**Session 5: Analyzing Data**

**Session Overview**

**Summary**

In this session, we are going to cover a range of topics that you should be familiar with when you analyze data during an outbreak investigation.

An essential part of data analysis are the fundamental procedures that you should complete prior to analyzing data. This includes planning the analysis and cleaning the data.

After we discuss these precursors to data analysis, we will talk about attack rates as a function of descriptive epidemiology, and measures of association and tests of significance as a function of analytic epidemiology.

Analysis planning will ensure that your investigation will produce data that is useful in the analytic phase and can efficiently addresses your hypotheses.

Attack rates are descriptive statistics used in cohort studies that are useful for comparing the risk of disease in groups with different exposures (such as consumption of individual food items).

Analytic epidemiology allows you to test the hypotheses generated via review of descriptive statistics and the medical literature.

The measures of association for case-control and cohort analytic studies, respectively, are odds ratios and risk ratios.

Confidence intervals and p-values that accompany measures of association can be used to evaluate the statistical significance of measures of association.

**Intended Audience**

All public health, medical, veterinary, pharmacy, emergency management, hospital and other professionals interested in public health preparedness and field epidemiology.

**Running Time**

35 minutes of lecture  
20 minutes for pre-test, post-test, and evaluation  
Optional Discussion: 15 minutes (approximate)
Learning Objectives

- Discuss the purpose of an analytic study in an epidemiologic outbreak investigation
- Establish measures of association for cohort and case-control studies
- Interpret measures of association (risk ratios, odds ratios) and corresponding confidence intervals
- Interpret a statistical test of significance