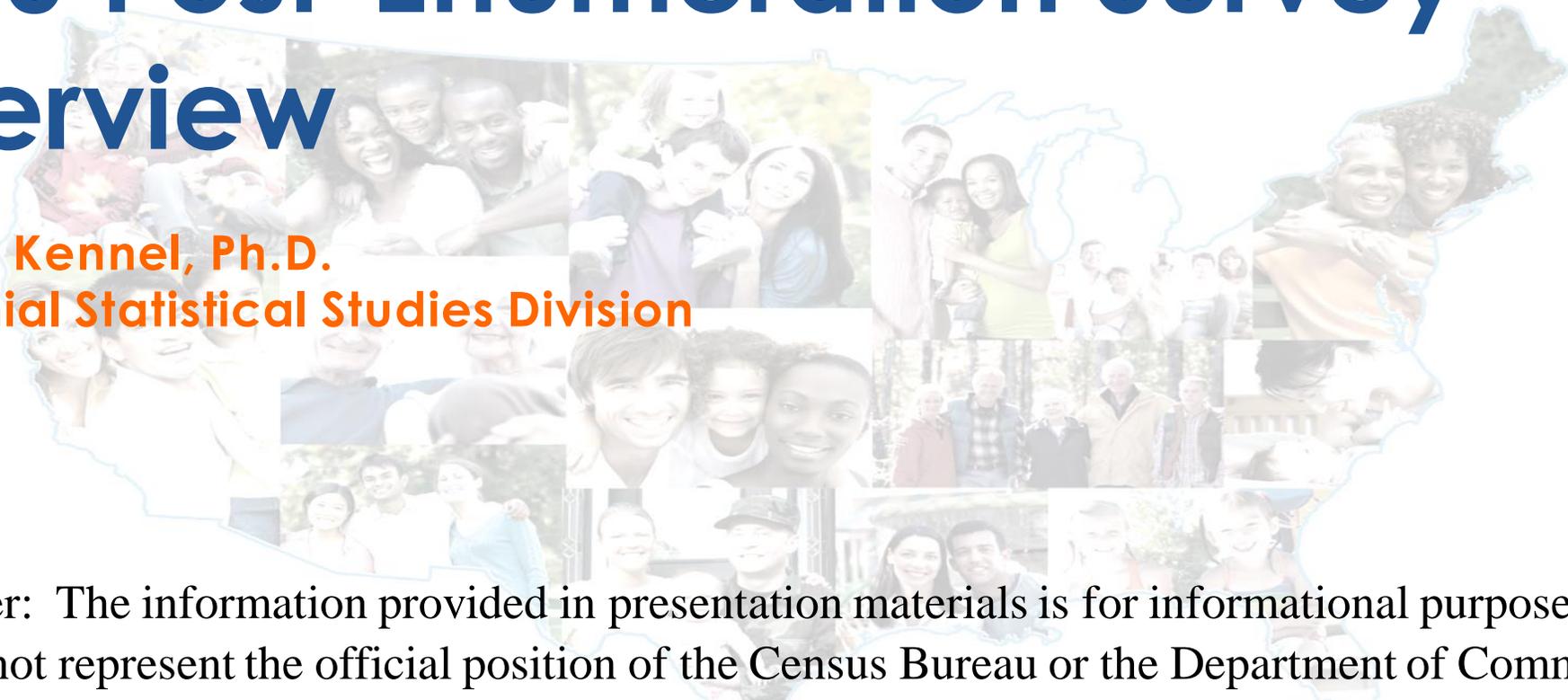


2020 Post-Enumeration Survey Overview



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Outline

1. Introduction to Census Quality
2. Net Coverage
3. Components of Coverage
4. Post-Enumeration Survey Design

