

**OVERVIEW OF
STATISTICAL
SAMPLING
IN HEALTH CARE
FRAUD
INVESTIGATIONS**

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WHY USE STATISTICAL SAMPLING?

“You can, for example, never foretell what any one man will be up to, but you can say with precision what an average number will be up to. Individuals vary, but percentages remain constant. So says the statistician.”

Sir Arthur Conan Doyle

WHAT DO STATISTICS DO?

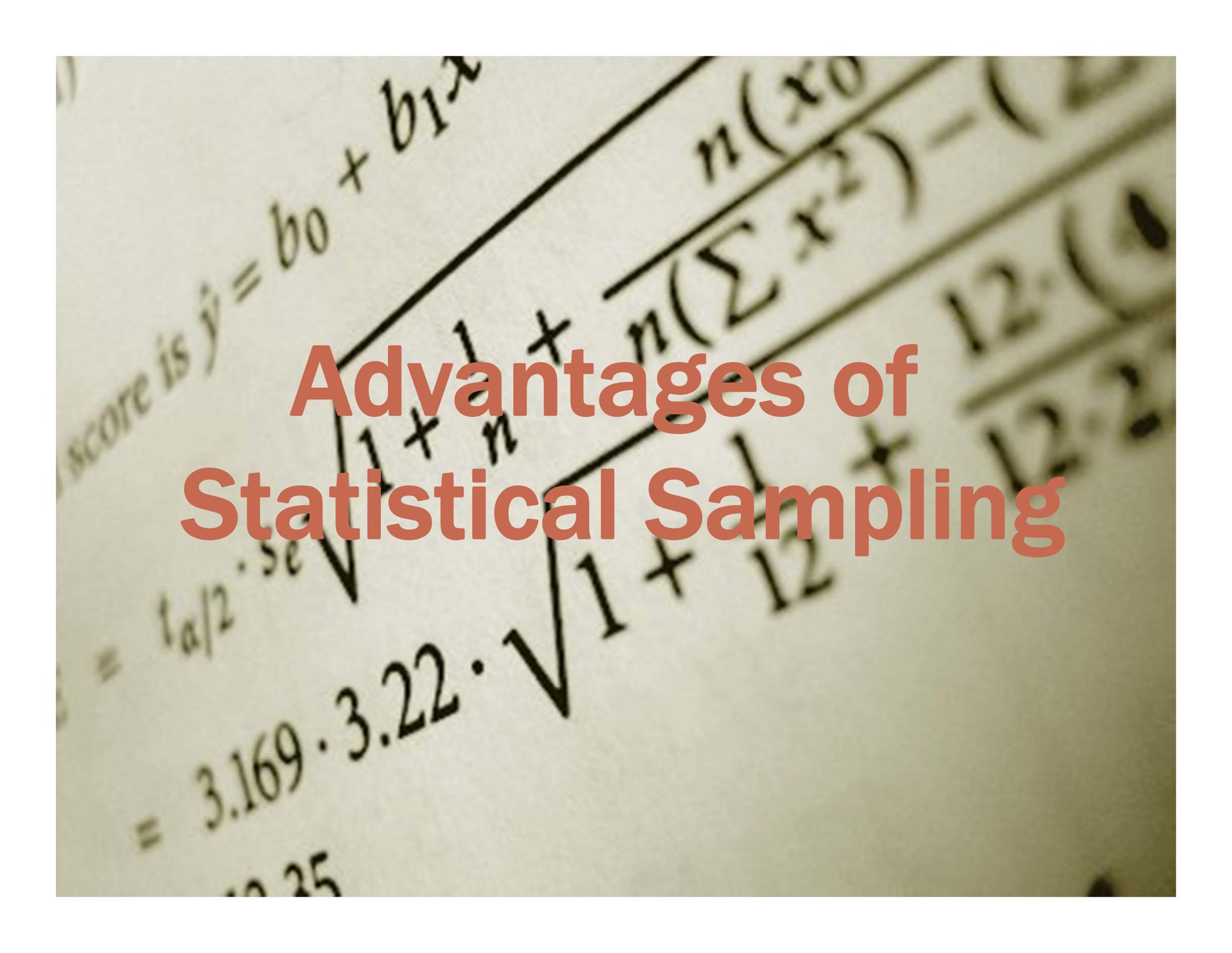
Statistics extrapolate into a large group some characteristic from a review of a subset of that group.

HOW ARE STATISTICS COMMONLY USED?

- **Polling Data**
- **Business Marketing Strategies**
- **Demographic Information**
- **Scientific Studies**
- **Clinical Trials**

HOW CAN STATISTICS BE USED IN HEALTH CARE FRAUD CASES?

