

**ASPH Education Committee
MPH Core Competency Development Project**

III. Discipline-specific Competencies

Biostatistics

Biostatistics is the development and application of statistical reasoning and methods in addressing, analyzing and solving problems in public health; health care; and biomedical, clinical and population-based research.

Competencies:

Upon graduation a student with an MPH should be able to...

1. Describe the roles biostatistics serves in the discipline of public health.
2. Distinguish among the different measurement scales and the implications for selection of statistical methods to be used based on these distinctions.
3. Apply descriptive techniques commonly used to summarize public health data.
4. Describe basic concepts of probability, random variation and commonly used statistical probability distributions.
5. Apply common statistical methods for inference.
6. Describe preferred methodological alternatives to commonly used statistical methods when assumptions are not met.
7. Apply descriptive and inferential methodologies according to the type of study design for answering a particular research question.
8. Interpret results of statistical analyses found in public health studies.
9. Develop written and oral presentations based on statistical analyses for both public health professionals and educated lay audiences.
10. Apply basic informatics techniques with vital statistics and public health records in the description of public health characteristics and in public health research and evaluation.