Introduction to Census Quality

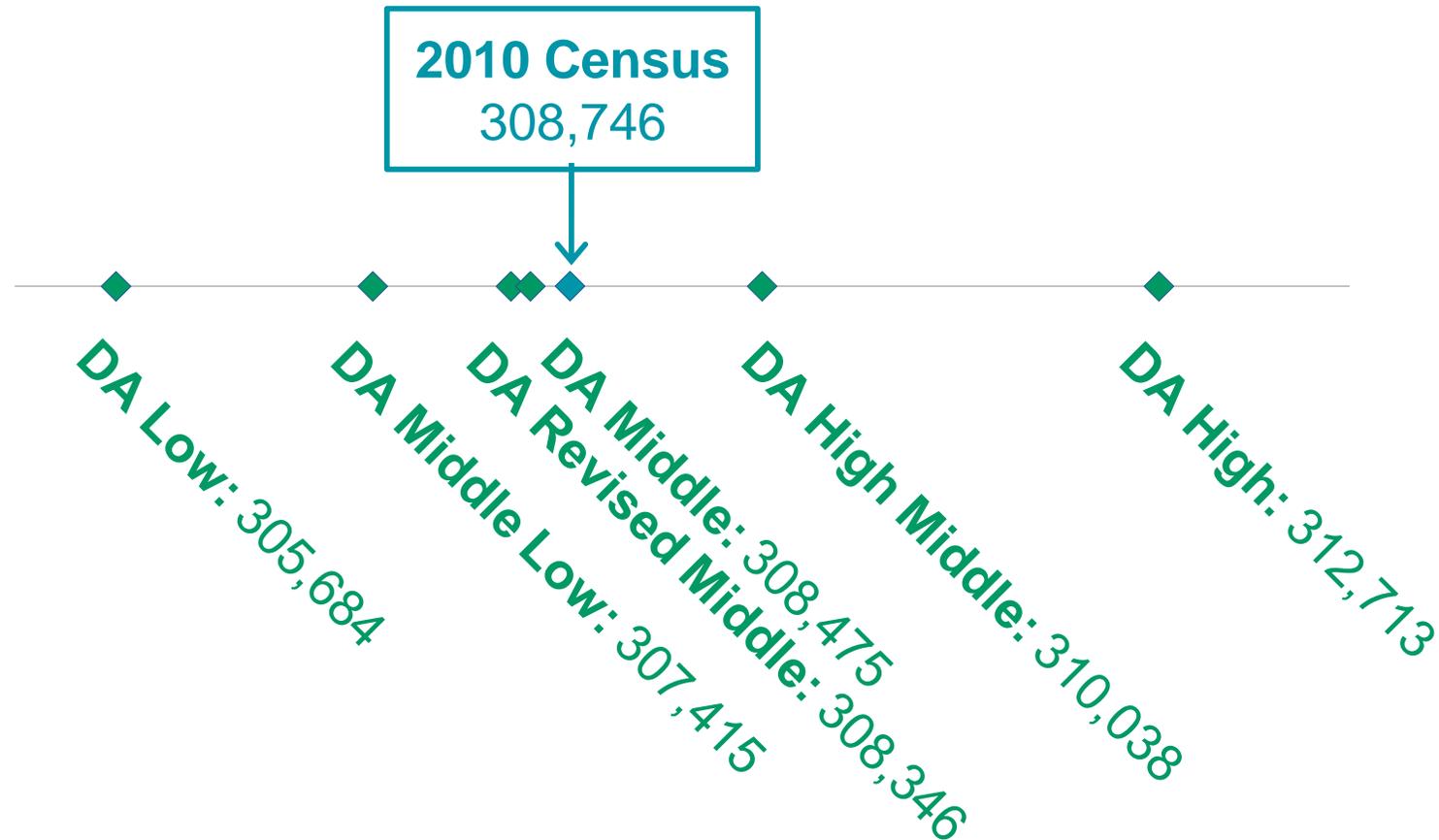
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Measuring Census Quality

- **Census process indicators**
- **Demographic Analysis (DA) and other methods**
- **Post-Enumeration Survey (PES)**

