

# Lessons from Nonresponse Bias Studies Involving Federal Surveys

Elise Christopher, NCES; Morgan Earp, BLS; Tala Fakhouri,  
NCHS; Steven Frenk, NCHS; Kathryn Downey Piscopo,  
SAMHSA; Peter Miller, Census Bureau

The views expressed are those of the authors and  
not necessarily those of the agencies with which  
they are affiliated.

# Summary Lessons

- We seek to synthesize information on nonresponse bias (NRB) in federally sponsored surveys conducted since 2006.
- There is no central repository for this information.
- Synthesis of nonresponse bias studies is hampered further by the lack of a standard reporting format.
- A standard, more comprehensive system is needed to collect NRB analysis information going forward.

# Genesis of the Work

- Concern expressed in the FCSM about answering the policy question: *Do declining response rates affect nonresponse bias in federal surveys?*
- Two teams formed to 1) collect and synthesize NRB studies, and 2) analyze and critique NRB indicators.
- This presentation concerns the work of the synthesis team.

# Project Overview

- We coded characteristics of nonresponse bias studies concerning federally sponsored surveys conducted since 2006, when OMB guidance was issued.
- We included ongoing federal agency surveys as well others sponsored by the government.
- We obtained studies from an initial 2010 OMB collection effort, from the published literature, and from a query sent to ASA and AAPOR members.
- To date, we have identified some 200 studies, of which we have coded about 130.

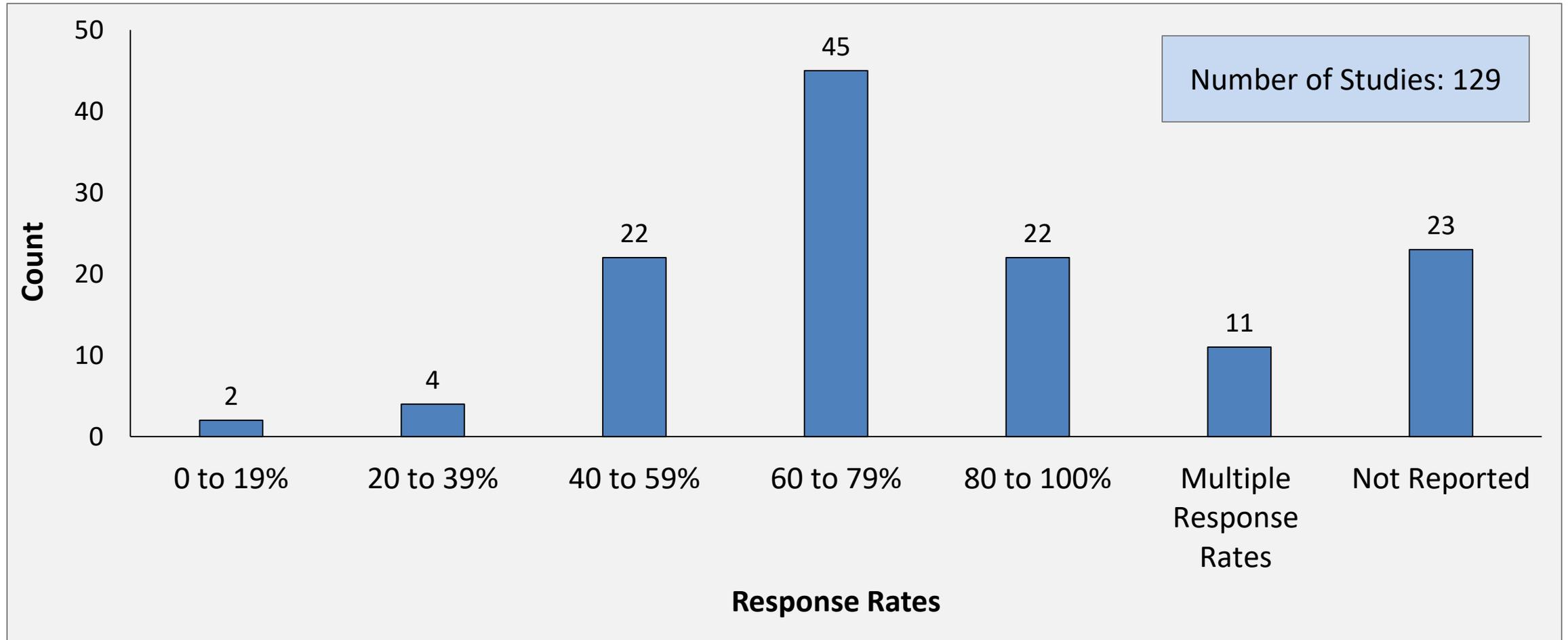
# Classification of Studies

- We coded these study characteristics:
  - Was nonresponse bias reported – before and after nonresponse weighting?
  - What was the target of nonresponse bias analysis – estimates vs. sample characteristics?
  - What methods were used to analyze possible nonresponse bias – benchmarking, comparison to external data, studying variation within the response set, altering weighting adjustments?
  - Survey type – household or establishment?
  - Survey mode(s) employed?
  - Unit response rate for the survey?
  - Agency sponsorship?
  - Year of survey and year of nonresponse bias analysis?

