

Ch 19 Testing Hypotheses about Proportions

1) A 1996 report from the U.S. Consumer Product Safety Commission claimed that at least 90% of all American homes have at least one smoke detector. A city's fire department has been running a public safety campaign about smoke detectors consisting of posters, billboards, and ads on radio and TV and in the newspaper. The city wonders if this concerted effort has raised the local level above the 90% national rate. Building inspectors visit 400 randomly selected homes and find that 376 have smoke detectors. Is this strong evidence that the local rate is higher than the national rate?

<p>1) Hypotheses</p> <ul style="list-style-type: none"> • State the null hypothesis • State the alternative hypothesis 	
<p>2) Model</p> <ul style="list-style-type: none"> • Check the assumptions & conditions • Specify model to use to test H_0 and the parameter of interest 	
<p>3) Mechanics</p> <ul style="list-style-type: none"> • Calculation of data • Complete any tests, usually hypothesis test and confidence interval • May need to find SD, z, etc. 	
<p>4) Conclusion</p> <ul style="list-style-type: none"> • Analyze tests to make a formal statement about the null hypothesis • Formal statement, evidence, and context needed 	

2) There are supposed to be 20% orange M&M's. Suppose a bag of 122 has only 21 orange ones. Does this contradict the company's 20% claim?

1) Hypotheses

- State the null hypothesis
- State the alternative hypothesis

2) Model

- Check the assumptions & conditions
- Specify model to use to test H_0 and the parameter of interest

3) Mechanics

- Calculation of data
- Complete any tests, usually hypothesis test and confidence interval
- May need to find SD, z, etc.

4) Conclusion

- Analyze tests to make a formal statement about the null hypothesis
- Formal statement, evidence, and context needed