2010 Census and Demographic Analysis (in Thousands)



Net Coverage

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Net Coverage Error

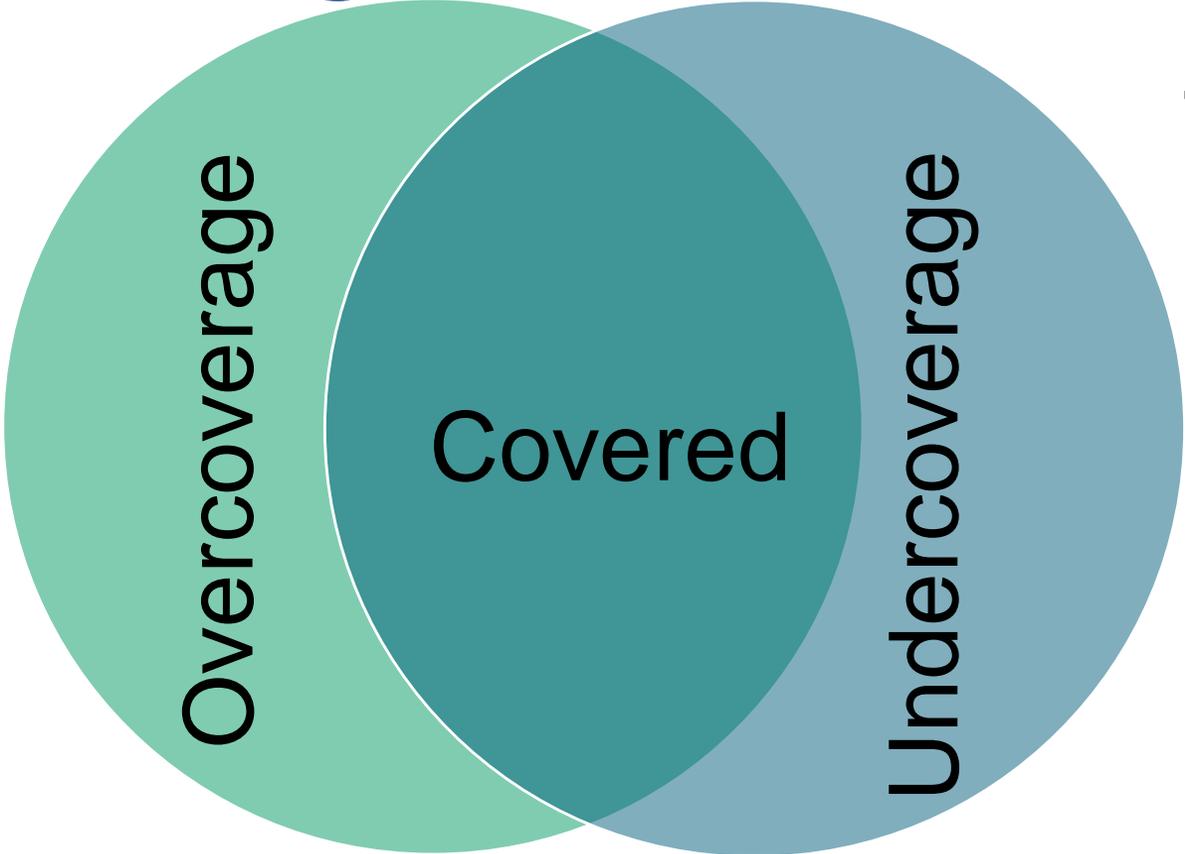
Net census coverage error (defined as)
= Census count – True population size

Negative coverage error means fewer people are included in the census than are in the true population (undercount)

Positive coverage error means more people are included in the census than are in the true population (overcount)

