Unit 8: Statistical Tests, Part 1

Unit Purpose: To understand the statistical tests for comparing two proportions.

Learning Objectives

Use these learning objectives as a checklist during the week. After completing this week, you should be able to:

Comparing Proportions: Relative Risk

- ❑ read and interpret a contingency table.
- ❑ calculate a **risk** from a 2x2 contingency table and interpret it.
- ❑ calculate a **risk difference** from a 2x2 contingency table and interpret it.
- ❑ make a conclusion using a confidence interval for risk difference.
- ❑ recognize where the number needed to treat (NNT) or number needed to harm (NNH) comes from and what it means.
- ❑ calculate a **relative risk** from a 2x2 contingency table and interpret it.
- ❑ make a conclusion using a confidence interval for relative risk.
- ❑ describe when it would be more appropriate to summarize data using the relative risk and when it would be more appropriate to use the risk difference.
- ❑ recognize what it means to say that two variables are "associated".
- ❑ recognize when Fisher's exact and Pearson's chi-square tests of independence are used and when you would use one instead of the other.
- ❑ state the question that these tests of independence address, and make conclusion using the resulting *p*-values.

Comparing Proportions: Odds Ratio

- ❑ calculate the odds of an event and the probability (or risk) of an event, given appropriate data, and describe the difference between the two.
- ❑ calculate an **odds ratio** from a 2x2 contingency table and interpret it.
- ❑ make a conclusion using a confidence interval for odds ratio.
- ❑ describe some of the biases that could potentially occur in a retrospective case-control study.
- ❑ state when it is appropriate to summarize data using a relative risk and when it is appropriate to use an odds ratio.
- ❑ explain when the odds ratio is a good approximation of the relative risk, and what you can then conclude from it.