

E.coli Case Study

Animal Petting Farm

“A number of people became ill after being exposed to E. coli in our petting zoo. It was and continues to be a traumatic experience for the families affected and it has been very painful for the x family as well. We feel a responsibility to try to help prevent an outbreak from happening on another farm.”

Lessons learned (so far) from E. coli outbreak:

E. coli is a common bacteria with many strains, some harmless and some extremely dangerous.

- E. coli O157:H7 is one of the strains, and produces a toxin known as Shiga.
- Shiga is a powerful toxin, and it can cause intestinal infection.
- Some 265,000 Shiga toxin-producing E. coli (STEC) infections occur each year in the United States (U.S.). Around 36 percent of these are probably caused by E. coli O157:H7.

STEC in Humans

- Most people make a full recovery within a week.
- However, around 10 percent of people are at risk of developing Hemolytic Uremic Syndrome (HUS). These are mostly young children and the elderly.
- HUS is characterized by hemolysis, or a breakup of red blood cells. This can cause anemia, a low platelet count, and kidney failure.

The problem for all of us in agritourism

- E. coli 0157 is naturally found in the intestinal tracts of many farm animals, including healthy cattle, sheep, and goats. Animals can carry E. coli 0157 and shed the germs in their stool but still appear healthy and clean. The germs can quickly contaminate the animals' skin, fur, feathers, and the areas where they live and roam.
- Animals can appear healthy and clean but can spread E. coli 0157 to humans or other animals.

When a person in the U.S. is diagnosed with an infection caused by E. coli

- Doctor fills out a questionnaire about the patient's recent travels, animal contact, diet
- Questionnaire is submitted to a national database
- If multiple patients are diagnosed in short period of time within a geographical region; local, state, and/or federal health authorities will open an investigation (less than 10% of E. coli infections are investigated and many of those investigations are not conclusive).
- First step in investigation is to look for commonalities in the doctors' questionnaires.

In our case

5 to 10 patient cases were reported in the greater area in the first week of November. More would be reported in following weeks including 2 from Nevada.

- All of them reported recent visits to our farm
- We received calls from two county health officers right away. Because at least 3 counties had cases, the state department of public health opened an investigation.
- Within a few days of our first notification, the state asked if they could come out to collect manure and bedding samples from our animals and pens. Any samples testing positive for E. coli would then get a PFGE test (a DNA fingerprint) that would be compared to test results from patients.
- Testing confirmed 20 people had E. coli infections caused by the O157:H7 strain with a PFGE pattern identical to what was found on our farm. It was a rare PFGE pattern that had not been previously found other than a 2012 test result in Ohio.
- 7 patients developed HUS
- + At least 4 patients, all children 4 years old or younger, were in critical condition at some time but 3 of them have recovered.
- Testing conducted by the state showed we had multiple animals shedding the same strain of E. coli with the same rare PFGE pattern as all of the patients shared.

Lawsuits

- Lawsuits against us have been filed by three families. Cases have been combined and we are scheduled for trial soon. Settlement negotiations have failed so far. We expect that a successful settlement will have to include a sizeable monetary contribution from us.
- Our Insurance underwriter has sued us in Federal court claiming that their policy doesn't cover us at all because of various exclusions. If they fail in that argument, they claim all cases should constitute one occurrence rather than three.

The plan for reducing risk of E coli outbreak associated with Petting Zoo:

1. Reduce load of E. coli
- Testing and vaccination
 - We are gathering fecal samples and testing once per year. This only tells us if we

- have an animal shedding e. coli on that day, but it's something.
 - Vaccination is unproven for our purposes but it is one more layer.
 - Decontamination of pens before season
 - Put animals on city or treated water
 - My best theory on our outbreak was that heavy rains caused E. coli
 - contamination of an old well that provided drinking water to the animals.
 - Remove any animals that appear unhealthy from the petting zoo
2. Increase education of guests
 - Safety video will be mandatory at entrance to petting zoo
 - Increase staff training so they can correct risky behaviors.
 3. Reduce transfer opportunities from animals to guests
 - Eliminate runoff from pens into walkways
 - Eliminate employee travel from pens to guest walkways without changing shoes
 - Reduce opportunities for petting
 - Do not allow guests in pens
 - Do not allow cuddling or holding of animals, especially the babies
 - Higher risk animals such as cattle should be out of reach for petting
 - Concrete washable walkways
 - No goat climbable fence rails that are likely to be touched by guests
 - Leave strollers, etc outside
 - Regular washdown and sanitation of fences and walkways
 4. Increase opportunities for and demands to use handwashing
 - 36 stations including some before the exit.
 - Warm water and soap available
 - Attendant at exit to encourage hand washing

Lessons to pass on:

- 1) Cultivate a positive relationship with your health inspectors and other local authorities.
- 2) Have a crisis communications plan.
- 3) Do a risk analysis on your own for all activities on your farm and work to reduce risks.
- 4) Check your insurance
 - Check your policy limits
 - If you have significant assets owned by the entity that runs your agritourism operation, add an excess or umbrella policy.
 - Read all of the exceptions and ask questions
 - Get coverage specifically for E. coli if possible
 - Make sure any and all entities (corporations, LLCs, trusts) are listed as additional insureds.
 - Make sure your insurance covers shareholders, officers, landlords, and employees.
 - Have conversations with your broker by email and keep a record
- 5) Check your ownership structure

- Use a corporation or LLC structure to operate the agritourism business.
- Make sure you follow rules to operate the Corp or LLC properly
- Own real estate outside of the company and have a written lease (prepared by a lawyer) requiring the landowners to be insured by the company.
- Consider a separate LLC that would own major equipment and lease it to the operating entity — you don't want too many assets at risk.

