require more intensive medical care. If left untreated, complications such as pneumonia or other serious conditions can develop. Early diagnosis and appropriate antibiotic therapy are key to preventing severe outcomes. Overall, timely treatment leads to a good prognosis for most patients.

D. Disease Burden in Nevada[8,9]

Psittacosis is not endemic to Nevada and is rarely present except for occasional reported cases. Surveillance data from 2012 onward reported only one case in 2016 and none since then.

See the Nevada Office of State Epidemiology Communicable Disease Dashboard for Nevada specific data on psittacosis located under the Monitoring Zoonotic Diseases in Nevada.

E. Reservoirs[10]

Birds are the major epidemiological reservoir for psittacosis.

F. Modes of Transmission[11]

- Psittacosis is primarily transmitted among avian species but can also be passed from birds to mammals including humans. The bacteria are present in bodily secretions such as fecal matter, nasal discharge, and ocular fluids.
- *Chlamydophila* organisms can survive in the environment for several weeks before infecting a new host.
- Transmission is primarily airborne, with the bacteria reproducing initially in the respiratory tract.

G. Incubation Period[2]

The Incubation period typically ranges from 5-14 days but can extend to 39 days.

H. Period of Communicability[2]

Humans are generally not contagious; human-to-human transmission is very rare and occurs only in exceptional cases.

I. Testing[1,2,12,16]

Testing is recommended when a patient presents with symptoms consistent with psittacosis, such as atypical pneumonia, fever, headache, chills, and has a history of exposure to birds. Respiratory specimens are the preferred samples to be collected. Serology laboratory testing is a common way to test for psittacosis. Although serologic testing is commonly used, it can have ambiguous results. Nucleic acid amplification tests (NAATs) can be used to distinguish *C. psittaci* from other chlamydial species. However, NAATs are only available in specialized laboratories and commercial NAATs do not test for *C. psittaci*. Culturing is not generally recommended due to the organism being hard to

recover in culture and increased risk of laboratory exposure. *C. psittaci* requires biosafety level 3 biocontainment practices.

J. Treatment[16]

Provide most current treatment guidelines from Red Book to the healthcare provider or refer case to physician for treatment for psittacosis.

Psittacosis is mainly treated with doxycycline. Erythromycin and azithromycin are recommended for pregnant people. Antimicrobial therapy should continue for 10 to 14 days after fever subsides. Most C psittaci infections respond to antibiotics within 1 to 2 days. In severe infections, intravenous doxycycline may be considered.

III. EPIDEMIOLOGIC CASE INVESTIGATION

The public health authority should begin investigating the case of psittacosis, step by step, within one working day of notification or in alignment with NAC 441A.

A. Step 1: Review relevant information about the disease.[13]

1. Review scientific information in Control of Communicable Diseases Manual, most current edition.

2. Review psittacosis case definition (2010 CDC).

B. Step 2: Begin investigating the case.

1. Contact Reporting Source and/or Reported Case

Upon receiving an initial case report, review lab test results and available clinical details and epidemiologic factors. Please make three attempts to contact the case (text and phone calls) on separate days, at different times of the day (morning, afternoon, late afternoon). Document all attempts to contact a reporting source and/or reported case, preferably in the "Encounters" tab of EpiTrax. Please use case report forms (CRF) to gather accurate information about the case. Focus on the key data elements listed above. Filling out an electronic version of the CRF in EpiTrax is preferred. If used, the completed PDF version should be attached to the CMR in EpiTrax. The CRF should be completed within 7 days of completing the investigation of the case.[7]

C. Step 3: Identify potential source of infection[2,12]

The investigation focuses on exposures in the 2-4 weeks before onset. Ask about any risk factors for infection, including recent travel and contact with birds or other animals. Also inquire about exposure to potentially contaminated water or food sources, depending on the illness presentation. This helps identify possible sources and routes of transmission.

D. Step 4: Initiate control measures for case and/or for contacts (see Section IV – Section VI below).

E. Step 5: Provide Education and Prevention messaging to the case and/or contacts (see Section IX below).

IV. CONTROL OF CASE

Disease does not require any control measures of cases. Please provide education and prevention measures.

V. CONTROL OF CONTACTS

Disease does not have person-to-person contact and does not require any control measures of contacts. Please provide education and prevention measures.

VI. CONTROL OF CARRIERS

Carrier status has not been identified and does not require any control measures. Please provide education and prevention measures.

VII. MANAGEMENT OF SPECIAL SITUATIONS/OUTBREAK CONTROL

Coordinate with senior epidemiology staff to determine if an outbreak is occurring. If so, notify DPBH Environmental Health, local health authorities, or infection control, as appropriate.

A. Pet Shop Exposure[14]

- An investigation will be initiated if a bird with confirmed avian psittacosis meets any of the following criteria:
    - The bird contracted illness from a pet store or breeder within 60 days prior to onset.
    - The bird is linked to a person with confirmed or probable psittacosis.
    - The bird associated with multiple other suspected avian cases from the same source.
- Special controls may be implemented at pet stores or breeding facilities that are:
    - Linked to human cases of psittacosis.
    - The source of a documented avian outbreak.

      Control measures may include:

        - ❖ Quarantine, treatment, and/or humane destruction of exposed birds.
        - ❖ Thorough cleaning and disinfection of cages, equipment, and other contaminated surfaces.

B. Intentional Contamination[14,15]

- Psittacosis is classified as a Category B potential bioterrorism agent. In the absence of known exposures or occupational risk factors, cases should raise suspicion of a possible intentional (bioterrorist) event.
- If an intentional release is suspected based on epidemiological, clinical, or microbiological evidence, the following actions must be taken:

  Response Actions:

  - The issue is a public health threat.
  - Notify appropriate authorities, including:
    - Local law enforcement
    - Local health officer or public health authority
  - Treat all collected samples as potential criminal evidence for forensic investigation.
  - Identify and define the population at risk to guide the emergency public health response.
  - Initiate active surveillance to:
    - Identify symptomatic and asymptomatic individuals among those exposed.
    - Begin prompt treatment.

VIII. PREVENTION

The Nevada OSE website also provides information about psittacosis, as does the One Health Nevada website.

- Buy pet birds from well-known pet stores.
- Educate case about safe bird handling and cleaning practices.
  - Clean cages and food/water bowls daily.
  - Avoid inhalation of dust when it is in the same area as bird droppings
  - Practice hand hygiene
  - Avoid beak-to-mouth contact
  - Wear protective gear
  - Ensure proper ventilation
- If case reports a sick bird, refer to veterinarian for evaluation and treatment.

IX. REFERENCES

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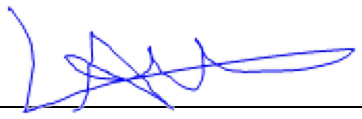
X. ACKNOWLEDGEMENTS

This document was developed based on the content and format of the disease investigation guidelines of several state and local health jurisdictions:

- Oregon Health Authority Investigative Guidelines
- Washington State Department of Health Reporting and Surveillance Guidelines
- Washoe County Health District Epidemiology and Communicable Disease Program Investigation of Communicable Disease Manual

The Nevada Office of State Epidemiology would like to acknowledge the work of these great partners.

XI. UPDATE LOG



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9/17/2025

Chief Medical Officer Approval Date