

2020 Census

Post-Enumeration Survey

Understanding the Count: A Discussion on the Latest 2020 Post-Enumeration Survey Results

May 19, 2022

The data in this presentation have been cleared for release under DRB Numbers: CBDRB-FY22-218, CBDRB-FY22-216, and CBDRB-FY22-244.

Outline

1. Introduction to the Post-Enumeration Survey
2. Census Coverage Results by State
3. Census Coverage Results by Census Operations
4. Post-Enumeration Survey(PES) Quality Measures

2020 Post-Enumeration Survey

Introduction to the Post-Enumeration Survey

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What is the PES?

Goal

- To measure coverage of people and housing units in the decennial census
- To measure net coverage error and components of coverage
- No intent to adjust the census counts

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 10,000 sample blocks— independently of the census
- 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 with different designs and formats since 1950

Universe for Person Estimates

	2020 Demographic Analysis (Mid Series)	2020 Post-Enumeration Survey
Includes Household Population	Yes	Yes
Includes People in Living in Group Quarters (such as college dorms, nursing homes, prisons, ...)	Yes	No
Includes People living in Remote Alaska areas	Yes	No
Census Count	331,400,000	323,200,000
Estimated Population Size	332,600,000	323,900,000

Totals rounded to the nearest 100,000.

PES Challenges

- **Global pandemic**
- **Delays to field work**
 - **Matching people who might not accurately report their census residence status**
- **Migration of many college students and others**
- **Some respondents did not respond to questions needed to match the PES to the Census**
 - **Matching people to the census with increased item nonresponse**

2020 Post-Enumeration Survey

Census Coverage Results by State

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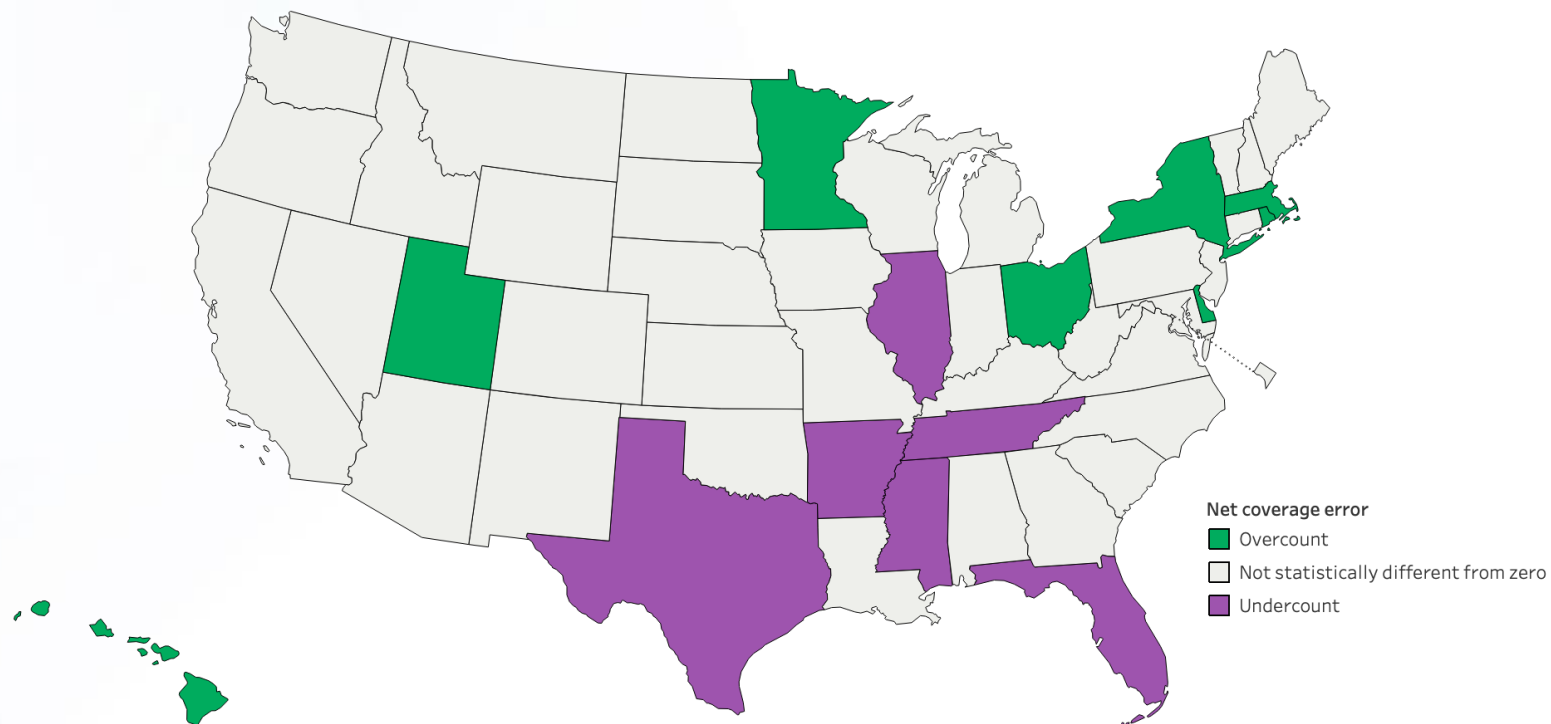
Key Findings for States

