**Essential Question:** What causes foodborne illness outbreaks? How can they be prevented?

**Engagement Scenario**: Physicians from bordering counties in the states of Nebraska and Kansas report to their respective State Departments of Health a total of 20 individuals with severe gastroenteritis and stool samples positive for *E. coli* O157:H7. The Departments of Health from both states notified the United States Centers for Disease Control and Prevention (CDC). The CDC launched an investigation into the cluster of illnesses.

The epidemiology specialists from your local health department have requested your help in investigating the severity of the outbreak including the prevalence, the source of infection, and means to end the outbreak. Your team will assist the local health department with the investigation and prepare a final case report to share with the epidemiology specialists.

To gather information about the outbreak, your team will develop a questionnaire that will be used to interview food borne illness victims. Your team will research various aspects of food safety including GAPS, HACCP, and cleaning versus sanitation. For the final report, your team will describe common exposures, potential causes (food, individuals, environmental samples, other) that should be tested, interpretations of laboratory results, necessary actions to stop the outbreak, and necessary actions to take to prevent future outbreaks.

According to the Centers for Disease Control and Prevention, in 2011, “the overall annual estimate of the total burden of disease due to food consumed in the United States was 47.8 million illnesses, with 127,839 hospitalizations, and 3,037 deaths.” Because of these statistics, your local health department has emphasized the importance of solving the mystery of this food borne illness outbreak.