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AVIAN INFLUENZA

Bird flu is an infection caused by avian (bird) influenza (flu) viruses. These flu viruses occur naturally among birds. Wild birds worldwide carry the viruses in their intestines, but usually do not get sick from them. However, bird flu is very contagious among birds and can make some domesticated birds, including chickens, ducks, and turkeys, very sick and kill them.

Bird flu viruses do not usually infect humans, but several cases of human infection with bird flu viruses have occurred since 1997. Symptoms of bird flu in humans have ranged from typical flu-like symptoms (fever, cough, sore throat and muscle aches) to eye infections, pneumonia, severe respiratory diseases (such as acute respiratory distress), and other severe and life-threatening complications. The symptoms of bird flu may depend on which virus caused the infection.

Infected birds shed flu virus in their saliva, nasal secretions, and feces. Susceptible birds become infected when they have contact with contaminated excretions or surfaces that are contaminated with excretions. It is believed that most cases of bird flu infection in humans have resulted from contact with infected poultry or contaminated surfaces. Studies suggest that the prescription medicines approved for human flu viruses would work in preventing bird flu infection in humans. However, flu viruses can become resistant to these drugs, so these medications may not always work.

The risk from bird flu is generally low to most people because the viruses occur mainly among birds and do not usually infect humans. However, during an outbreak of bird flu among poultry (domesticated chicken, ducks, turkeys), there is a possible risk to people who have contact with infected birds or surfaces that have been contaminated with excretions from infected birds.

Additional information regarding Avian Influenza can be found at:

<http://www.cdc.gov/flu/avian/>
<http://www.oseh.umich.edu/buscont/index.html>

CAMPYLOBACTERIOSIS

Campylobacter spp. bacteria can be found in numerous species of animals including: pigs, chickens, sheep, dogs, cats, ferrets, hamsters, and nonhuman primates where the bacteria frequently colonize in the gastrointestinal tract. Infected sheep, pigs, and poultry have been most frequently implicated in zoonotic disease transmissions. Infected animals may display diarrhea, abortion, stillbirths, fever, reduced appetite, and vomiting. However, an infected animal

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may not show any signs of illness. Even after an animal is treated it may appear healthy but will typically continue to shed this bacteria and thus be a carrier of the disease.

In the laboratory environment, *Campylobacter spp* is transmitted to humans when a person ingests infected fecal material such as when a fecally contaminated glove or piece of equipment contacts a human's mucous membranes. Infected humans may either display no signs of illness or may develop abdominal pain, malaise, fever, nausea, vomiting, or diarrhea. Illness usually occurs within 1-10 days of exposure, most frequently within 2-5 days. In humans, infection is diagnosed through a stool culture. The practice of good personal hygiene, such as handwashing after handling animals and their environment, the use of personal protective equipment, and effective environmental sanitation are most important in preventing disease transmission to personnel.

Additional information regarding *Campylobacter* can be found at:
<http://www.cdc.gov/nczved/divisions/dfbmd/diseases/campylobacter/>

Cryptococcosis

Cryptococcosis is caused by the fungus *Cryptococcus neoformans* and is associated with bird droppings. People become infected after inhaling microscopic fungal spores. These spores can be cleared by the body's immune system, remain in the lungs, or spread throughout the body causing other complications.

Healthy individuals with normal functioning immune systems may be asymptomatic or may develop pneumonia-like illness after inhaling the *Cryptococcus* spores. If infection does occur, symptoms include shortness of breath, cough, and fever. Most cases of cryptococcosis infection are found in people with weakened immune systems. This includes people with HIV infection, taking high doses of corticosteroid medications, or undergoing cancer chemotherapy. Symptoms are typically more severe in these individuals, and the infection can disseminate, spreading from the lungs to other parts of the body. Infection can spread to the central nervous system and swelling of the brain and spinal cord is a major concern. Symptoms of CNS infection include fever, headache, and change in mental status. If left untreated, disseminated *cryptococcus* infection can lead to permanent neurologic damage.

It can be difficult to prevent cryptococcosis because it is naturally found in soil and throughout the environment. Most people are not affected by breathing in small amounts of fungal spores. People with weakened immune systems should avoid areas with bird droppings, and should avoid contact with birds.

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For additional information on cryptococcosis visit:
<http://www.cdc.gov/parasites/crypto/>

ERYSIPELAS

Erysipelas is a disease caused by the bacteria *Erysipelothrix rhusiopathiae*. In the laboratory, it is most frequently a disease of pigs and less frequently birds, sheep, and fish. Infected animals may show signs of fever, lethargy, septicemia, arthritis, and sudden death. Certain symptoms are specific to pigs such as diamond-shaped skin lesions and necrosis of the ear and tail tips. Erysipelas is transmitted to humans by direct contact with infected animals, tissues, or feces. Infected humans most frequently exhibit well-defined skin lesions such as redness or swelling but may also exhibit fever, a generalized bacterial infection, endocarditis (inflammation of the inner lining of the heart), encephalitis (inflammation of the brain), and septic arthritis within one to three days of exposure. Infection is usually treated with antibiotics. The practice of good personal hygiene, such as hand washing after contacting animals and their environment, the use of personal protective equipment, and effective environmental sanitation are most important in preventing disease transmission to personnel.

