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## Statistical Sampling for SPP/APR Indicators

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# Overview

When to sample

Sampling, precision and sample size

Sample design 101

Basic SPP requirements

More specific details

Common approaches, questions etc.

Other issues, implications

# When to Sample

## Census vs. sample

### Samples typically used to:

- Control cost
- Improve response rates / data quality
- Address other practical constraints

# Sampling, Precision and Sample Size

Sampling implies imprecision

Imprecision is measured in standard errors

Standard errors determined by sample size

(n)

=> Solve for n such that precision objectives are met

# Sample Design 101

The key elements of any sample design are (one or more of):

- Stratification
- Clustering
- Multiple stages of selection
- Probabilities of selection (equal, unequal)

# Basic Sampling Plan Requirements

All large LEAs ( $n \geq 50,000$ ) included in sample each year

Each LEA included at least once over six years

Can't postpone sampling until year 2

Must be able to report at state and LEA levels

Baseline must be based on a probability sample

# More Specific Details

Statement of target population, size

Indicator chosen (B7, 8, 14; C3, 4)

Census or sample

Description of sample design

- Stratification
- Stages / clustering
- Oversampling / allocation
- Treatment of extremely large / small units
- Implementation details

## More Specific Details (cont.)

Using the National Post School Outcomes Center (NPSO) sampling calculator

- <http://psocenter.org/analysis.html>

Justification of sample sizes (analytic objectives – precision, power etc.)

Expected response rates

Mode and implications

Proposed schedule

# Common Approaches, Questions etc.

Use of monitoring cycles  
Sampling after the fact  
“Representativeness”

# Other Issues, Implications

Sampling implies weighting, variance estimation

Response (return) rates, bias, and nonresponse bias analyses

Censuses with low response rates