- Many health care fraud cases are well-suited for sampling because they involve multiple similar claims and actions which are regularly repeated.
- Benefits may be in civil and/or criminal cases.
- Generally involve taking a percentage of the total claims, reviewing those claims, and then extrapolating the results back to the larger universe.



The background image shows a document with several mathematical formulas. At the top left, a regression equation is visible: $\hat{y} = b_0 + b_1x$. Below it, a standard error formula is partially shown: $= t_{\alpha/2} \cdot se \sqrt{1 + \frac{1}{n} + \frac{n(x_0 - \bar{x})^2}{n(\sum x^2) - (\sum x)^2}}$. At the bottom, a numerical calculation is shown: $= 3.169 \cdot 3.22 \cdot \sqrt{1 + \frac{1}{12} + \frac{12 \cdot (x_0 - \bar{x})^2}{\sum (x_i - \bar{x})^2}}$. The text is in black ink on a light-colored paper.

Advantages of Statistical Sampling

INITIAL EVALUATION OF ALLEGATIONS

- **Can assist the development of the investigative strategy.**
- **Can be used to make an initial review of allegations.**

INITIAL EVALUATION OF ALLEGATIONS (CONT.)

- If initial review indicates fraud, the results of the review can help narrow the focus of the investigation.
 - Particular types of service/claims
 - Particular locations
 - Identify targets/subjects
 - Provide probable cause for search warrants
 - Narrow the focus of a subpoena
- If initial review does not indicate fraud, investigative resources can be shifted to other cases.

CONSERVES RESOURCES

- **Not practical to review each and every allegedly fraudulent claim**
- **Fewer claims = faster**
- **Fewer claims = less expensive**
- **Limited funding available**

PROVIDES SPECIFIC EXAMPLES

- **Claims can be used in follow-up interviews**
 - **Patients**
 - **Employees**
- **Discussions with the target/subject**

WHEN TO CONSIDER NOT USING A STATISTICAL SAMPLE

- Investigating single incidents of claims that are relatively small in number.
- Claims that are not similar enough (in type, time, nature, etc.) to be grouped.

TYPES OF SAMPLES

- **Non-Random Sample**
 - Usually not preferred, but may be used to verify initial information (if source of allegations can provide specific patients)
- **Random Sample**
 - Statistician or computer program selects the specific files to be examined
- **Probe Sample**

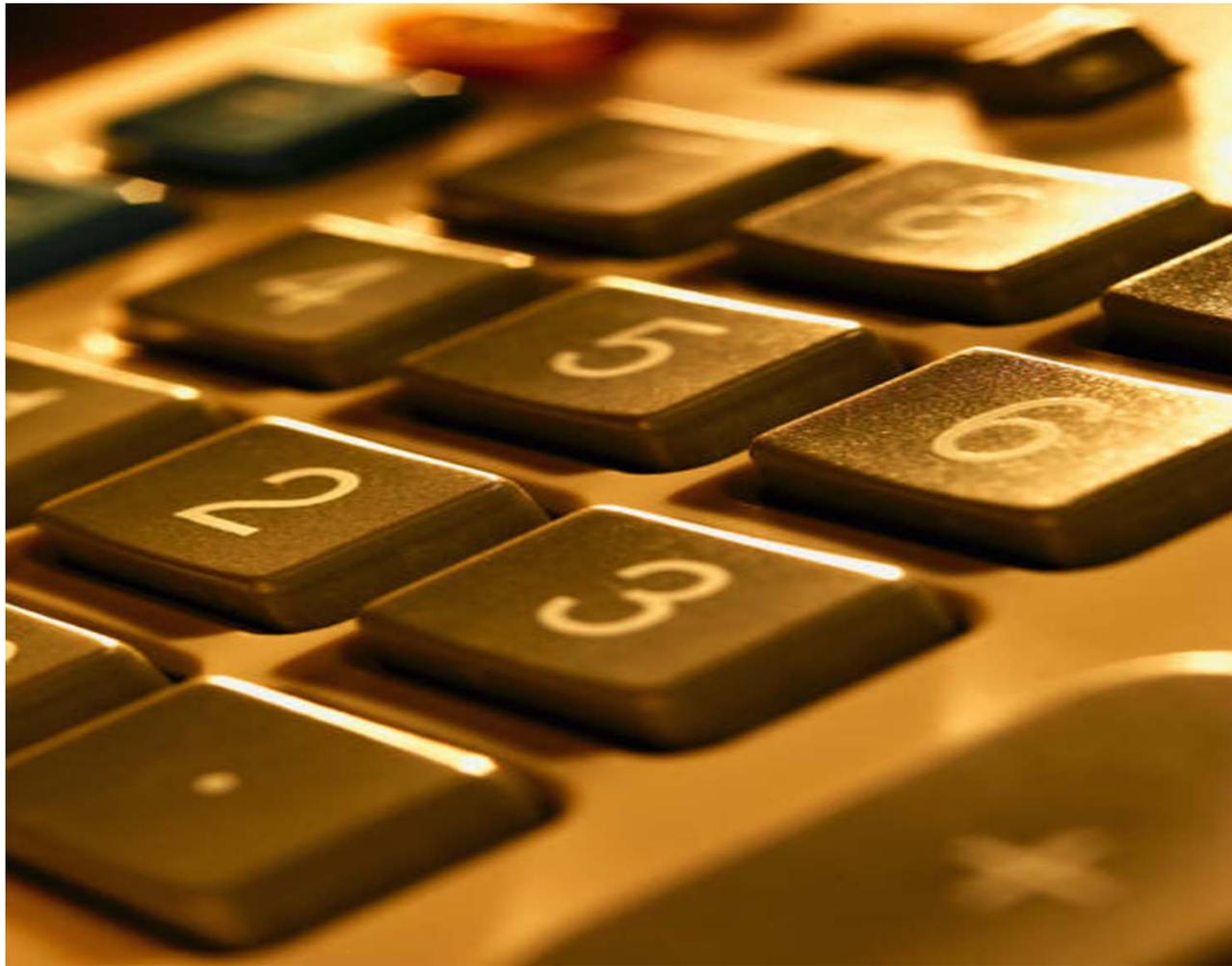
TYPES OF SAMPLES (CONT.)