- 36 states and Washington, DC, did not have a statistically significant undercount or overcount.
- Eight states had a statistically significant overcount.
- Six states had a statistically significant undercount.
- Components of coverage can be found for every state [\[here\]](#).

*Note: While the Post-Enumeration Survey (PES) can measure estimated undercounts and overcounts in the census, it cannot answer **why** a particular state experienced one.*

2020 Post-Enumeration Survey ⁱ

Census count for Post-Enumeration Survey universe: 323,200,000
Net coverage error estimate (%): -0.24
90 percent confidence interval: (-0.65, 0.17)



Note: Post-Enumeration Survey (PES) estimates are subject to sampling and nonsampling errors. The PES universe does not include people living in group quarters. More information regarding data collection, definitions, sampling error, nonsampling error, and estimation methodology is available at the [Post-Enumeration Surveys](#) site.

States With an Undercount or Overcount

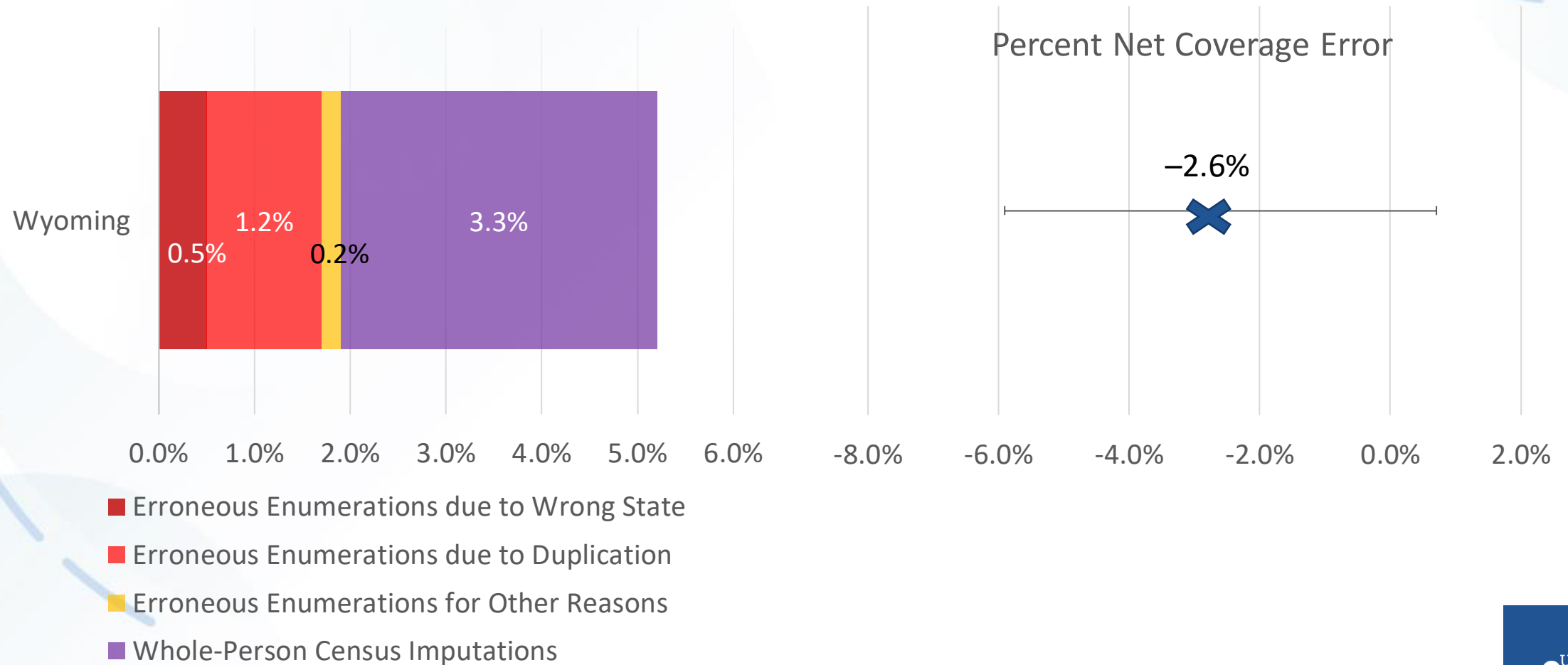
Undercount

State	Net coverage error rate	
	Rate	90 percent confidence interval
Arkansas	-5.04	-8.68 to -1.40
Florida	-3.48	-4.98 to -1.98
Illinois	-1.97	-3.43 to -0.51
Mississippi	-4.11	-6.79 to -1.43
Tennessee	-4.78	-7.26 to -2.30
Texas	-1.92	-3.27 to -0.57