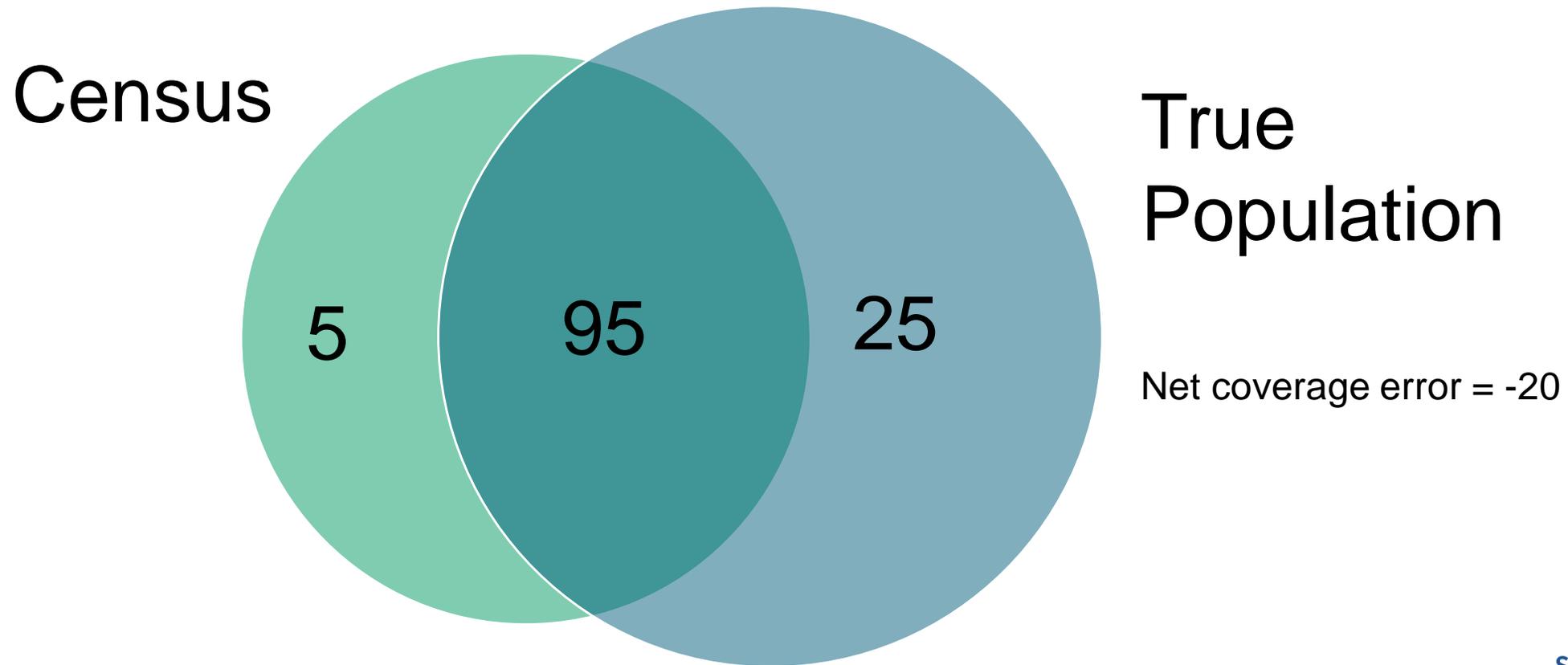
Net Coverage Error

Census



True
Population

Net Coverage Error Example



Percent Net Coverage Error

Percent net coverage error (defined as)

$$\frac{\text{Census count} - \text{True population size}}{\text{True population size}} \times 100$$

Net Undercount of US Household Population

Year	Census Count	Net Coverage Error	Percent Coverage Error
2010	300,703,000	36,000.	0.01 %.
2000	273,587,000	1,332,000*	0.49 %*
1990	248,710,000	– 3,994,000*	– 1.61 %*

* Statistically different from zero

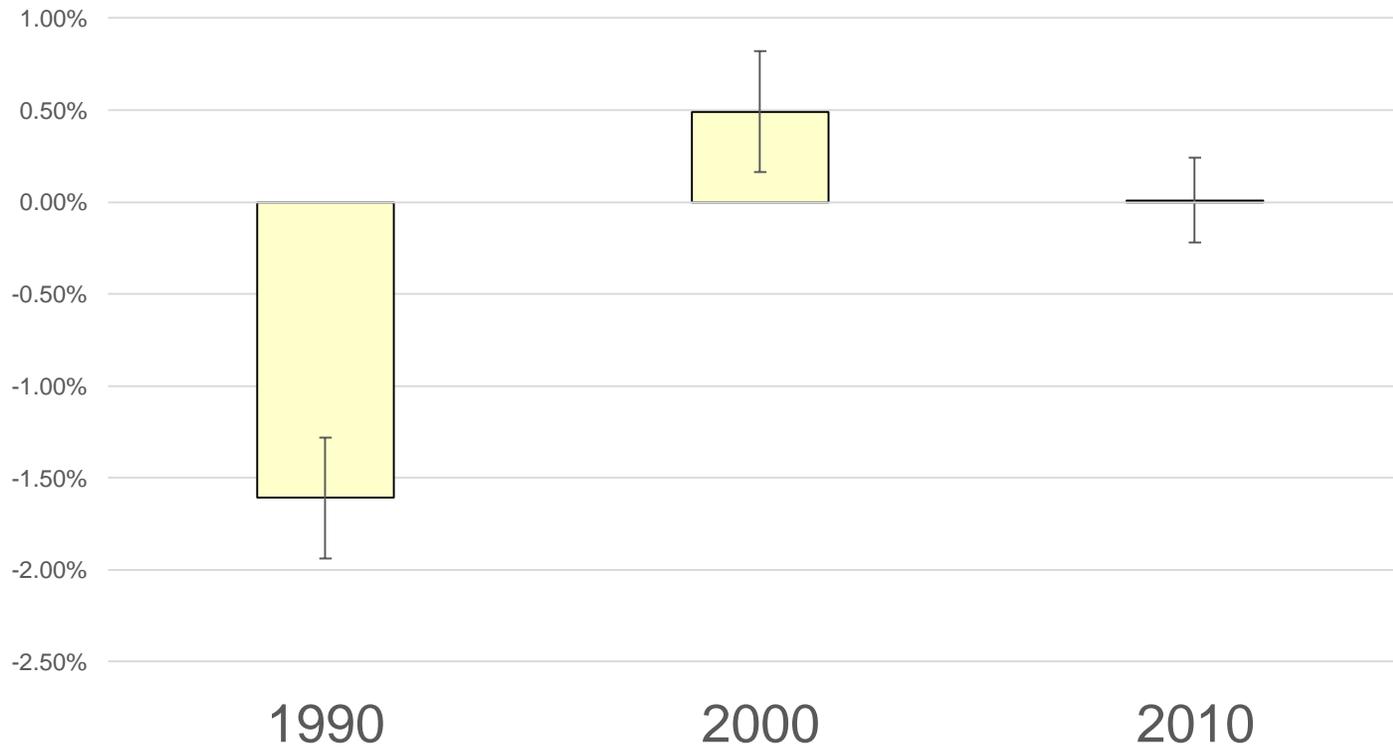
Census counts for 1990, 2000, and 2010 exclude Remote Alaska.

