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Calculating the Standard Deviation for a Population from Subpopulation Summaries.

A simple accurate method for calculating the standard deviation or sample standard deviation of a large population from the counts (or sample counts), means (or averages), and standard deviations (or sample standard deviations) of subpopulations within the overall population is derived. At present, a review of the literature indicates that while the overall count can be determined by summing the counts of the subpopulations and the mean may be determined accurately from a sum of the subpopulation's weighted means. The only accurate method, however, for finding the overall standard deviation requires a return to the raw data. The derivation is extended from full sampling, to partial sampling. The method's use is demonstrated in a spreadsheet simulation. (Received June 11, 2008)