Overcount

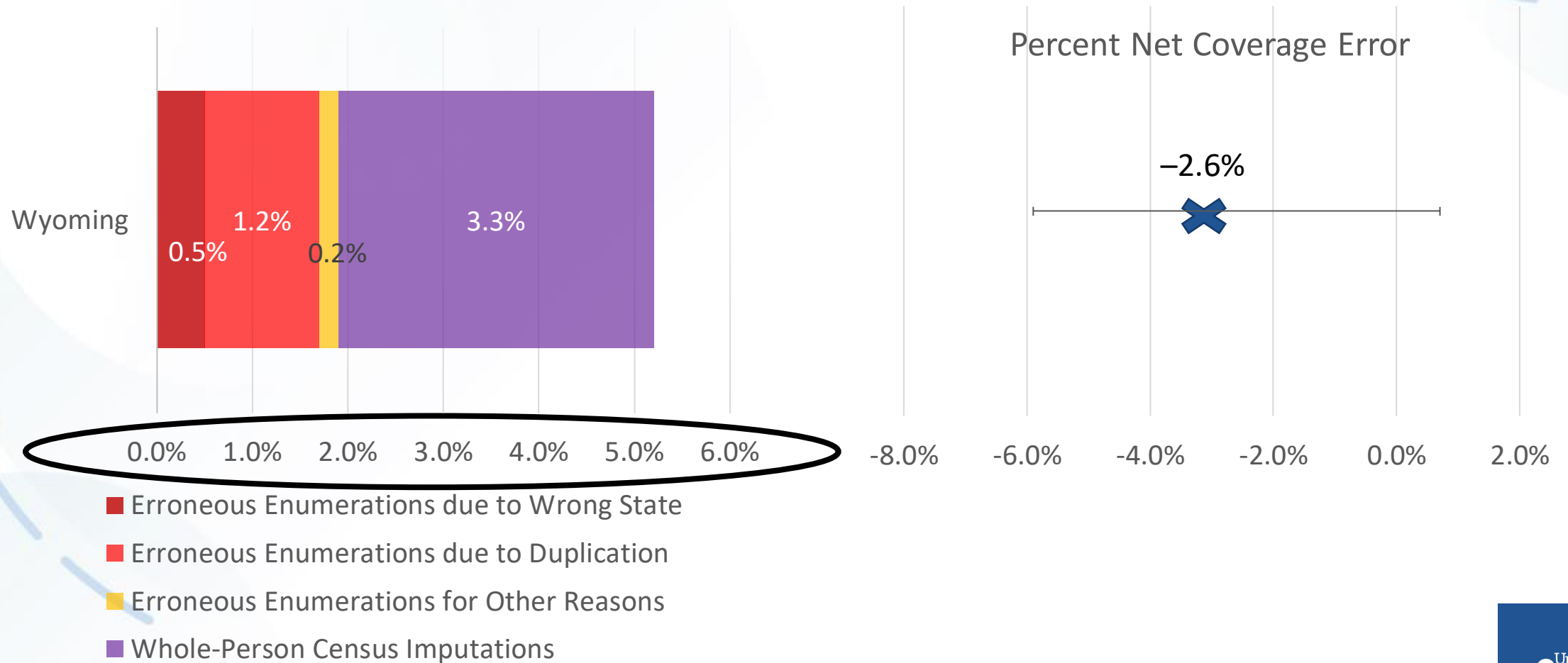
State	Net coverage error rate	
	Rate	90 percent confidence interval
Delaware	5.45	0.81 to 10.09
Hawaii	6.79	4.03 to 9.55
Massachusetts	2.24	0.50 to 3.98
Minnesota	3.84	2.24 to 5.44
New York	3.44	1.89 to 4.99
Ohio	1.49	0.39 to 2.59
Rhode Island	5.05	2.70 to 7.40
Utah	2.59	0.57 to 4.61

