Attempts to Control Salmonellosis Outbreak Case Study

An outbreak of salmonellosis occurred in a large university veterinary teaching hospital.

During the first 7 weeks of the outbreak, *Salmonella infantis* was isolated from 35 animals, including 28 horses, 4 cows, 1 camel, 1 goat, and 1 dog. Bacterial cultures of fecal samples collected at the time of admission were all negative for *S. infantis*. During the course of the outbreak, several infected horses developed fever and diarrhea, and some veterinary students felt that they might have been infected.

A total of 148 environmental samples were collected for bacterial culture during weeks

1 through 7 of the outbreak, and isolates of *S. infantis* were obtained from rectal thermometers, the rubber mat flooring of a horse stall, and from the hands of one hospital worker.

The large-animal portion of the veterinary teaching hospital was closed. The facility was then cleaned by high-pressure power washing and disinfected with a quaternary ammonium product. Surgical recovery stall mats were cleaned a second time with a hydrogen peroxide product. Individual stall-side thermometers were stored in 0.5% chlorhexidine solution. *Salmonella* was not isolated upon resampling of the cleaned facility, and the hospital was reopened.

The first two animals admitted after reopening, a horse and a cow, were found to be positive for *S. infantis* in their feces after only a few days. Environmental samples were again positive.

A second outbreak ensued. The second outbreak was worse—over 80% of the animals with

*Salmonella* in their feces also had fever or diarrhea. Two foals failed to respond to treatment and were humanely euthanized.

* *Why do you think the sanitizing and disinfection failed to control the* Salmonella*?*