Simulating Sampling Distributions

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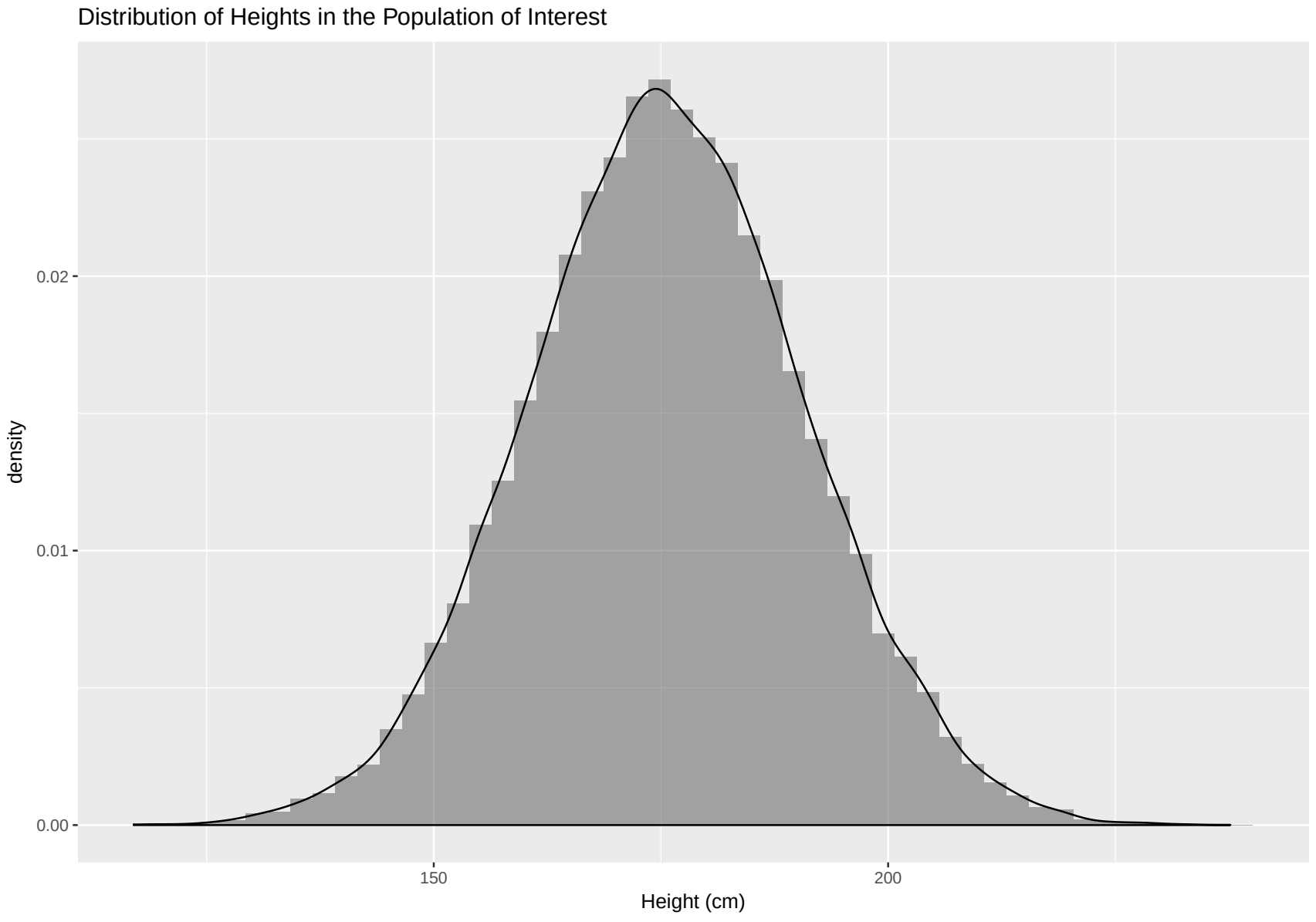
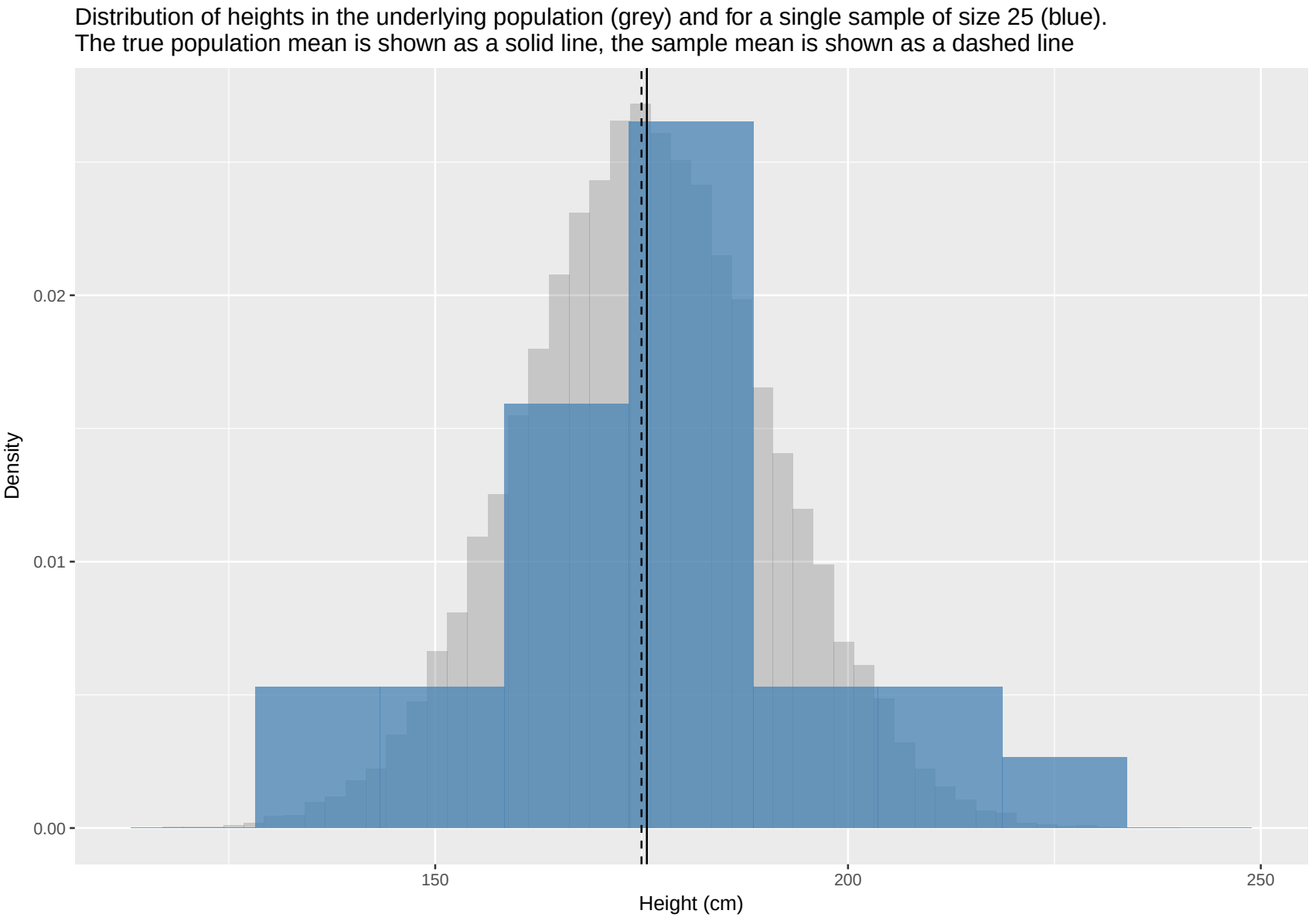
