

# Salmonella enterica Prevalence in The Ohio State University Veterinary Medical Center Environment

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Salmonella is a harmful, often food-borne pathogen that can cause severe dehydration and diarrhea in humans and animals. In a veterinary teaching hospital, the health risk associated with direct Salmonella exposure threatens the safety of patients, staff and students. The objectives of this study are to measure the frequency of Salmonella in the OSU-VMC hospital environment, and determine if there are resident Salmonella strains which are maintained in the VMC. Samples were aseptically collected with an electrostatic cloth from twenty combined floor drains from the equine and food animal areas of the OSU-VMC between February 16 2015, and November 3, 2015. The samples were added to buffered peptone water, transferred to Rappaport-Vassiliadis broth, and inoculated onto XLT-4 and MacConkey agar. To determine if the bacterial growth was Salmonella a polyvalent antisera test was performed and the isolates were inoculated onto TSI slants. Pulsed-field gel electrophoresis was used to determine bacterial relatedness using banding patterns of recovered Salmonella isolates. A total of 23 Salmonella isolates were recovered from 360 (6.4%) environmental samples with prevalence ranging from 0 to 40% on 18 individual sampling dates. A total of 8.9% of food animal service drain samples and 3.9% of equine service drain samples were positive for Salmonella. The PFGE indicates that eleven unique Salmonella strains were recovered. A single Salmonella strain did not appear to persist within the OSU-VMC environment for an extended period of time. The presence of the same Salmonella clones recovered from both equine drains and food animal drains on the same date of sampling indicates the possibility of Salmonella being transferred between the two services, in addition to the rest of the hospital.