Census counts for 2000 and 2010 exclude Group Quarters population.

Census count for 1990 included people in housing units and in noninstitutional and nonmilitary Group Quarters.

U.S. Total Percent Net Coverage Error from 1990 - 2010

Percent Net Coverage Error



Error bars indicate 90% confidence interval.

Components of Coverage

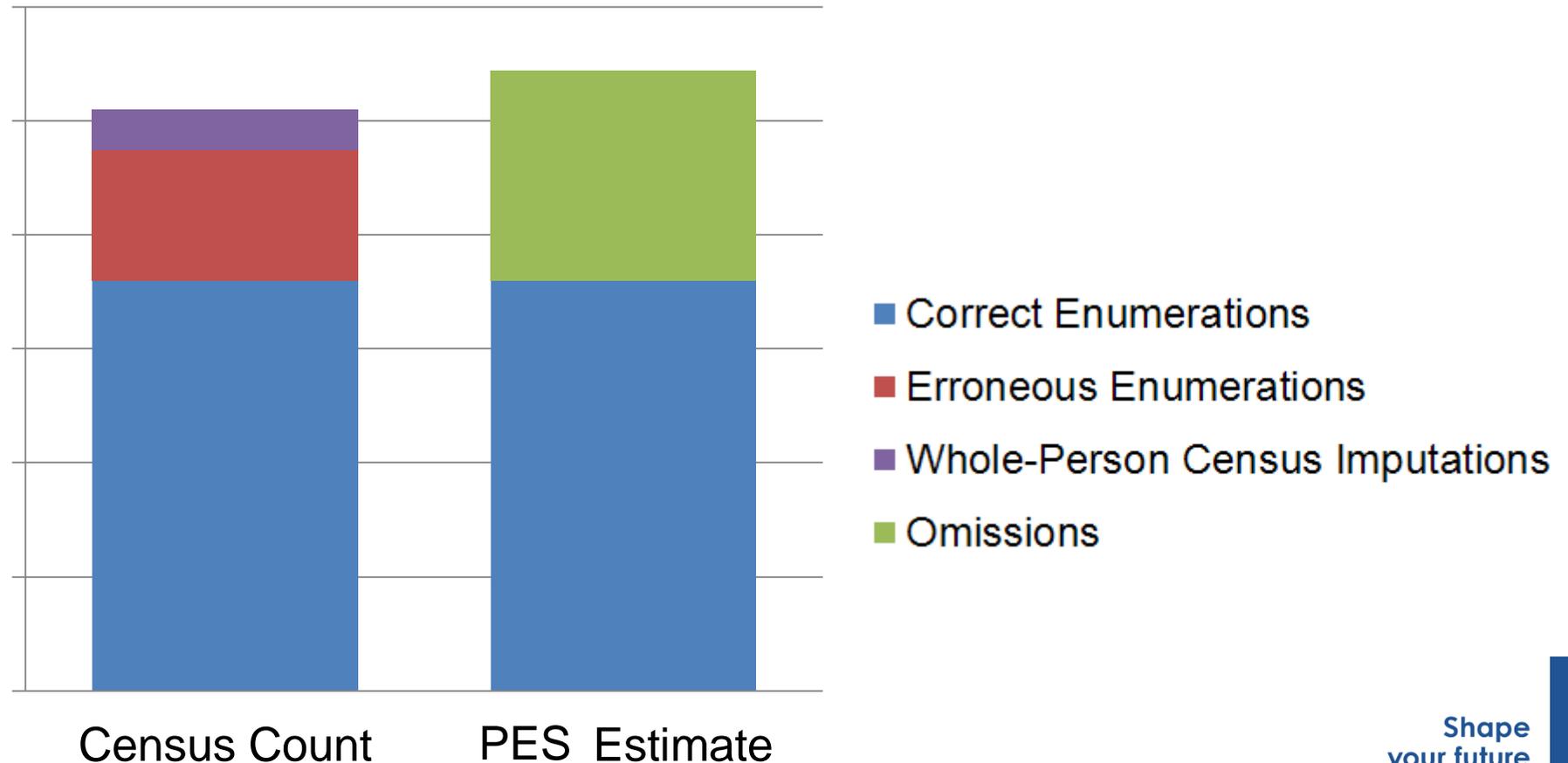
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Components of Coverage for People

