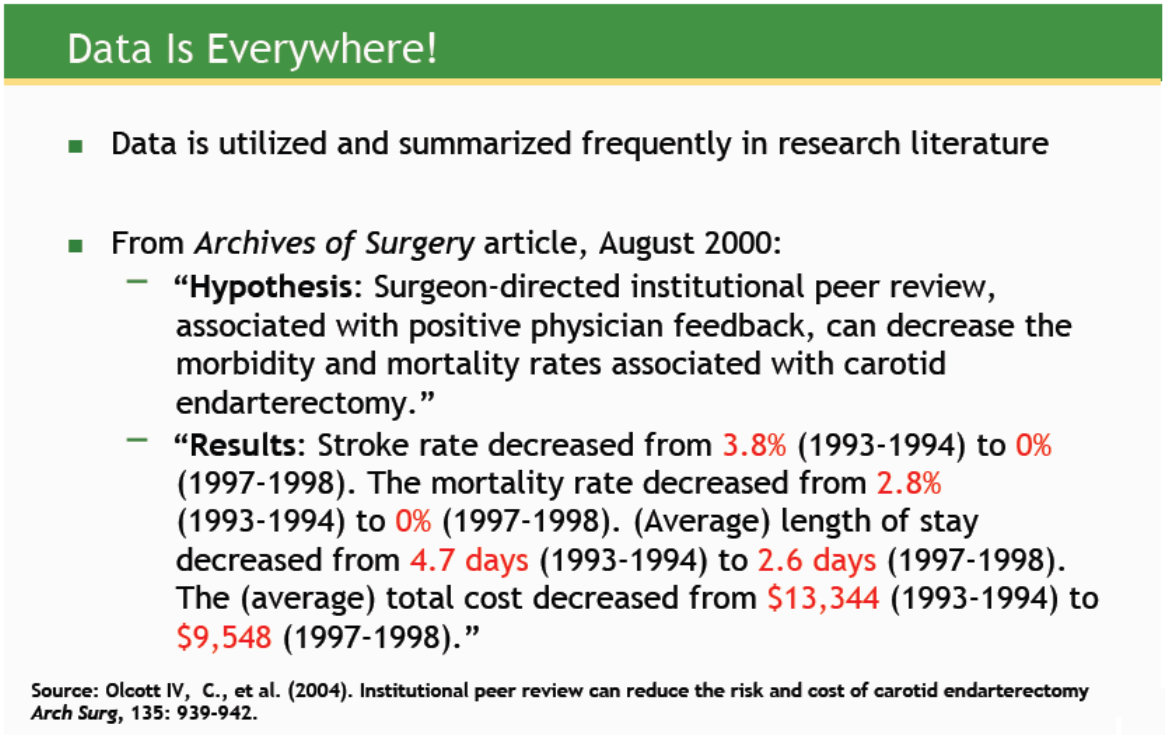
Transcript: Statistics Examples

[Acknowledgement]

What role does biostatistics play in public health? Why do we need this stuff?

We will formalize the details throughout the semester. These examples are just to get you thinking!



Data is everywhere, good data, bad data. It is everywhere. Data is utilized and summarized frequently in the research literature. For example here we have an Archives of Surgery article from August of 2000.

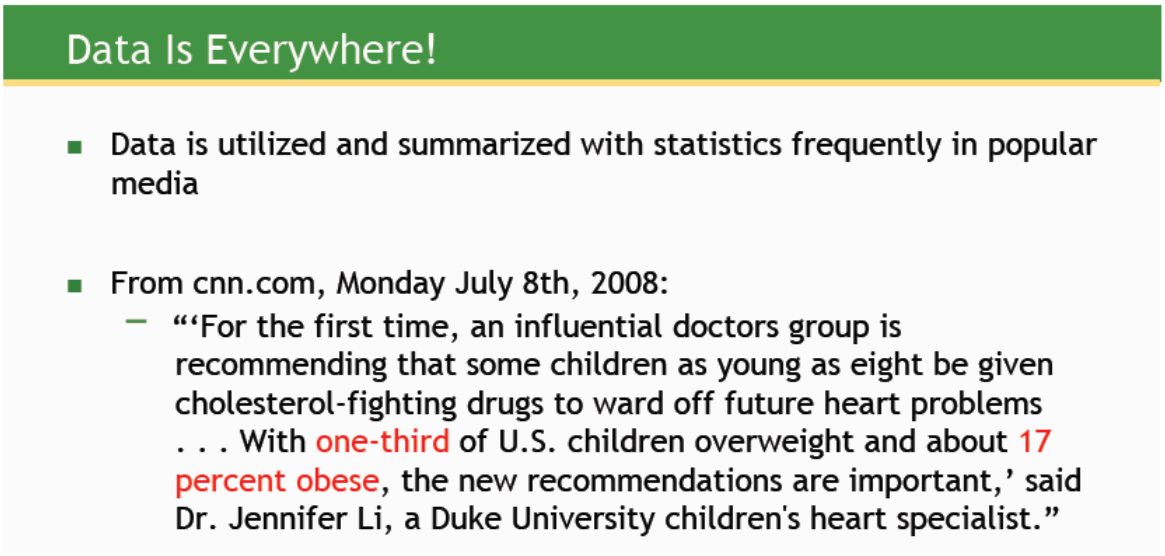
The hypothesis of the study was: Surgeon directed institutional peer review, associated with positive physician feedback, can decrease the morbidity and mortality rates associated with carotid endarterectomy.

