

Bird-borne Human Diseases

By George Wyatt
Garrison Safety Office
Fort Campbell, KY

Could you imagine our environment devoid of birds? That's a question my brain stumbled upon as I pondered ideas to include in this article to increase awareness of diseases birds can introduce to humans. It was a sobering thought that made me think of the relationship people and birds have enjoyed for many millennia. Did you know that archaeologists have uncovered evidence that indicates humans domesticated chickens more than five thousand years ago! Scientists also believe the Rock Pigeon was domesticated over ten thousand years ago. Birds contribute to the plant cycle of our planet. They are crucial to undesirable insect control. And there is no question birds provide endless aesthetic grace and splendiferous grandeur to the environment in which we live. I am convinced that birds would continue to thrive without us, but I believe the world would be a sad place without them.

With all the good birds bring into our lives every day, it is also important to remind ourselves occasionally that birds carry and harbor viruses, bacteria, and disease carrying parasites that can cause illness in humans under certain conditions. Fungal organisms which are naturally attracted to the droppings of wild and domestic birds can also be an illness hazard to us. In the next few paragraphs I will briefly discuss the diseases that these organisms can cause, some symptoms of the diseases and how we can remain safe in our interaction with birds.

There is no need for nation-wide pandemonium with regards to bird-borne disease, but the hazards are serious for those at risk for elevated exposure. It is serious enough for us to be aware of the associated hazards so we can recognize them and better protect ourselves from them. The natural environment absorbs bird-borne hazards very well in the wild. It is the encroachment of bird activity in our domestic environment that the issue becomes a concern. We can become exposed in a number of ways. Workers can be exposed on the job when pigeons or other bird species populate attics, breezeways, equipment sheds, warehouses, open bay aircraft hangars and vehicle maintenance facilities. Those who raise or breed domestic birds such as chickens, ducks, turkeys, etc. are exposed. Those who own tropical or other domesticated birds as pets are considered exposed. Large numbers of birds may take up roosting, breeding, and nesting in a single tree or in a group of trees in a small area that Mother Nature cannot quickly absorb through natural processes. When this situation occurs in our yards, playgrounds, tree orchards, or picnic, camping and recreation areas, our risk for exposure is increased. Folks that lure song birds and hummingbirds into their yards with bird feeders are at an increase exposure risk. Professional animal control personnel, endangered species and relocation program personnel, veterinary services personnel, and other professional organizations and agencies are exposed and usually trained to deal with the associated hazards. Bird habitat cleanup teams and individuals are exposed and need to practice proper sanitary procedures and protect against illness.

There are more than 20 diseases that may be contracted by humans with direct and indirect exposure with birds and bird feces or body fluids. Add about 20 more diseases to the list that are related to the diseases parasites carry that dwell within or on birds. We will discuss only one disease for illustrative purposes but keep in mind that some of these diseases are easily contracted while others are not. Some of the diseases have minor or no symptoms for some affected people and others can lead to death. Certain bird-borne diseases can lead to pneumonia. Some may mimic pneumonia. Other diseases attack internal organs, the skin, the central nervous system, or the eyes. Most diseases bring on symptoms that are described as flu-like. For our illustrative example, histoplasmosis is one of the diseases that

originates when a certain type of fungal organism manifests itself in the droppings of birds and animals. As the feces dries and crumbles, spores can become airborne and breathed into human lungs. About 500,000 people will be exposed to histoplasmosis this year in the U.S. The disease may be manifested in three forms: acute pulmonary (most common), chronic cavitary pulmonary, and disseminated. Most of these exposures will result in no symptoms and will go undetected and undiagnosed. For those who do suffer symptoms most will experience a cough, a fever and other flu-like symptoms and should see their doctor. Those that suffer severe effects may need to be hospitalized for specific treatment and observation. Although considered rare, extreme histoplasmosis cases (usually the disseminated form) will account for about 52 U.S. deaths this year. An important point to remember with any of the diseases mentioned in this paragraph, the young, the elderly, and people with degraded immune systems will usually suffer the most severe effects.

