Introduction to Probability Distributions

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In the same RCT with n=150, if 69 end up in the treatment group and 81 in the control group, how far off is that from expected?

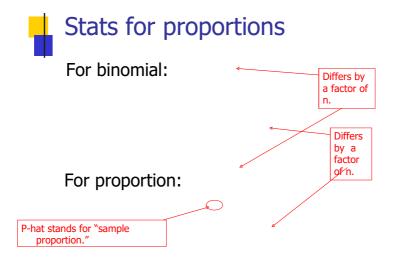
- a. Less than 1 standard deviation
- b. 1 standard deviation
- c. Between 1 and 2 standard deviations
- d. More than 2 standard deviations

81 and 69 are both 6 away from the expected. Variance = 150(.25) = 37.5 Std Dev \cong 6 Therefore, about 1 SD away from expected.



Proportions...

- The binomial distribution forms the basis of statistics for proportions.
- A proportion is just a binomial count divided by n.
 - For example, if we sample 200 cases and find 60 smokers, X=60 but the observed proportion=.30.
- Statistics for proportions are similar to binomial counts, but differ by a factor of n.





 Statistics for proportions are based on a normal distribution, because the binomial can be approximated as normal if np>5