

BACKGROUND

This document provides information about potential zoonotic exposure while working with birds or their products (e.g. fecal sample). The infectious agents listed here are not all inclusive, but provide the most common zoonotic agents seen in birds. The safe work practices are provided as suggestions for staff and researchers who work with animals, in animal facilities, or with animal products.

ZOONOTIC PATHOGENS

There are a number of zoonotic diseases that can be spread from animal to human. In general, the risk of acquiring the diseases listed below is low, and in some cases, you are more likely to acquire an infection from other sources (e.g., contaminated food). However, you should remain vigilant and follow safe work practices and the instruction from your instructor or supervisor. Zoonotic diseases of concern include by are not limited to the following:

1. Avian Influenza Virus
 - a. Organisms: Influenza Virus
 - b. Clinical Signs
 - i. Animals – Respiratory signs (coughing, dyspnea, cyanosis); diarrhea; neurological signs.
 - ii. Humans- Flu-like symptoms (fever, chills, headache, muscle ache, cough); can evolve to pneumonia.
 - c. Transmission: Inhalation of aerosols; fecal-oral route; handling contaminated objects; contact with contaminated surfaces
 - d. Animal Management: Animals are tested periodically.
2. Salmonellosis
 - a. Organism: *Salmonella* spp.
 - b. Clinical signs
 - i. Animals-Asymptomatic or Diarrhea.
 - ii. Humans-Diarrhea, nausea, vomiting, abdominal pain.
 - c. Transmission: Fecal-oral route; handling contaminated objects; contact
 - d. Animal Management: Animals are tested periodically.
3. Avian Chlamydiosis or Psittacosis
 - a. Organisms: *Chlamydophila* spp.
 - b. Clinical Signs
 - i. Animals-Asymptomatic to lethargy, anorexia, & ruffled feathers; ocular & nasal discharge & diarrhea are possible.

- ii. Humans- Flue-like symptoms (e.g., fever, chills, headache, muscle ache, cough); can evolve to pneumonia.
 - c. Transmission; Inhalation of aerosols; fecal-oral route; handling contaminated objects; contact with contaminated surfaces
 - d. Prevention: minimize inhalation of aerosols such as dust particles.
- 4. Campylobacteriosis
 - a. Organism: *Campylobacter* spp.
 - b. Clinical Signs
 - i. Animals - Asymptomatic; may cause diarrhea, decreased appetite
 - ii. Humans- Diarrhea, cramping, abdominal pain, fever
 - c. Transmission: Fecal-oral route; handling contaminated objects; contact with contaminated surfaces
- 5. Avian Mycobacterium
 - a. Organisms: *Mycobacterium avium-intracellulare* complex (comprising *M. avium* subsp. *avium*, *M. avium* subsp. *paratuberculosis*, *M. avium* subsp. *Silvaticum*, and *M. intracellulare*).
 - b. Clinical Signs
 - i. Animals - Asymptomatic; diarrhea & wasting.
 - ii. Humans – More likely in immune suppressed individuals. Asymptomatic to night sweats, weight loss, abdominal pain, fatigue, diarrhea, & cough in people with immunosuppression or preexisting lung damage
 - c. Transmission: Inhalation of aerosols; fecal-oral route; handling contaminated objects; contact with contaminated surfaces

SAFE WORK PRACTICES

1. Good Personal Hygiene
 - a. Wash hands after working with animals or animal products and when leaving animal facilities. For further instruction refer to ACUP 713: Hygiene-Hand Washing.
 - b. Do not eat, drink, or use tobacco products in animal facilities.
2. Personal Protective Equipment (PPE)
 - a. Use proper PPE for work setting as appropriate (e.g. coverall, facemask, respirator). Maintain dedicated protective clothing and footwear while working with animals or in animal facilities. Do not wear protective clothing outside of animal facility or to other facilities.
 - b. Wear disposable gloves during procedures that increase the likelihood of exposure to zoonotic agents (e.g. handling of birds or contaminated surfaces and/or equipment). Exercise increased caution when handling sick animals (i.e. animals showing clinical signs such as diarrhea or ruffled feathers).
 - c. Use surgical/face mask for routine husbandry care (e.g., cage changes, minor cage cleaning) and N95 masks for protection during “aerosolizing procedures” (e.g. high-pressure hosing of cages or equipment).
3. Animal Care
 - a. Isolate sick or infected animals when possible.
 - b. Handle and care for sick or infected animals last.
4. Cleaning and Disinfection
 - a. Maintain clean, dry and uncluttered animal areas and workspace.

- b. Disinfect laboratory work surfaces after each use. Use only disinfectants approved by facility managers and that are suitable for the potential agents identified in this information sheet.
 - c. Dispose of deceased animals, animal products, items contaminated by animal products, contaminated bedding, and laboratory waste in a facility approved manner.
5. Proper Sharps Handling
 - a. Work only with one uncapped needle at a time and immediately dispose of after use in sharps receptacle.
 - b. Avoid recapping needles whenever possible.
6. Medical Attention
 - a. Students: Contact URI Health Services (874-4763) for medical evaluation if you suspect any exposure, or if you develop any symptoms associated with infection with zoonotic agents (e.g., fever, malaise, diarrhea, abdominal pain). Alternatively, see your own personal health care provider if any injury or potential exposure to a zoonotic agent occurs.
 - b. Employees: Contact URI Environmental Health and Safety if you suspect any exposure, or if you develop any symptoms associated with infection with zoonotic agents (e.g., fever, malaise, diarrhea, abdominal pain). Alternatively, see your own personal health care provider if any injury or potential exposure to a zoonotic agent occurs.
 - c. Notify the principal investigator or supervisor AND URI Environmental Health and Safety by completing an accident and injury report, http://www.uri.edu/publicsafety/EHS_incident_reporting_form.html

REFERENCES

- A-Z Index for Foodborne, Bacterial, and Mycotic Diseases. CDC, NCZVED, 2010. <http://www.cdc.gov/nczved/divisions/dfbmd/diseases/index.html>
- Guidelines to the Use of Wild Birds in Research. The Ornithological Society, 2010. <http://www.nmnh.si.edu/BIRDNET/guide/>
- West Nile Virus, Highly Pathogenic Avian Influenza H5N1, and other zoonotic diseases: what ornithologists and bird banders should know.
- The Ornithological Council, 2010 <http://www.nmnh.si.edu/BIRDNET/documents/WNV&H5N1-FactSheet.pdf>
- Zoonotic Diseases (Avian). USGS National Wildlife Health Center, 2009. <http://www.nwhc.usgs.gov/outreach/AvianZoonoticDiseases2009b.pdf>