Protecting ourselves from the hazard is not that difficult. People that work with birds professionally should know that the Occupational Safety and Health Administration (OSHA) requires employers to have a written plan or program that describes what they do and how they do it. We that work for the Army generally refer to this document as Standard (or Standing) Operating Procedures (SOP). OSHA also requires that each workplace be assessed for hazards and documented. This document is called a Workplace Hazard Assessment (WHA) and documents hazards identified in the workplace and describes any requirement for the use of Personal Protective Equipment (PPE). OSHA also recommends and some Army Commands (IMCOM, for example) require that a Job Hazard Analysis (JHA) be developed for each job having significant job-related risks. The Army further requires that an operational composite risk assessment be conducted using a Composite Risk Assessment Worksheet (DA Form 7566) for operations with significant associated risks that cannot be adequately assessed using the WHA. OSHA and the Army also require personnel to be trained in the job before performing their work. Other Federal Agency regulations and exemptions may apply for those working with birds in farming or ranching scenarios.

Personal Protective Equipment (PPE) considerations for dealing with bird-borne hazards will depend on the job. Rubber gloves and boots will protect the hands and feet from exposure. Coveralls (washable or disposable) are used to protect arms, legs and torso. Safety glasses and hearing protection may be necessary to protect against ricochet and noise when weapons are used for lethal eradication. Safety glasses or goggles should also be considered to prevent direct eye exposure to fresh droppings and over splash of wet or dry contamination during cleaning operations. Dust masks will protect against breathing airborne spores into the lungs. The suggested mask is one that meets the minimum National Institute for Occupational Safety and Health (NIOSH) N95 standard for particulate filtering. NIOSH N99 and N100 masks offer even better protection. PPE and equipment should be cleaned (or disposed of) and disinfected promptly after the job is complete to prevent residual contamination. Dead birds should never be handled with unprotected skin. Use rubber gloves and transport carcasses in plastic bags to the disposal point.

For the rest of us that do not work with birds every day still need to know some basics. The best way to prevent bird-borne disease is to recognize the hazard and avoid exposure. When a bird infestation occurs in an unwanted/unhealthy location that exposes people to risks it is important to call an agency to professionally resolve the problem. Professionals in this field employ a number of methods to solve the problem. It is not recommended to attempt eradication on your own if you are not trained. Most of us work on a military installation, most of which have a public works directorate. Organizations should contact the service order section of their Directorate of Public Works (DPW) to initiate a work order that will get pest control personnel on your problem. If the infestation is in your home or structures of your

own personal property call the local animal control agency to see if they'll deal with the issue. If not, you may have to go to a commercial agency.

For those who experience occasional minor problems with bird dropping on picnic tables, decks, porches, patios, etc., may remove the hazard by simply hosing the area down with water. If scrubbing and disinfecting is necessary for fences, playground equipment, lawn furniture, etc., use a solution of 1 part chlorine bleach to 9 parts water then rinse the area down with water. Accumulations of droppings should be made wet with water before removal and disposal to reduce the risk of dry contamination becoming airborne. Bird feeders should be placed toward the back of the yard. They should be cleaned before refilling if droppings are present. The area under feeders will accumulate droppings, so hose down the area frequently. Remove dropping accumulations under the feeder manually and if you wish to disinfect use the solution mentioned earlier. The solution used occasionally in volumes less than one gallon should not harm most healthy lawn grass. Review the PPE paragraph above and select the appropriate PPE you need to protect yourself even during minor cleaning and disinfecting.

We need to remember that our children are most susceptible to contracting bird-borne diseases. It is important to monitor their play areas to make sure exposure is kept to a minimum. The elderly are also very susceptible to the diseases, but are typically at minimal exposure risk due to slowed activity levels. Uncooked wild and domestic meat should be handled in such a way that juices do not contaminate other food. Don't consider poultry cooked until a meat thermometer reaches the recommended temperature for doneness in your recipe. Keep pet bird cages and habitat clean and monitor their health. Pet birds are usually low risk for carrying diseases.

If you think you may have an infestation situation or otherwise need assistance with a bird problem, please call someone. Your Garrison Safety Office or your Preventive Medicine, Industrial Hygiene Section can help identify the problem, assess the hazards, and recommend courses of action to eliminate the problem. Finally, not discussed in this article but important to know, bats and rats are harmful vectors in human environments. If it's bats or rats instead of birds causing problems for you, again, call someone!