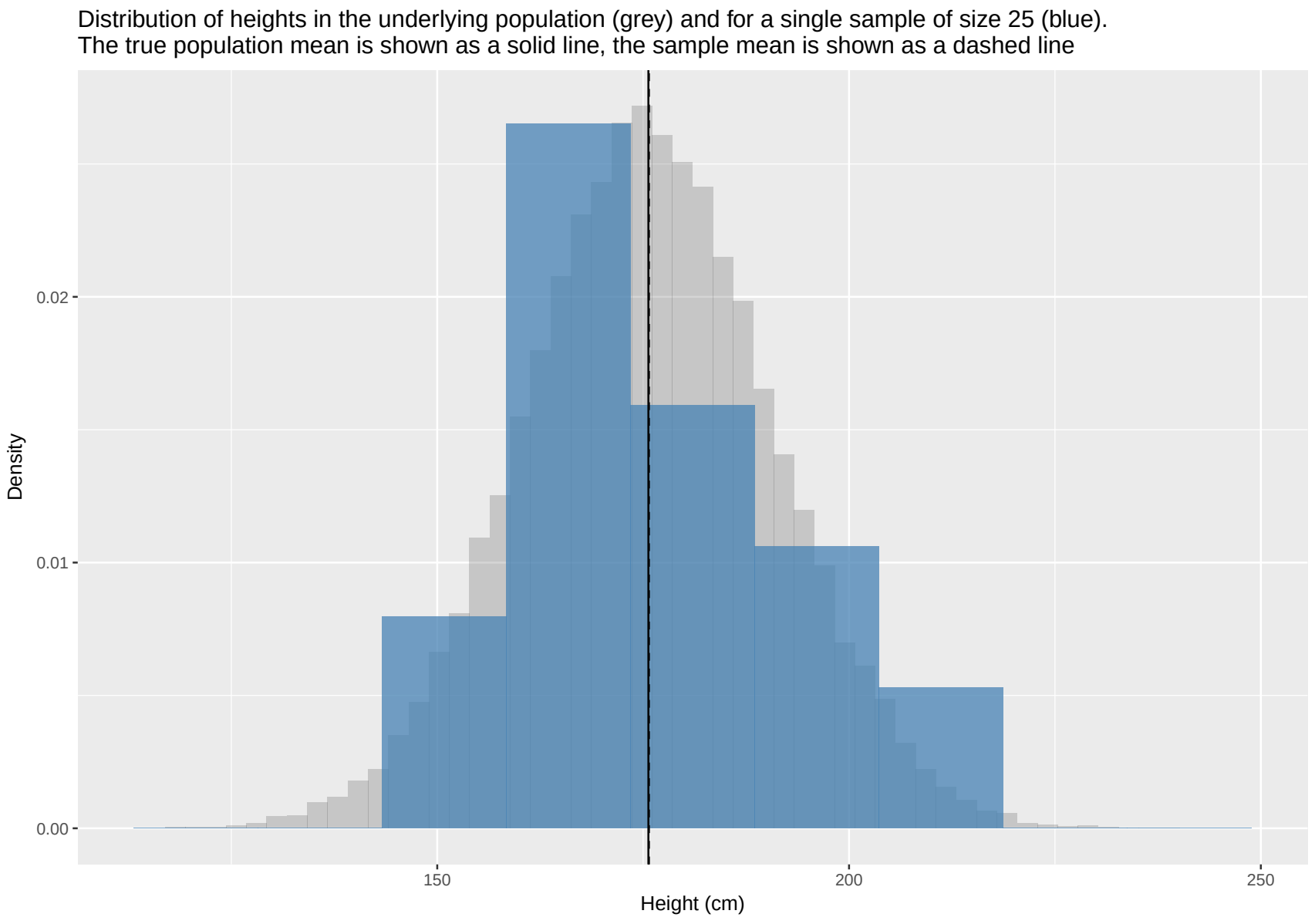
Population of interest



