

Bioterrorism: Are You Prepared?

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Use of infectious organisms as biological weapons is now considered a realistic threat in the United States. October, 2001 anthrax attacks were conducted via five envelopes that were sent through the U.S. postal system. All were mailed from Trenton, New Jersey, and all contained spores identified as *Bacillus anthracis*. As participants in an animal industry we have the opportunity and responsibility to be observant of disease outbreaks that might represent biological weapon release.

It could be difficult to detect the release of biological agents. They could be disseminated over a large geographic area and clinical cases may take days to weeks to recognize. There is also the possibility of secondary spread via person-to-person contact or through vectors such as flies, ticks or mosquitoes. Wildlife would also have the potential to spread disease over large areas and could serve as a source of infection for humans and animals. Many pathogens that may be potentially used as bioweapons are zoonotic. Therefore, disease may first occur in animals, before it occurs in humans. For example in 1999 when West Nile Virus was first identified in the Western Hemisphere, unusual bird mortality occurred before any human illness was detected. These factors, especially the delayed recognition, allow the perpetrator time to leave the area and make the biological attack extremely effective.

The best protection from the effects of a biological attack is prevention via biosecurity, but in the event of an attack, early recognition would be critical to decrease the impact. Some clues suggesting that a biological agent may have been released include: 1) an unusual clustering of illness or mortality in people or animals in a given region or at a given time 2) normally healthy individuals suddenly becoming ill 3) unusual or atypical symptoms 4) an unusual age distribution for common diseases (e.g. an increase in chickenpox-like illness among adult patients may be smallpox) or 5) the disease occurring outside its "typical" season (e.g. flu-like symptoms in humans in June in the northern hemisphere).

Humans can become infected with zoonotic diseases in various ways. These include: 1) respiratory - by inhaling contaminated dust from the soil or environment or via an aerosol from a person or animal (e.g. sneezing or coughing) 2) vector transmission via bites of fleas, lice, ticks or mosquitoes 3) direct contact with a sick person or animal or its body fluids such as blood, saliva, feces, urine or vomit 4) ingestion of contaminated food or 5) drinking of contaminated water. Different infectious agents can be spread via one or more of these mechanisms.

Some factors that promote zoonotic disease transmission include frequent contact with domestic or wild animals, people living in or visiting areas that overlap with wildlife habitats or intensive livestock production. These are difficult to manipulate. However, other factors such as poor animal sanitation, poor animal health, and poor personal hygiene can also promote transmission of zoonotic diseases, and these can be minimized.

The best protection from the effects of release of infectious zoonotic agents is implementation and adherence to strict biosecurity protocols and an early detection of any signs of an unusual disease. A list of zoonotic diseases affecting cattle that could potentially be used as bioweapons is provided in this month's insert. More information on zoonotic agents can be found at the CDC web site: <http://www.bt.cdc.gov/Agent/agentlist.asp>. Also in this insert is a summary of biosecurity measures for prevention and control of infectious diseases and emergency contacts for reporting suspected bioterrorism. It is important to realize that weaponized biological agents may have atypical routes of transmission and clinical manifestations.

Recently, Iowa State University's Center for Food Security and Public Health (CFSPH) conducted the training session entitled *Bioterrorism Awareness Education: Zoonotic Disease Training for Veterinarians*. Two Colorado veterinarians, Drs. Magda Dunowska and Jamie Snow attended this session and can give presentations on zoonotic diseases to various audiences in Colorado. If you are interested in a presentation, contact Dr. Dunowska at (970) 297 4539 or Dr. Snow at (970) 988 9913.