Additional information regarding Erysipelas can be found at:
<http://wwwnc.cdc.gov/travel/yellowbook/2012/chapter-5-post-travel-evaluation/skin-and-soft-tissue-infections-in-retuned-travelers.htm>

Histoplasmosis

Histoplasmosis is caused by the fungus *Histoplasma capsulatum*. Birds carry the fungus on their feathers but do not show symptoms of infection. The fungus can become a problem to humans who work closely with chickens and other birds as it is associated with the accumulation of bird droppings. Transmission occurs when the spores of the fungus are inhaled and lodge in the lungs. Infection occurs when the body's immune system is not able to eliminate the spores. Anyone can get histoplasmosis, but older people with chronic lung disease and people who are immunosuppressed are at higher risk for histoplasma infection. It is not a contagious disease and cannot be transmitted from an infected person to someone else.

Many people who inhale the fungal spores do not get sick. However, Histoplasmosis is the most common fungal infection diagnosed in the U.S. and can lead to serious complications. If symptoms occur, they usually begin 3 to 17 days after being exposed to the fungus. The most common symptoms include fever, chest pains, and a dry cough. As the disease progresses other symptoms such as fatigue, weight loss, shortness of breath, and reduced or loss of vision may occur. Infection can spread to other organs besides the lungs in people that are immunosuppressed. Severe complications affecting the central nervous

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system such as confusion, seizures, and swelling of the brain can occur if infection is left untreated.

People with weakened immune systems or history of lung disease are advised to avoid areas with bird droppings and direct contact with birds. People who must spend significant time working in chicken coops should be fitted with a respirator to prevent inhalation of spores. Areas with large amounts of bird droppings should be cleaned by professionals that specialize in the removal of hazardous waste.

For additional information of Histoplasmosis refer to:

<http://www.cdc.gov/fungal/histoplasmosis/>

<http://www.medicinenet.com/histoplasmosis/article.htm>

Psittacosis

Psittacosis is a bacterial infections caused by *Chlamydophila psittaci* (formerly named *Chlamydia psittaci*). Humans acquire the infection by inhaling the organism which is present in droppings and secretions from birds. The incubation period is 5 to 19 days. It is a rare disease with fewer than 100 cases per year in the United States. Although all birds are susceptible, pet birds (parrots, parakeets, macaws, and cockatiels) and poultry (turkeys and ducks) are most frequently involved in transmission to humans. Infected birds are often asymptomatic.

The most common symptoms in humans include fever, chills, fatigue, headache, muscle and joint aches, cough and shortness of breath. Pneumonia is often evident on chest x-ray. Endocarditis, hepatitis, and neurologic complications may occasionally occur. Severe pneumonia requiring intensive-care support may also occur. The infection is treated with antibiotics.

For additional information on psittacosis visit:

http://www.cdc.gov/ncidod/dbmd/diseaseinfo/psittacosis_t.htm or

<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001152/>

SALMONELLOSIS

Many species are susceptible to infection with bacteria within the genus *Salmonella* including guinea pigs, mice, rats, chickens, pigs, sheep, cats, rabbits, reptiles, and nonhuman primates. However, rodents and rabbits raised for use in research are very rarely infected. Infected animals may display no signs of infection or be severely affected with diarrhea, dehydration, or systemic bacterial infection.

In the laboratory environment, *Salmonella spp* may be transmitted to humans when a person ingests infected fecal material such as when a fecally contaminated glove or piece of equipment contacts a human's mucous membranes. Infected humans may have diarrhea (with or without blood), fever,

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and stomach cramps. More severe signs and symptoms may develop especially in individuals with compromised immune systems. Onset of signs will usually occur 12-72 hours after infection and last for 4-7 days. In humans, infection is diagnosed through laboratory testing of a stool sample or vomitus. The practice of good personal hygiene, such as hand washing after handling animals and their environment, the use of personal protective equipment, and effective environmental sanitation are most important in preventing disease transmission to personnel. Although the disease may be treated with antimicrobials, infected individuals most frequently are provided supportive care (i.e. electrolyte replacement, intravenous fluids) until they recover.

Additional information regarding Salmonellosis can be found at:
http://www.cdc.gov/ncidod/diseases/submenu/sub_salmonella.htm

If you have had an exposure, illness symptoms, and need medical attention please refer to the information in the [Bite Scratch Protocol](#).

Contact the UCUCA Office at 763-8028

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