Census Count	Estimated Totals from PES
<ol style="list-style-type: none">1. Correct enumerations2. Erroneous enumerations<ul style="list-style-type: none">• Due to duplication• Others (died before 04/01/20, visitor, et al.)3. Whole-person census imputations (no name, all characteristics imputed)	<ol style="list-style-type: none">1. Correct enumerations2. Omissions

Components of Coverage for People



Components of Census Coverage for the 2010 United States Household Population (in Thousands)

Component of Census Coverage	Estimate	Standard Error	Percent	Standard Error
Census Count	300,703	0	100.0	
Correct enumerations	284,668	199	94.7	0.07
Erroneous enumerations	10,042	199	3.3	0.07
Due to duplication	8,521	194	2.8	0.06
For other reasons	1,520	45	0.5	0.01
Whole-Person Census Imputations	5,993	0	2.0	0
Estimate of Population	300,667	429	100.0	
Correct enumerations	284,668	199	94.7	0.1
Omissions	15,999	440	5.3	0.1
Net Undercount	-36	429	-0.01	0.14

2020 Post-Enumeration Survey Design

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What is the Post-Enumeration Survey?

Goal

- Measure coverage of people and housing units in the decennial census
- Measure net coverage error and components of coverage

How are the data used?

- To assess the success of the current census
- To provide information to improve the coverage of future censuses

How is coverage estimated?

- Conduct a survey in sample blocks
- Match people in the PES independent survey with enumerations in the census to determine who was missed or counted in error

History

- Used in the United States census since 1950

History

1950: First Post-Enumeration Survey of Census

- Response to a report comparing demographic analysis estimates to the 1940 Census showing more young men signed up for the draft than were included in the 1950 Census
- Per unit cost of 1950 Post-Enumeration Survey was 20 times more than the per unit cost for the Census

1980: First attempt to use Dual-System Estimation

2000: Controversy over adjustment

2020 Post-Enumeration Survey Universe

Household Population and Housing Units

Excludes

- **Group Quarters and Group Quarter Population**
- **Remote Alaska**

Sample Sizes

First sample (Basic Collection Units)

- Selected 9,800 Basic Collection Units in 50 states and District of Columbia
- Selected 400 Basic Collection Units in Puerto Rico

PES listing

- 510,000 housing units in 50 states and District of Columbia
 - 18,000 housing units in Puerto Rico
- After subsampling (expected)
- 180,000 housing units in 50 states and District of Columbia
 - 8,000 housing units in Puerto Rico

Tentative Schedule to Release Reports and Tables

November 2021

- National demographic estimates of net coverage of people
- National demographic estimates of components of coverage for people
- Tables can be downloaded on Census Bureau website

February 2022

- State estimates for people
- More detailed national estimates for people
- All housing unit coverage estimates

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