Lecture 3d: Practice Problems

John McGready
Johns Hopkins University
A healthcare information company is interested in estimating the average charge for a standard patient visit to a chiropractor in Maryland, after applying the discount negotiated with a large HMO plan. Data is collected from 16 randomly selected chiropractic practices in Maryland, and the following are some summary statistics:

- Mean charge: 25.50 USD
- SD of charges: 2.10 USD
1. Assuming the charge data is normally distributed for all chiropractic practices in Maryland, estimate a range of amounts that most (95%) of the chiropractic practices in Maryland charge for a standard patient visit.

2. Without assuming normality, estimate a range of amounts that most (95%) of the chiropractic practices in Maryland charge for a standard patient visit.

3. Assuming the charge data is normally distributed for all chiropractic practices in Maryland, estimate a 95% confidence interval for the mean amount charged by Maryland chiropractors.

4. Without assuming normality, estimate a 95% confidence interval for the mean amount charged by Maryland chiropractors.

5. What is the difference in the interpretation of the intervals created in questions 1 and 2 and questions 3 and 4?