

Users Guide for the “Petting Zoo” Compendium

This Guide is taken directly from the *Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2009*, which was prepared by the National Association of State Public Health Veterinarians, Inc. (NASPHV). After reading this guide, the reader should refer to the full *Compendium* for Recommendations and Appendices, both of which are concise and easy to follow.

Introduction:

- Contact with animals in public settings (e.g., petting zoos, animal swap meets, pet stores, nature parks, educational farms, county or state fairs, daycares or schools) provides opportunities for entertainment and education.
- Disease and injury occur among visitors to these settings. Since 1996, disease outbreaks involving hundreds of people have been reported.
- Although eliminating all risk from animal contacts is not possible, risks can be minimized.
- The recommendations in the *Compendium* can help people who own, manage, consult with, or visit an animal contact venue minimize disease and injury risks.

Enteric (Intestinal) Diseases:

Infections with enteric bacteria and parasites (those found in the gut) pose the highest risk for human disease from animals in public settings. Examples of these organisms include: *Escherichia coli* O157:H7, *Salmonella*, *Cryptosporidium*, and *Campylobacter*. Some of these cause self-limiting illness; however, others can lead to serious illness or even death.

The primary mode of transmission for enteric pathogens is fecal-oral. The organisms live in the gut and exit the animal in its manure. From there they scatter and contaminate anything they contact including the animal's hair, skin, fur, saliva, bedding, feed buckets, fences, and barriers. Bacteria and parasites can also contaminate items associated with visitors such as their clothes, shoes, stroller wheels, diaper bags. People swallow the organisms when they touch contaminated items then put their hands in their mouth before hand washing. Of course, if a person's food, pacifier, sippy cup, or toy becomes contaminated, it can serve as a source of transmission too.

Key Things to Know about Enteric Organisms:

1. A healthy, normal animal can harbor and shed organisms without showing signs. Removing animals showing signs of illness doesn't ensure that remaining animals are free of organisms.
2. It only takes a few organisms to make a person ill.
3. Organisms live for months in the environment. In one study *E. coli* O157:H7 associated with an outbreak was found in animal bedding 10 days after the fair and in the soil for 5 months.
4. The animals only shed organisms intermittently. Therefore, if you test an animal and do not find any, you cannot assume the animal is free of organisms.
5. Organisms cannot be eliminated from an animal by treating it with antibiotics. In fact, treating an animal with antibiotics may actually prolong the shedding of organisms.
6. Although cattle, sheep, and goats commonly carry these organisms, other domestic and wild animals, including poultry, rodents, and reptiles can be sources.

Public contact settings can contribute to the animals' shedding of organisms:

1. Stress of transportation, confinement, crowding, and handling causes animals to shed organisms.
2. Comingling of animals can cause transmission.
3. Young animals, often preferred in contact settings, are likely to be infected and shed organisms.

4. If the facility does not have well supplied, convenient hand washing facilities, transmission of illness is much more likely.
5. If food serving and consumption areas are not kept separate from animal contact areas, transmission is much more likely.

Certain human factors also increase the risk of disease transmission:

1. If people are unaware of the risks of animal contact, they do not understand how best to avoid coming into contact with these organisms.
2. Children have little knowledge of the risks, are more likely to come into close contact with the animals, are more likely to put their hands (or other contaminated items) into their mouths, and are less likely to wash their hands properly.
3. If parents do not closely supervise their child, the child is much more likely to ingest organisms.
4. Failure to clean contact surfaces, such as shoes, stroller wheels, school tables and desks, after activities with animals or animal products can lead to transmission.

Outbreaks and Lessons Learned:

- **Risk factors associated with becoming ill after visiting an animal contact venue:**
 1. Not adequately washing their hands was by far the most common factor. Inadequate hand washing included:
 - a. Hand washing facilities not configured for effective use by children
 - b. Lack of running water
 - c. Lack of soap or paper towels
 - d. People drying hands on their clothes
 - e. Removing dirty coveralls and boots after washing hands, thus recontaminating the hands
 - f. Lack of good signs reminding visitors to wash their hands upon leaving the animal contact area and guiding them on proper hand washing techniques
 2. Having direct animal contact
 3. Direct contact with animal bedding, sawdust, shavings or barriers
 4. Feeding animals
 5. Getting visible manure on hands
 6. Lack of areas for eating and drinking separate from the animal contact areas
- **“Protective factors” If these factors exist, the likelihood of illness is reduced:**
 1. Visitors’ washing their hands with soap before eating or drinking. Hand washing has been reported repeatedly as an important protective factor.
 2. Visitors having knowledge that the risk of illness exists.
- **Additional Health Concerns:**
 1. Allergies associated with animal dander, scales, fur, feathers, urine, and saliva
 2. Injuries due to bites, kicks, falls, scratches, stings, or crushing
 3. Exposures to rabid, or potentially rabid, animals in animal contact settings
 4. Animal bites and skin contact (ringworm, orf, monkeypox)
 5. Both internal and external parasites can be passed from animals to people.
 6. Direct or indirect contact with reproductive fluids, aborted fetuses, or newborns from infected dams can transmit organisms. In addition, the organisms can be aerosolized and inhaled by visitors.

Please go to the Recommendations and Appendices of the full Compendium to learn about techniques to prevent the diseases and injuries discussed above.

The Compendium is available on the web at: <http://www.nasphv.org/documentsCompendiaAnimals.html>