### PASTEURELLOSIS

<table>
<thead>
<tr>
<th>Animal Group(s) Affected</th>
<th>Transmission</th>
<th>Clinical Signs</th>
<th>Severity</th>
<th>Treatment</th>
<th>Prevention and Control</th>
<th>Zoonotic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammals Avian</td>
<td>Aerosol, mechanical via bite or scratch wounds, or environmental (food, water). Colonization of lungs by endogenous nasopharyngeal bacteria is described in ruminants and swine due to environmental stressors and/or primary infections due to viruses or <em>Mycoplasma</em> spp.</td>
<td>Primarily depression, fever, coughing, nasal and oral discharge, increased respiratory rates, tachypnea. Arthritis, gastrointestinal disease, otitis media, mastitis, bite wound abscesses and other signs are possible.</td>
<td>Variable. Ranges from subclinical to peracute and fatal.</td>
<td>Supportive care, early intervention with antibiotics, ideally based on antibiotic sensitivity. Drainage of localized abscesses. Organ specific treatment for systemic infections. Peracute systemic infections may be unresponsive.</td>
<td>Sanitation, quarantine, optimization of animal health and management, and minimization of environmental and social stressors. Vaccination for viral respiratory agents that can predispose to pasteurellosis. Some strains may be responsive to vaccination.</td>
<td>Yes, but rare</td>
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**Sheet completed on:** 1 March 2011; updated 1 October 2012  
**Fact Sheet Reviewed by:** Robert E. Briggs, James J. England, Jack C. Rhyan  

**Susceptible animal groups:** Most notably ruminants and birds, but members of the Pasteurellaceae family can cause disease in many farm, companion and wild animals.  

**Causative organism:**  
Members of the Pasteurellaceae family. In ruminant pneumonia, mostly *Mannheimia haemolytica*, *Bibersteinia trehalosi*, *Histophilus somni*, and *Pasteurella multocida* are involved While each organism is capable of causing systemic and septicemic disease, prominently *P. multocida* in association with avian cholera or hemorrhagic septicemia. In some cases, the incidence of *M. haemolytica* may be underestimated due to proximity dependent inhibition by other organisms (Dassanayake et al., 2010; Bavananthasivam et al., 2012), although this has only been shown in vitro. It can be a primary infection, particularly in avians, or secondary to viral or *Mycoplasma* spp. infections and stress. Recent data from free ranging bighorn sheep suggest that *Mycoplasma ovipneumoniae*, rather than Pasteurellaceae, may play a primary role in epizootic pneumonia and predispose to secondary Pasteurellaceae infection (Besser et al., 2012). In free ranging bighorn sheep, lambs appeared more susceptible to pasteurellosis than adults, and β-hemolytic isolates were more likely to be associated with respiratory disease in adults (Miller et al., 2012).  

**Zoonotic potential:** Yes, but rare, primarily in severely immunocompromised individuals. Cat bite infections are more common.
**PASTEURELLOSIS**

**Distribution:** Ubiquitous

**Incubation period:** Various reports indicate 1-8 days, although some strains are carried asymptomatically for prolonged periods.

**Clinical signs:** Serous oculonasal discharge, cough, depression, anorexia, fever, pneumonia, tachypnea, dyspnea. Arthritis, otitis media, gastrointestinal disease, and other signs are possible, particularly with chronic and systemic infections. Localized abscesses in rabbits and cats due to bite wounds.

**Post mortem, gross, or histologic findings:** Highly variable, but lesions are most common in the thoracic cavity. Gross signs include pleural effusion, fibrinous adhesions, hemorrhage, necrosis, pulmonary consolidation, thickened interlobular septa, hydropericardium, multifocal liver lesions, and abscesses. Histopathologic lesions include hyperemia, pneumonitis, fibronopurulent bronchopneumonia, coagulative necrosis, and fibrinous pleuritis.

**Diagnosis:** Bacterial culture. PCR detection methods are available. Laboratories with specific expertise in pasteurellosis for disease investigations. Concurrent testing for respiratory viruses and *Mycoplasma* spp. is recommended.

**Material required for laboratory analysis:** Nasal and/or oropharyngeal swabs, tonsilar tissue, lung tissue, or other infected tissues.

**Relevant diagnostic laboratories:**
Most veterinary diagnostic laboratories can complete analysis. In cases involving wildlife, labs with specific wildlife experience should be consulted. Wildlife Pasteurellaceae can differ from domestic animal isolates.

**Treatment:** Rapid quarantine of infected individuals, prompt administration of appropriate antibiotics (ceftiofur, oxytetracycline, penicillins, florfenicol, enrofloxacin, tilmicosin, azithromycin, or based on susceptibility testing), reduction of stressful environmental and social conditions, general supportive care. Drainage of abscesses or other therapy specific to the clinical presentation.

**Prevention and control:** Sound management practices (including minimization of stressors, nutritional and environmental control, and vaccination for viral respiratory agents), quarantine of affected animals that prevents fence line and close aerosol contact, quick treatment, or in advanced cases, euthanasia. Specific vaccination is practiced for septicemic disease, avian cholera, atrophic rhinitis, and bovine respiratory disease.

**Suggested disinfectant for housing facilities:** Thorough physical cleaning, chlorhexidine, bleach or other effective disinfectants.

**Notification:** None required.

**Measures required under the Animal Disease Surveillance Plan:** Currently none.

**Measures required for introducing animals to infected animal:** Quarantine, do not introduce animals with recent or observed clinical disease. Optimize animal health prior to introduction with appropriate nutrition and similar measures, minimize environmental extremes, ensure social compatibility.

**Conditions for restoring disease-free status after an outbreak:** Absence of apparent respiratory disease. Persistent subclinical infections are difficult to determine.

**Experts who may be consulted:**
Any licensed veterinarian with appropriate experience or university animal extension specialists. Glen C. Weiser (Caine Veterinary Teaching Center, University of Idaho) may be able to provide reference laboratory support, also including *Mycoplasma* isolation and PCR detection of some species, and isolation and characterization of Pasteurellaceae. Thomas E. Besser (College of Veterinary Medicine, Washington State University) may be able to provide strain typing of *Mycoplasma* spp.

**References:**