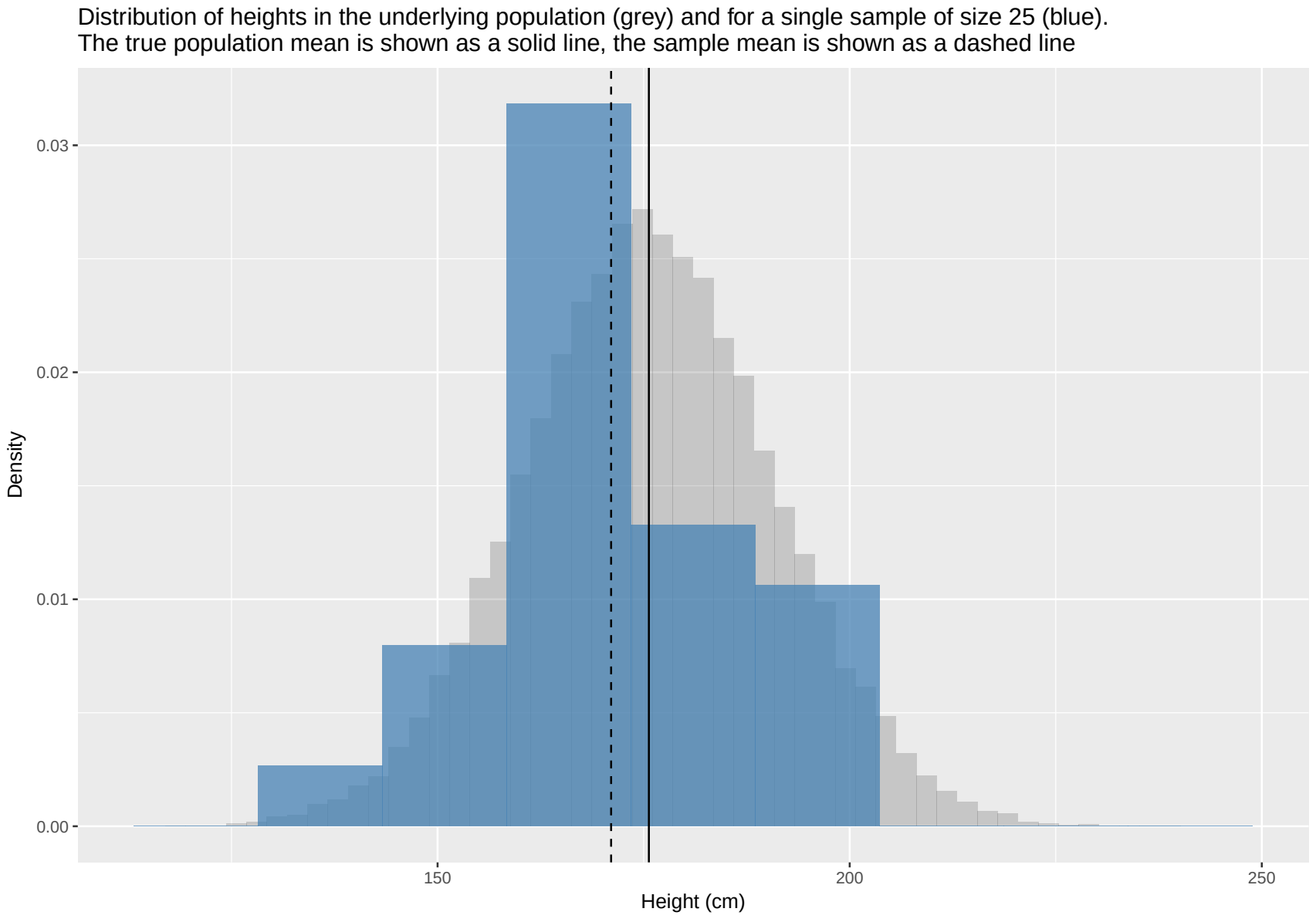
A random sample of size 25



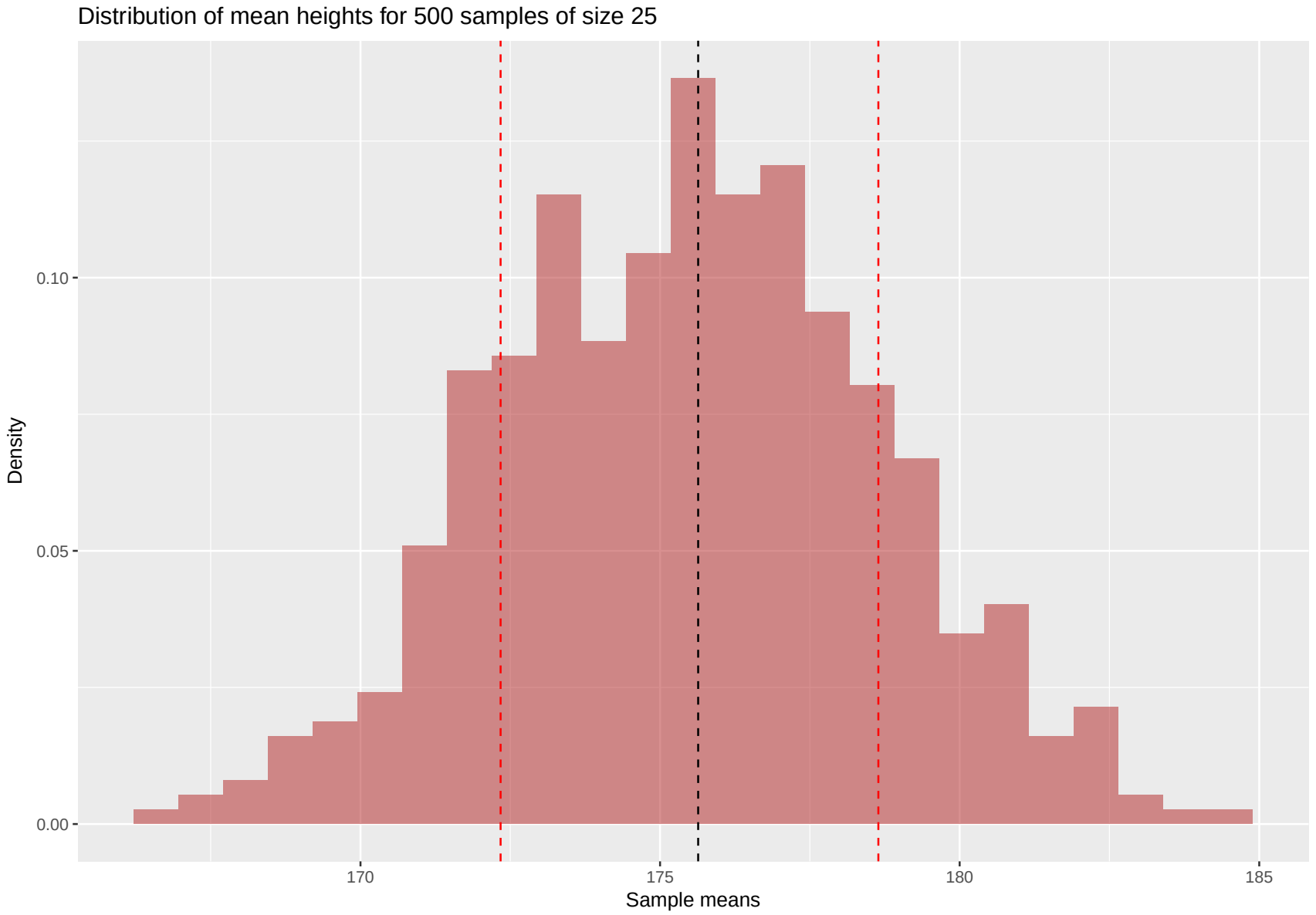
A second random sample of size 25



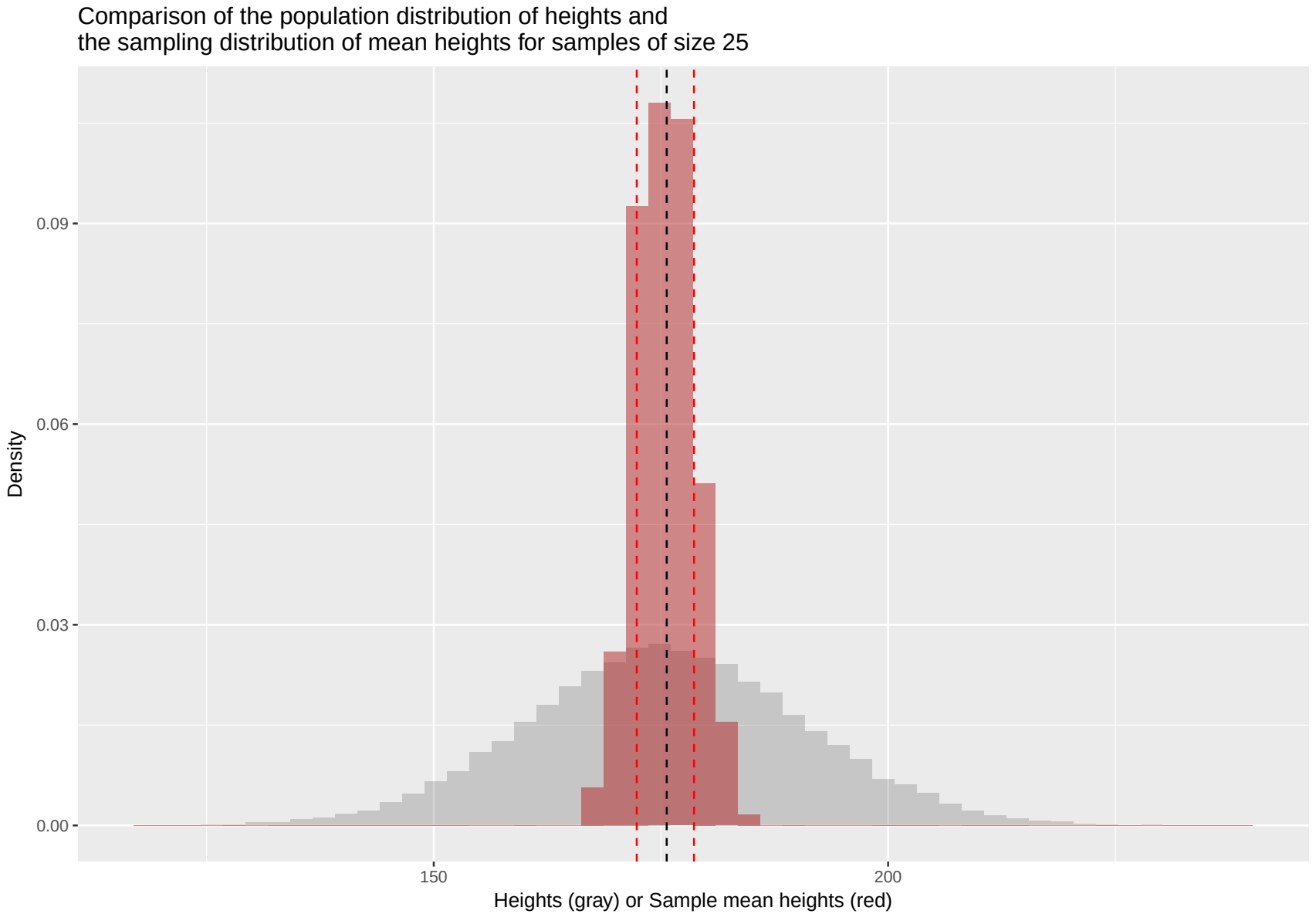
A third random sample of size 25



Sampling distribution of the mean: Distribution of sample means across many random samples



Comparing the population distribution to the sampling distribution of the mean



Sampling Distributions and Standard Errors

Sampling Distributions

The **sampling distribution of a statistic of interest** is the probability distribution of a given statistic for samples of a given size.

Standard Errors

The **standard error of a statistic of interest** is the standard deviation of the sampling distribution for the given statistic

Uncertainty

Together, the sampling distribution and associated standard error for a given statistic are key measures of the uncertainty in statistical estimates