How to Read the State Results



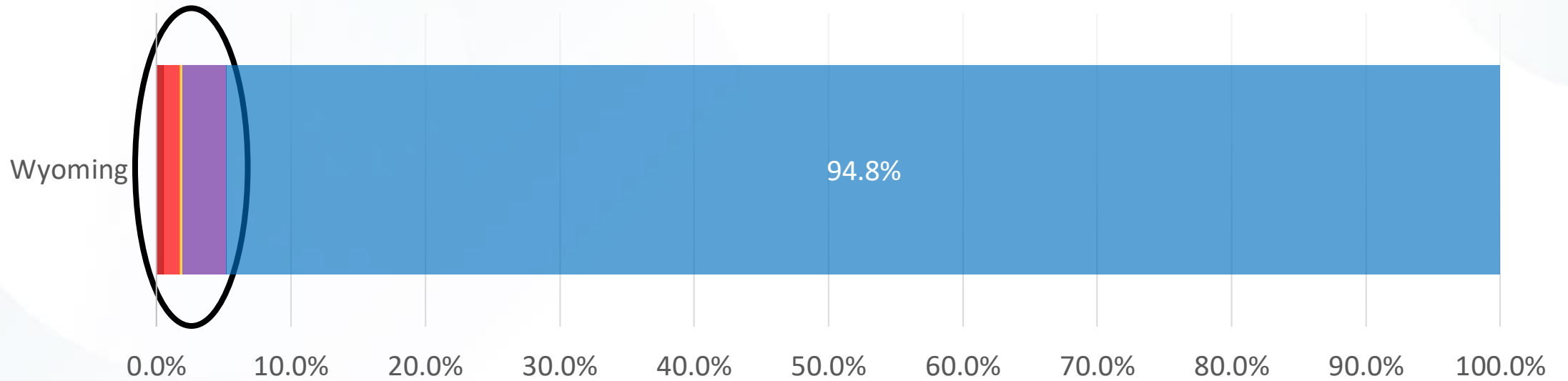
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How to Read the State Results



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Components of Census Coverage



■ Erroneous Enumerations due to Wrong State

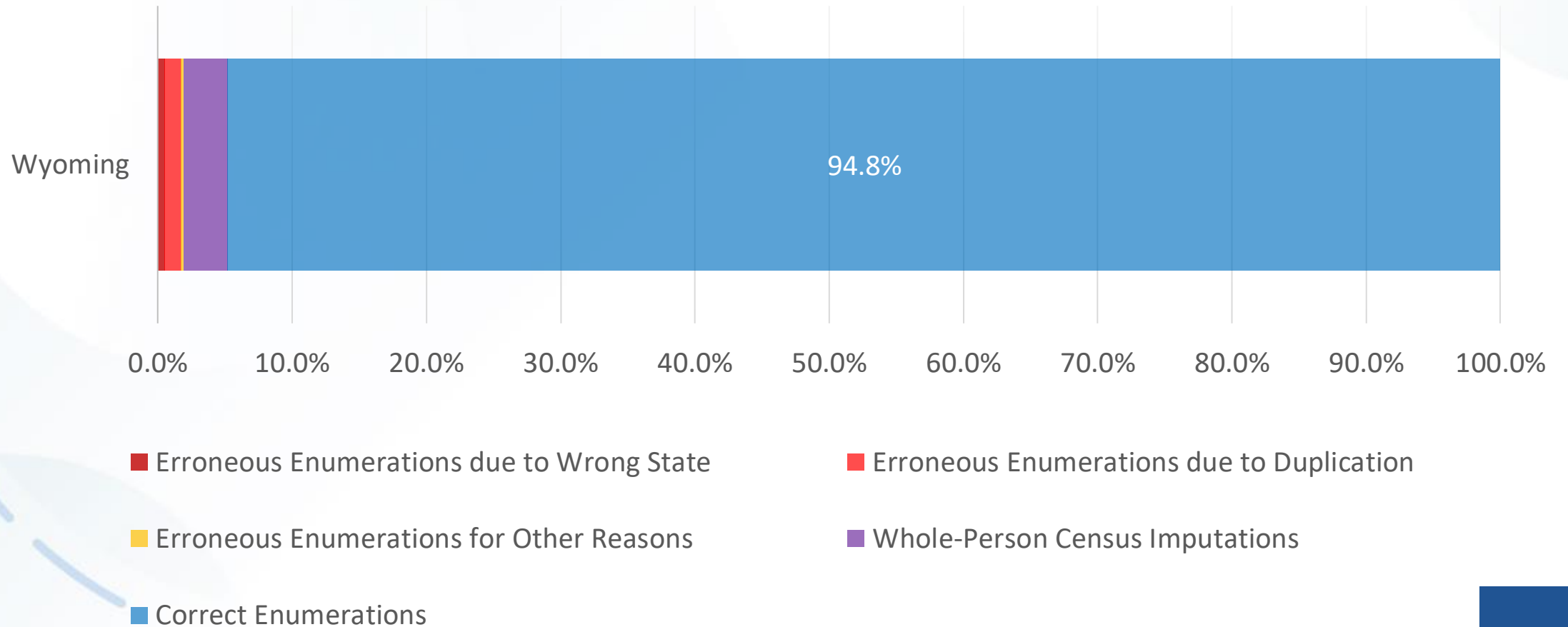
■ Erroneous Enumerations due to Duplication