They looked at outcome measures first over a time period which utilized none of this structure (positive physician feedback and peer review). And again after phasing this process in over time.

They said the stroke rate decreased from 3.8 percent to zero percent after phasing in this process. Similarly the mortality rate decreased from 2.8 percent to zero percent.

Average length of stay of patient's getting the procedure decreased from 4.7 days to 2.6 days. And the average total cost decreased from just over 13,000 dollars to about 9500 dollars.

They quoted a lot of numbers here that were created out of data they collected for the purposes of their study. And in doing so, they've answered some questions about the potential efficacy of this program they investigated and the potential benefits to the patient's and to the hospital in terms of cost.



Data doesn't just appear in research journals that most of the public doesn't read anyway. Frequently it is utilized and summarized in popular media as well.

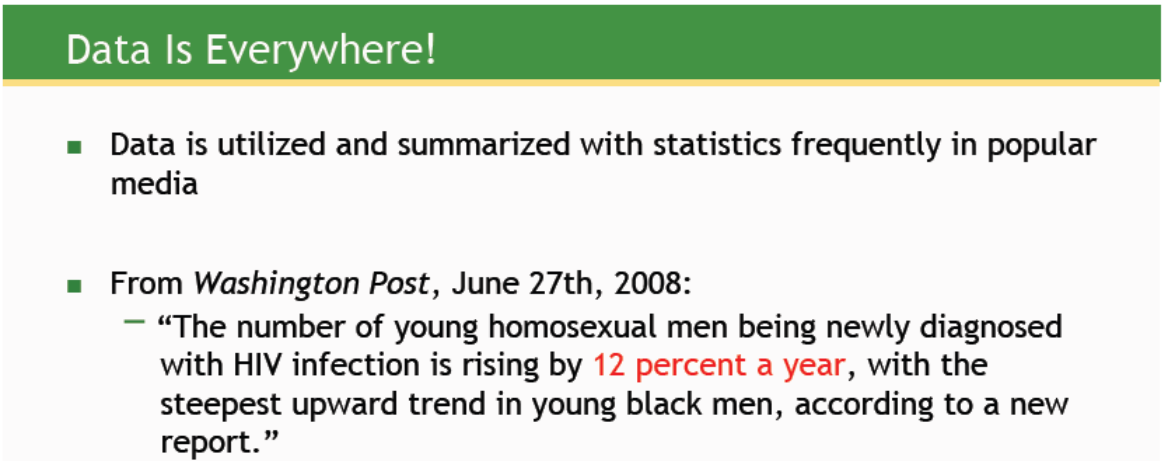
So here's an entry from Monday July 8th 2008 from C_N_N_ dot com.

For the first time an influential doctors' group is recommending that some children as young as 8 be given cholesterol fighting drugs to ward off future heart problems

With one third (there's a statistic based on data).

With one-third of U_S_ children overweight and about seventeen percent obese (another statistic based on data).

The new recommendations are important.



Here's another entry from the Washington Post in June of 2008.

The number of young homosexual men being newly diagnosed with H_I_V_ infection is rising by twelve percent a year with the steepest upward trend in young black men.

Data Provides Information

- Good data can be analyzed and summarized to provide useful information
- Bad data can be analyzed and summarized to provide incorrect/ harmful/non-informative information

You may not think of yourself as a data person or perhaps you wholeheartedly embrace the idea of statistics and data but if you're going to be working in public health (or the health sciences) you're going to be using some facet of biostatistics at different points in your career.

Data is evidence. It provides evidence. And good data can be analyzed and summarized to provide useful information but bad data can also be analyzed and summarized to provide incorrect, harmful, or non-informative information.

We want to always think about whether something we're looking at is based on good data to start with because there's nothing that biostatistics can do to save a study from bad data!