

Introduction:

This issue of the Nebraska Public Health Laboratory (NPHL) Newsletter is focused on a topic of importance to all clinical laboratories, the diagnosis of enteric pathogens, *Salmonella*, *Shigella*, *Campylobacter*, and toxin producing *E. coli*. *E. coli* O157:H7 has not only impacted the physical health of Nebraskans but also the state's economy. The clinical laboratory serves a vital role in detecting *E. coli* O157:H7, a cause of hemorrhagic enterocolitis (HEC) and also hemolytic uremic syndrome which most commonly appears in children.

One of the most important questions facing the laboratory is whether it is cost-effective to add a screening plate to detect *E. coli* O157:H7, since its occurrence is considered rare. A second question is which of the available assays is most effective and should screening for toxins be routinely performed? We are beginning a research study this spring to investigate these issues and provide a factual basis for making decisions on data obtained in Nebraska. A local study is necessary because the prevalence of *E. coli* O157:H7 varies significantly in northern vs. southern climates. It is interesting to note that *E. coli* O157:H7 was first recognized in the U.S. in 1982 and the third national major outbreak occurred in a Nebraska nursing home in 1984.

The research study is being conducted by Dr. Paul Fey in collaboration with Dr. Tom Safranek, State Epidemiologist at the Department of Health and Human Services. This study seeks to obtain stool samples from patients experiencing diarrhea and will compare screening agar methods with ELISA methods for detection of toxin and PCR methods for detection of specific genes. NPHL will also provide confirmation of *E. coli* O157:H7, as well as assay for the presence of toxin production in non-0157 strains recovered from patients with hemorrhagic enterocolitis. We greatly appreciate the cooperation of laboratories across the state and we will share with you results of the study as it becomes available. Steven H. Hinrichs