■ Erroneous Enumerations for Other Reasons

■ Whole-Person Census Imputations

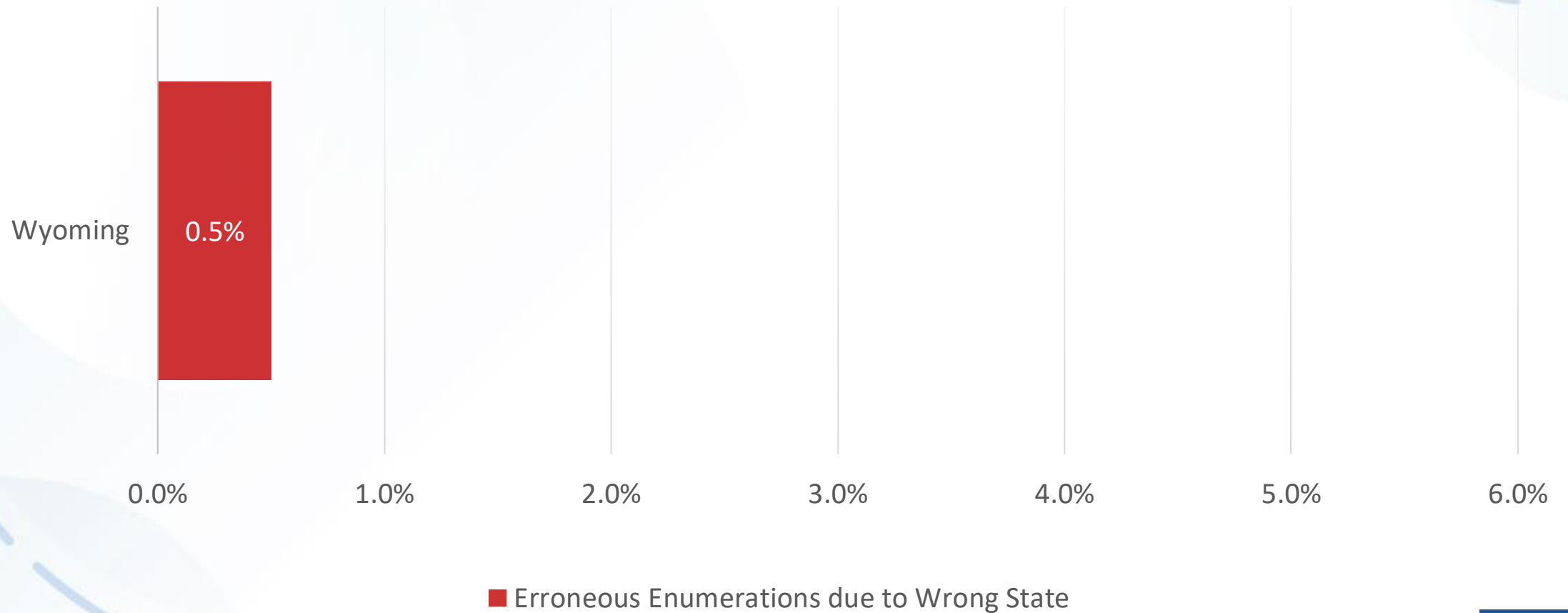
■ Correct Enumerations

Correct Enumerations