# Illustrative Analysis Outline

- Analyses to follow do not purport to produce population estimates. They show the kind of analyses that can be done. Results are high level and suggestive.
- Questions:
  - Do studies report any NRB? Do they report that post survey adjustments reduce it? Do these reports vary by type of survey (establishment vs. household)?
  - What is the target of NRB analysis - sample characteristics, survey estimates, both? Does the target vary by type of survey?
  - What methods are used to analyze NRB? How do these vary by type of survey?

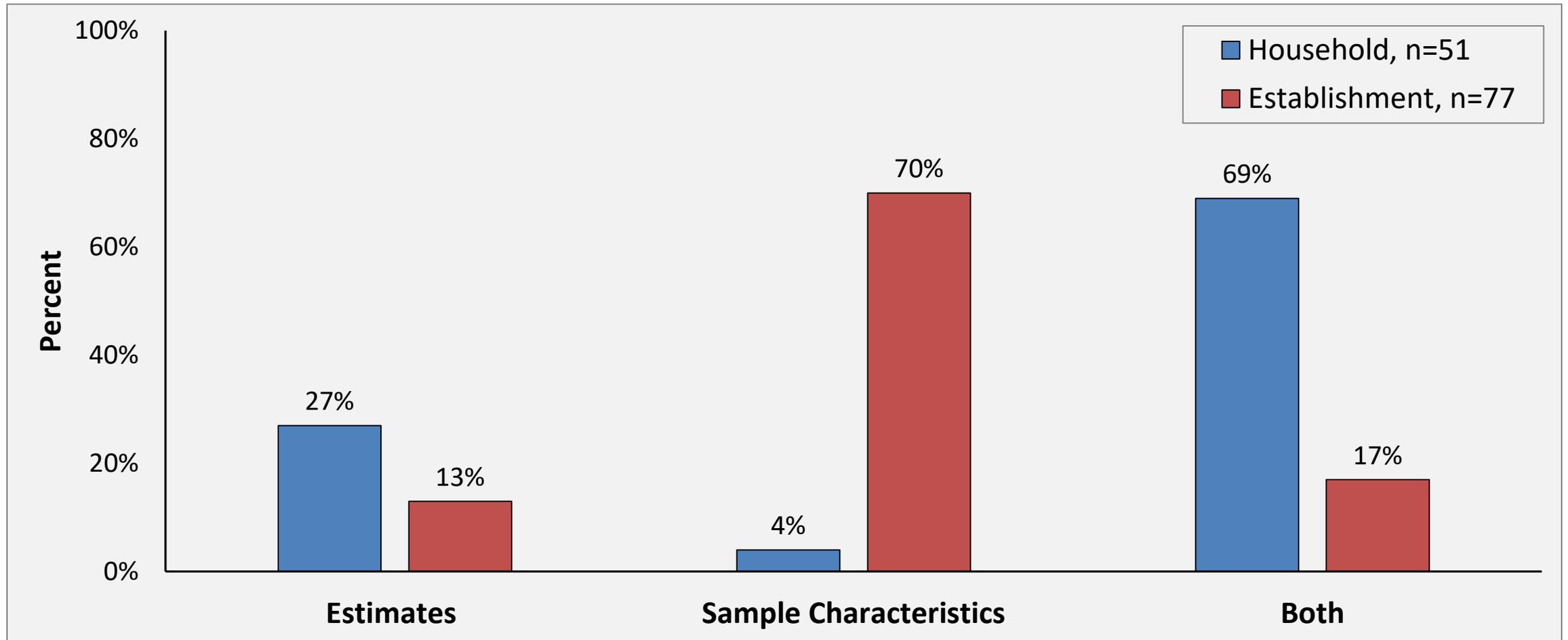
# Unit Response Rates Reported



# Nonresponse Bias Reported, Before and After Weight Adjustment

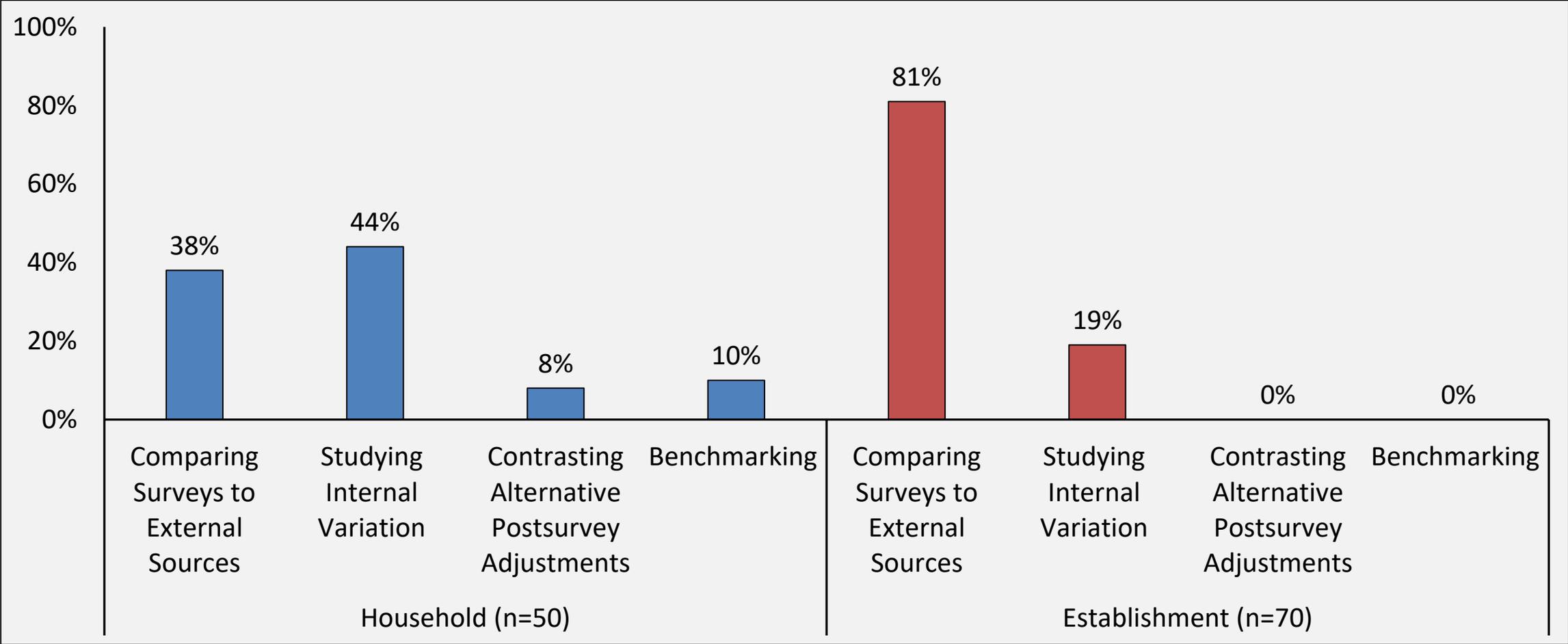
	Before Weighting			
After Weighting	Yes (n=91)	No (n=4)	Not Discussed (n=27)	Unclear (n=7)
Yes	84.6%	0.0%	77.8%	57.1%
No	1.1%	0.0%	3.7%	0.0%
Not Discussed	7.7%	75.0%	11.1%	0.0%
Unclear	6.6%	25.0%	7.4%	42.9%

# Target of Non-Response Bias Analyses *by Survey Type*



# Most Common NRB Analysis Methods Used

## *By Survey Type*



# Illustrative Analysis Summary

- We observe the following patterns in the study examples now available:
- Most studies reported some nonresponse bias before and after post survey adjustments; notable minority of studies were not clear on these points.
- Household and establishment surveys differed in attention to bias in sample characteristics vs. survey estimates.
- Establishment NRB studies were more likely to compare sample characteristics and estimates to external data. Household studies were more likely to examine variation in nonresponse within their samples.
