

PNEUMOCOCCOSIS

Animal Group(s) Affected	Transmission	Clinical Signs	Severity	Treatment	Prevention and Control	Zoonotic
Primates, including humans; multiple domestic and lab mammal species; dolphins	Aerosol; direct contact	Primarily respiratory, neurologic, and septic	Asymptomatic to severe	Antibiotics and symptomatic treatment	Vaccine is available for humans. No vaccines have been used routinely for animals. Prevent contact with sick animals or people.	Theoretical

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Susceptible animal groups: Humans, multiple non-human primate species (both wild and captive), dogs, cats, rats, mice, guinea pigs, cattle, horses, dolphins.
Causative organism: <i>Streptococcus pneumoniae</i> is an alpha-hemolytic strep (encapsulated, facultative anaerobe, optochin sensitive and bile soluble) with more than 90 serotypes
Zoonotic potential: This risk is theoretical but unproven. Animals have developed disease both from human serotypes as well as animal-specific serotypes. One report documented in a human included several clinically ill house pets with <i>S. pneumoniae</i> . Suspected reverse zoonosis from a keeper to zoo chimpanzees have occurred.
Distribution: Worldwide.
Incubation period: Carrier status confirmed. With asymptomatic but infective carriers, it is unknown in animals how long carrier state lasts. Clinical disease can occur within 96 hours of exposure.
Clinical signs: Pneumonia, meningitis, sepsis, conjunctivitis, sinusitis, otitis media, other respiratory disease, polyarthritis, endocarditis, pericarditis, and sudden death. Clinical disease often more severe with a viral co-infection.
Post mortem, gross, or histologic findings: Fibrinous bronchopneumonia, pericarditis, necrotizing cerebral vasculitis.
Diagnosis: Bacterial identification of isolates using DNA sequencing, latex agglutination tests and others. Positive Gram staining of respiratory samples with lancet-shaped diplococci. Serotyping recommended.
Material required for laboratory analysis: Respiratory secretions, CSF, or blood. If immediate (< 1hr) transport to laboratory is not possible, samples should be inoculated into growth media and kept cool. The laboratory should be consulted first about appropriate media.
Relevant diagnostic laboratories: Any laboratory that performs cultures and sensitivities on a routine basis can complete testing for this organism. PCR testing can be found at many major commercial and veterinary diagnostic laboratories.
<i>Streptococcus</i> Laboratory Centers for Disease Control and Prevention 1600 Clifton Rd

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<p>Atlanta, GA 30333 404-639-1237</p>
<p>Treatment: Historically, penicillins were recommended. However, severe multidrug resistance reported in many serotypes to beta-lactam, fluoroquinolone and macrolide antibiotics so culture and sensitivity should be collected and submitted prior to treatment.</p>
<p>Prevention and control: Vaccination programs for humans have decreased rates of <i>S. pneumoniae</i> severe and fatal disease cases. No vaccines have been tested in animal species. Prevention of contact with infected animals and good hygiene is recommended in zoos and similar animal facilities. If vaccination considered, bacterial typing required before vaccination to confirm polyvalent vaccine applicable.</p>
<p>Suggested disinfectant for housing facilities: The bacteria is susceptible to many disinfectants: 70% ethanol, 2% glutaraldehyde, 1% sodium hypochlorite and others. However, it can live in sputum at room temperature for one week and in dust particles for up to 25 days.</p>
<p>Notification: The disease is reportable nationally. CDC and several states currently conducting surveillance of resistant strains.</p>
<p>Measures required under the Animal Disease Surveillance Plan: None at this time.</p>
<p>Measures required for introducing animals to infected animal: Do not introduce new animals to an infected animal.</p>
<p>Conditions for restoring disease-free status after an outbreak: In human nursing homes, vaccination and treatment of close contacts with prophylactic antibiotics is done. However, no studies on this approach have been documented in animals.</p>
<p>Experts who may be consulted: <i>Streptococcus</i> Laboratory Centers for Disease Control and Prevention 1600 Clifton Rd, Atlanta, GA 30333 404-639-1237</p> <p>Fabian Leendertz Robert Koch Institute Postbox: 650280 D-13302 Berlin, Germany Nordufer 20, 13353 Berlin, Germany +49 (0)30 - 18754-2592 leendertzf@rki.de</p>
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