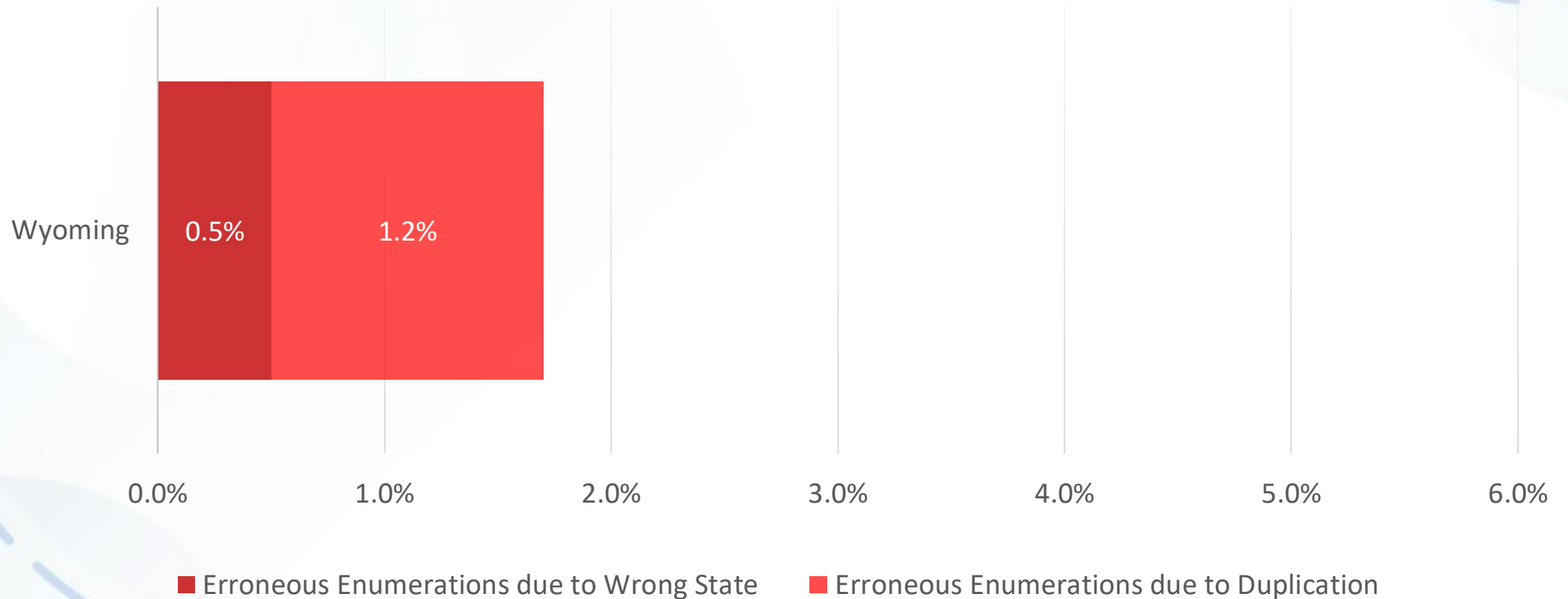


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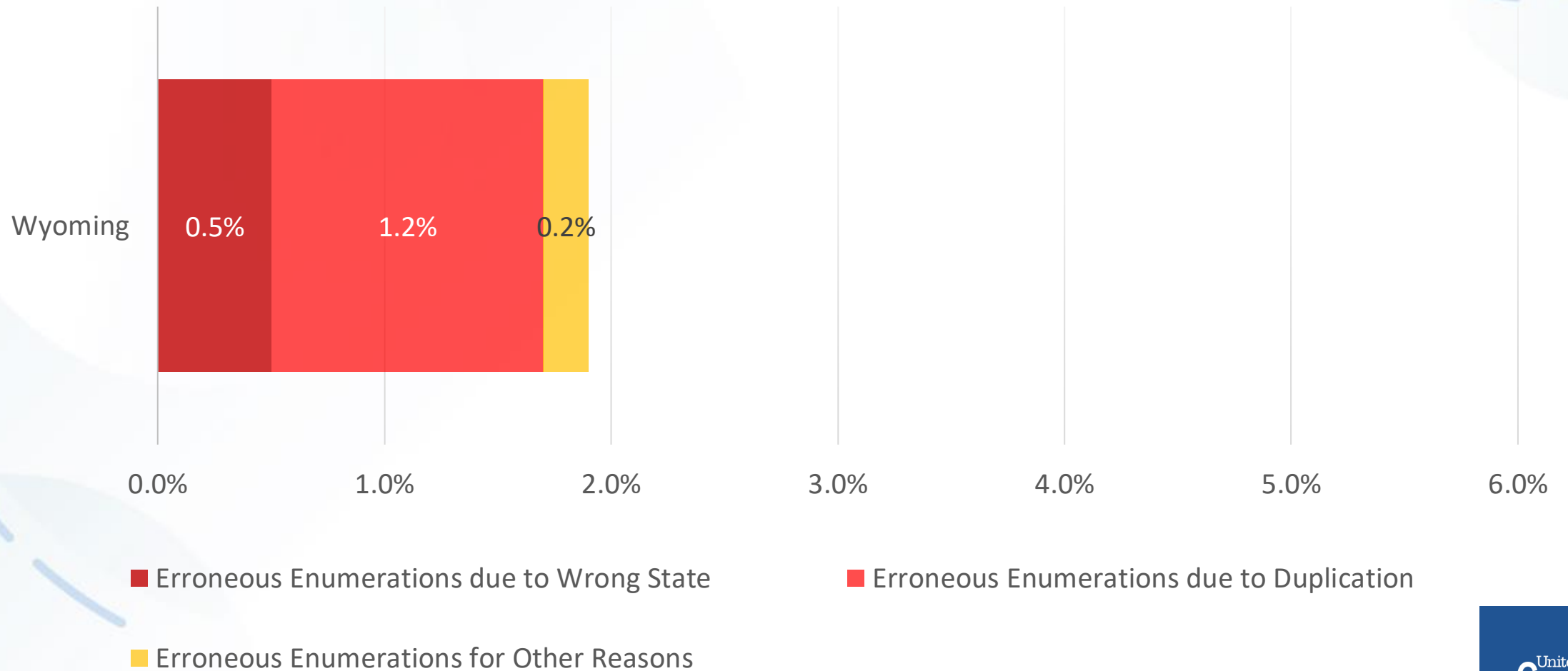
Erroneous Enumerations Due to Wrong State



