Share the Knowledge, Not the Illness:
ANIMAL CONTACT IN PUBLIC SETTINGS

Visiting petting zoos and animal agriculture exhibits is a great way to teach kids about animals and how they are raised. However, farm animals can carry germs that make people sick, but some simple precautions can keep us and our families safe.

How can contact with farm animals make you sick?

- Bacteria that are harmful to people can be spread by healthy animals.
- These bacteria are on the skin, fur and feathers of the farm animals, and also in the animal bedding.
- Petting or holding farm animals can transmit these bacteria to people.
  - Poultry and reptiles are the greatest threat.
- Some examples of these harmful bacteria are:
  - *Salmonella spp.*
  - Pathogenic *E. coli*
  - *Campylobacter spp.*
  - *Listeria monocytogenes*
  - *Yersinia enterocolitica*

Have people gotten sick from animal contact before?

Yes. Here is a list of some previous disease outbreaks people experienced from animal contact.

When did it happen?	How many people were sick?	What type of setting was involved?
2004	187	State Fair
2009-2010	93	Open farm
2012	106	County Fair
2013	57	Petting zoo
2016	895	Backyard flocks

Who is most at risk?

- Young children (< 5 years old)
- The elderly (> 65 years old)
- Pregnant women
- People with compromised immune systems

What are some of the signs of illness in people?

- Diarrhea
- Vomiting
- Fever
- Abdominal cramps

People can become sick enough to need hospitalization.

What behaviors may transmit harmful bacteria?

- **Direct mouth** contact with animals
  - Kissing animals
  - Snuggling animals against your face
  - Lip or mouth contact with fences

- **Hand-to-mouth activities** after contact with animals or the animals' environment
  - Nail biting
  - Eating
  - Use of pacifiers
  - Drinking from bottles or sippy cups
  - Thumb sucking

How to prevent illness?

- Don't let people most at risk handle or come in direct contact with farm animals or their environment.
- Do not kiss animals or snuggle them against your face.
- Do not eat or drink while interacting with animals.
- Wash hands after animal contact.
  - Adults should supervise young children's handwashing.
  - Use hand sanitation stations when available, if proper handwashing is not available.
    - ◊ Hand sanitation alone is not effective. Full effective handwashing is still required.

References

Aedin's Law. 2005: GS 106-520.3A General Assembly of North Carolina Session 2005. Available at: http://www.ncga.state.nc.us/sessions/2005/bills/senate/pdf/s268v4.pdf

Beutin, L., Geier, D., Zimmermann, S., & Karch, H. (1995). Virulence markers of Shigalike toxin-producing Escherichia coli strains from healthy domestic animals of different species. Journal of Clinical Microbiology, 33(3), 631-635.

CDC, 1988: Human Infection with Swine Influenza Virus-Wisconsin. The Morbidity and Mortality Weekly Report (MMWR). Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/00021592.htm

CDC, 2011a: Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2011: National Association of State Public Health Veterinarians, Inc. (NASPHV). The Morbidity and Mortality Weekly Report (MMWR). Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6004a1.htm

CDC, 2011b: E. coli (*Escherichia coli*). Available at: http://www.cdc.gov/ecoli/general/index.html#what_shiga

CDC, 2012. Notes from the field: *Escherichia coli* O157:H7 gastroenteritis associated with a state fair-North Carolina, 2011. The Morbidity and Mortality Weekly Report (MMWR). Available at: https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6051a5.htm

Erdozain, G., KuKanich, K., Chapman, B., & Powell, D. (2013). Observation of public health risk behaviors, risk communication and hand hygiene at Kansas and Missouri petting zoos-2010-2011. Zoonoses and Public Health, 60, 304-310.

Foddai, A. C. G., Grant, I. R., & Dean, M. (2016). Efficacy of instant hand sanitizers against foodborne pathogens compared with handwashing with soap and water in food preparation settings: a systematic review. Journal of Food Protection, 79 (6), 1040-1054.

Goode, B., & O'Reilly, C. (2005). Outbreak of Shiga toxin producing *E. coli* (STEC) infections associated with a petting zoo at the North Carolina State Fair-Raleigh, North Carolina, November 2004 Final Report. Available at: http://epi.publichealth.nc.gov/cd/ecoli/figures/EColiReportFinal062905.pdf

Hale, C. R., Scallan, E., Cronquist, A. B., Dunn, J., Smith, K., Robinson, T., Lathrop, S., Tobin-D'Angelo, M., & Clogher, P. (2012). Estimates of enteric illness attributable to contact with animals and their environments in the United States. Clinical Infectious Diseases, 54(Suppl 5), S472-S479.

Jensen, D. A., Danyluk, M. D., Harris, L. J. & Schaffner, D. W. (2015). Quantifying the effect of handwashing duration, soap use, ground beef debris and drying methods on the removal of Enterobacter aerogenes on hands. Journal of Food Protection, 78(4), 685-690.

The Independent Investigation Committee, 2010: Review of the major outbreak of E. coli O157 in Surrey, 2009. Report of the Independent Investigation Committee June 2010. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/342361/Review_of_major_outbreak_of_e_coli_o157_in_surrey_2009.pdf

Whatcom County Health Department, 2015: E.coli O157:H7 outbreak in Whatcom County, Washington Final Investigation Summary. Available at: http://www.co.whatcom.wa.us/CivicSend/ViewMessage/message?id=5760

Authors

Wenqing (Wennie) Xu, Ph.D. Assistant Professor/Consumer Food Safety Specialist, LSU School of Nutrition and Food Sciences

Christine Navarre, DVM, MS, DACVIM. Professor/Extension Veterinarian, LSU School of Animal Sciences

Crystal Ahrens, MS, LSU AgCenter 4-H Livestock Specialist

Diana Coulon, DVM. Instructor, LSU AgCenter Biotechnology Laboratory

Melissa Cater, Ph.D. Associate Professor/ Program Evaluation Specialist, LSU AgCenter Department of Agricultural and Extension Education & Evaluation

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William B. Richardson, LSU Vice President for Agriculture

Louisiana State University Agricultural Center, Louisiana Agricultural Experiment Station, Louisiana Cooperative Extension Service, LSU College of Agriculture