■ Stratified Sample

- A variation of the random sample.
- For certain types of claims, the samples may need to be grouped with other similar claims to avoid improperly over-representing or under-representing certain claims.

TYPES OF SAMPLES (CONT.)

- **Factors that may be used to stratify data**
 - **Location**
 - **Type of billing**
 - **Type of service**
 - **Period of time**
 - **Changes in corporate policies**
 - **Changes in billing regulations/policies**
 - **Reimbursement amount**



THE
FIRST
STEP

Get a good statistician!

HOW IMPORTANT IS THE STATISTICIAN?

- The statistician is the foundation.
- Given the unique qualities of the information, it helps to have someone familiar with health care cases.
- Statistician must be able to
 1. simply explain statistical sampling concepts and
 2. defend the sampling plan used.
- How the sample was derived will always be a subject of disagreement.
 - If the defense can invalidate how you chose your sample, the results cannot be extrapolated.

WORKING WITH THE STATISTICIAN

- Need to be on the same page regarding what you want.
- Don't just rely on the statistician, you must understand the big picture.
 - What is the universe?
 - Why was that universe selected?

WORKING WITH THE STATISTICIAN (CONT.)

- **Key question: When you get the results back, how will the statistician extrapolate those results?**
- **This will also guide how your medical review is conducted.**
- **Consider meeting with the subject's counsel.**

DISCUSSING THE SAMPLING PLAN/METHODOLOGY WITH OPPOSING COUNSEL

- **Getting the Defendant/Subject/Target to agree with the sampling methodology has several benefits.**
 - **Makes it more difficult for them to challenge later**
 - **May help you discover early flaws in the methodology or selection**
 - **Alerts you to potential issues**

DISCUSSING THE SAMPLING PLAN/METHODOLOGY WITH OPPOSING COUNSEL (CONT.)

- Depending on the nature of the investigation, this may not be possible.
 - More likely in civil cases
- If problems arise, you can always have the two statisticians talk to see if they can agree.

WATCH OUT!

- **Make sure your sample is going to give you what you want.**
- **A mistake in creating or selecting the sample may invalidate all your work.**

ARGUMENTS AGAINST THE USE OF STATISTICS

- Each patient/treatment/doctor/provider is different
- Standards may have changed over time
- In larger (multi-state) investigations, there might be differences in regulations (Medicaid regulations, local coverage determinations, etc.)

“I’VE GOT MY SAMPLE – NOW WHAT?”

- **Get Documents**
- **Send Documents** → **Expert**
- **Expert must know what he needs to do**
 - **Looking at the billing code**
 - **Looking at medical necessity**
 - **What format should the final report be in?**

EXTRAPOLATION

- Once the sample has been reviewed, the final step is to project what your sample reveals about your universe.
- Must understand and be able to explain what your sample does and does not say.

CASES