Erroneous Enumerations due to Duplication

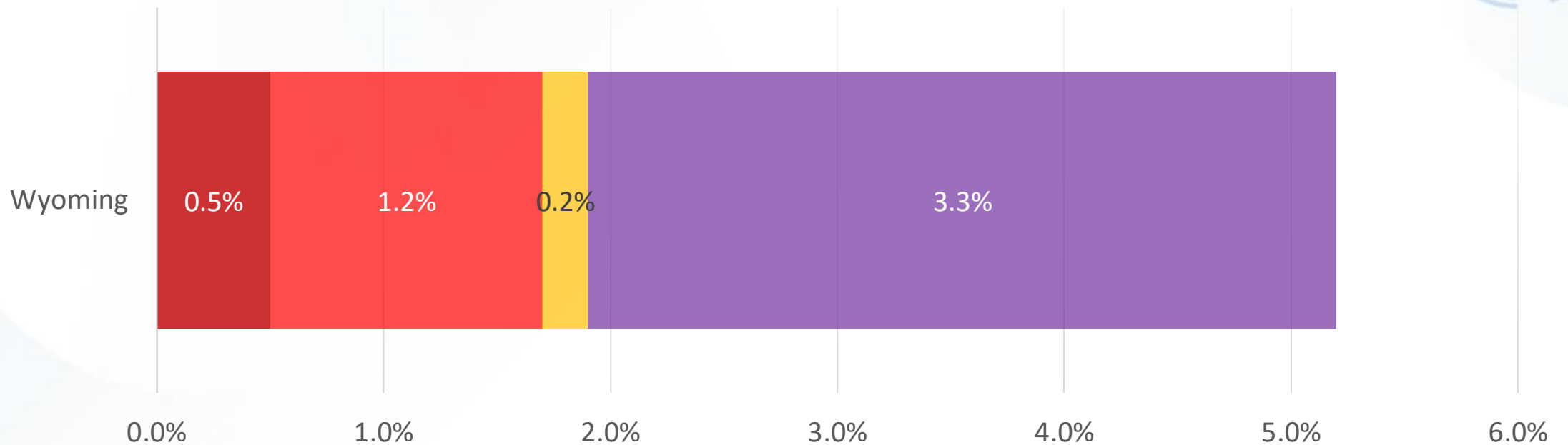


Erroneous Enumerations for Other Reasons



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Whole-Person Census Imputations