- These observations come with a major caveat: the corpus of studies gathered is not a probability sample of studies completed since 2006.

# Possible System for NRB Data Collection

- A carefully managed system of NRB study data collection is required if we are serious about understanding the issue.
- At time of OMB clearance, survey directors could receive a standardized electronic NRB form to complete.
- Renewing surveys would complete the form immediately for the survey seeking renewal.
- New surveys would complete the form by a time specified in clearance document.
- Follow up with survey directors to ensure compliance.
- Data gathered are analyzed to produce yearly public reports.

# Conclusion

- Continued work on this project will try to assemble a more complete picture of nonresponse bias in federal surveys. We appreciate your help in gathering more studies to supplement ones now in hand.
- A prospective system of NRB study data collection is required going forward.
- The work of this team and the one analyzing nonresponse bias indicators (the next paper in the panel) will help to shape recommendations about how NRB studies should be conducted and reported.

Please send NRB study reports to:

**[Kathryn.Piscopo@samhsa.hhs.gov](mailto:Kathryn.Piscopo@samhsa.hhs.gov)**

# Thank You.

- Elise Christopher ([elise.christopher@ed.gov](mailto:elise.christopher@ed.gov))
- Morgan Earp ([earp.morgan@bls.gov](mailto:earp.morgan@bls.gov))
- Tala Fakhouri ([vid2@cdc.gov](mailto:vid2@cdc.gov))
- Steven Frenk ([sfrenk@cdc.gov](mailto:sfrenk@cdc.gov))
- Kathryn Downey Piscopo ([Kathryn.Piscopo@samhsa.hhs.gov](mailto:Kathryn.Piscopo@samhsa.hhs.gov))
- Peter Miller ([peter.miller@census.gov](mailto:peter.miller@census.gov))