■ Erroneous Enumerations due to Wrong State

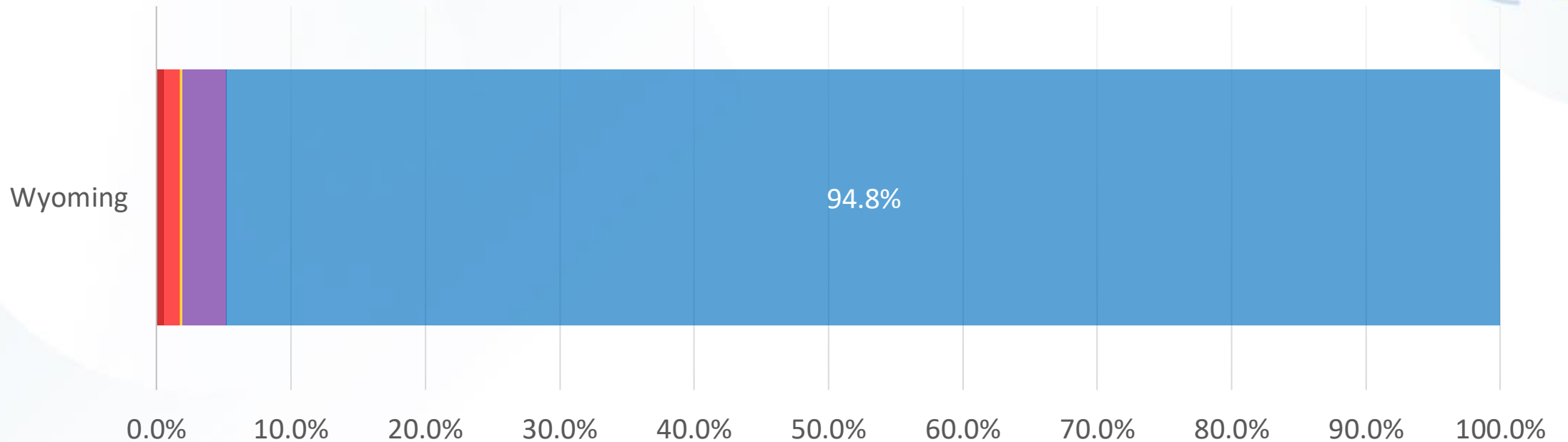
■ Erroneous Enumerations due to Duplication

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■ Whole-Person Census Imputations

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Components of the Census Count



■ Erroneous Enumerations due to Wrong State

■ Erroneous Enumerations due to Duplication

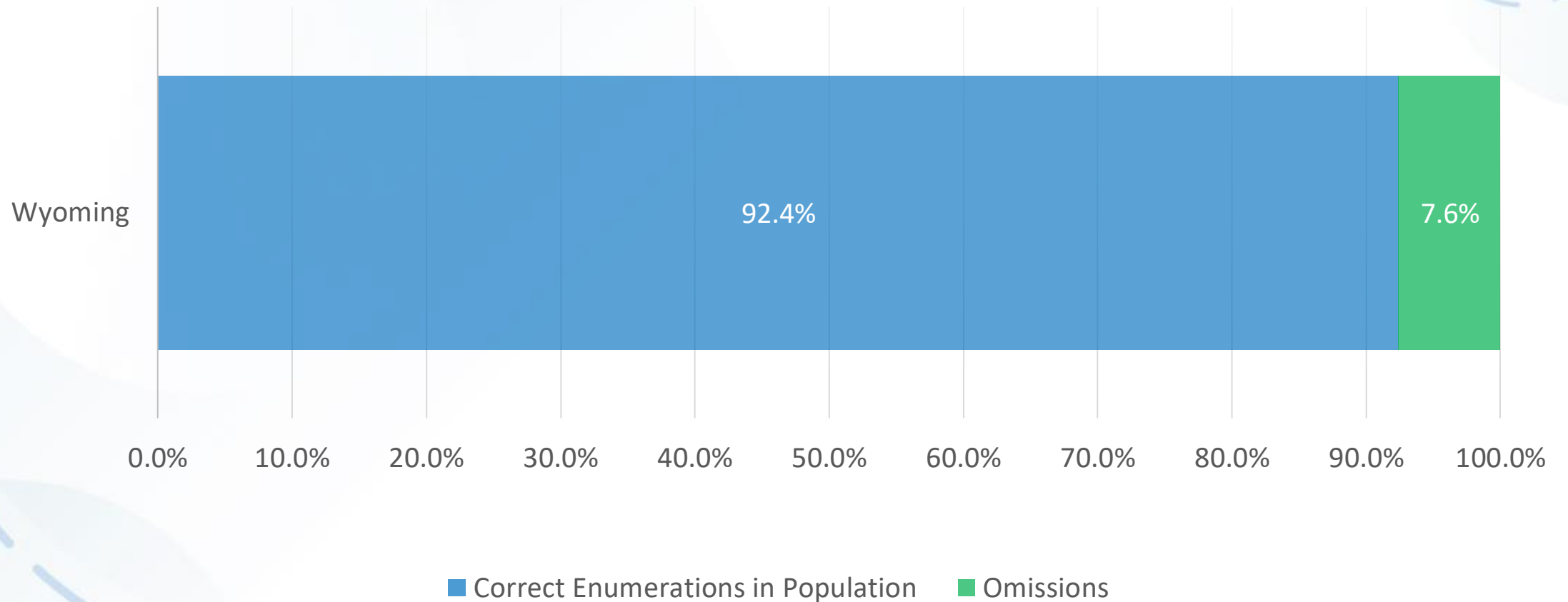
■ Erroneous Enumerations for Other Reasons

■ Whole-Person Census Imputations

■ Correct Enumerations

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Components of the Population

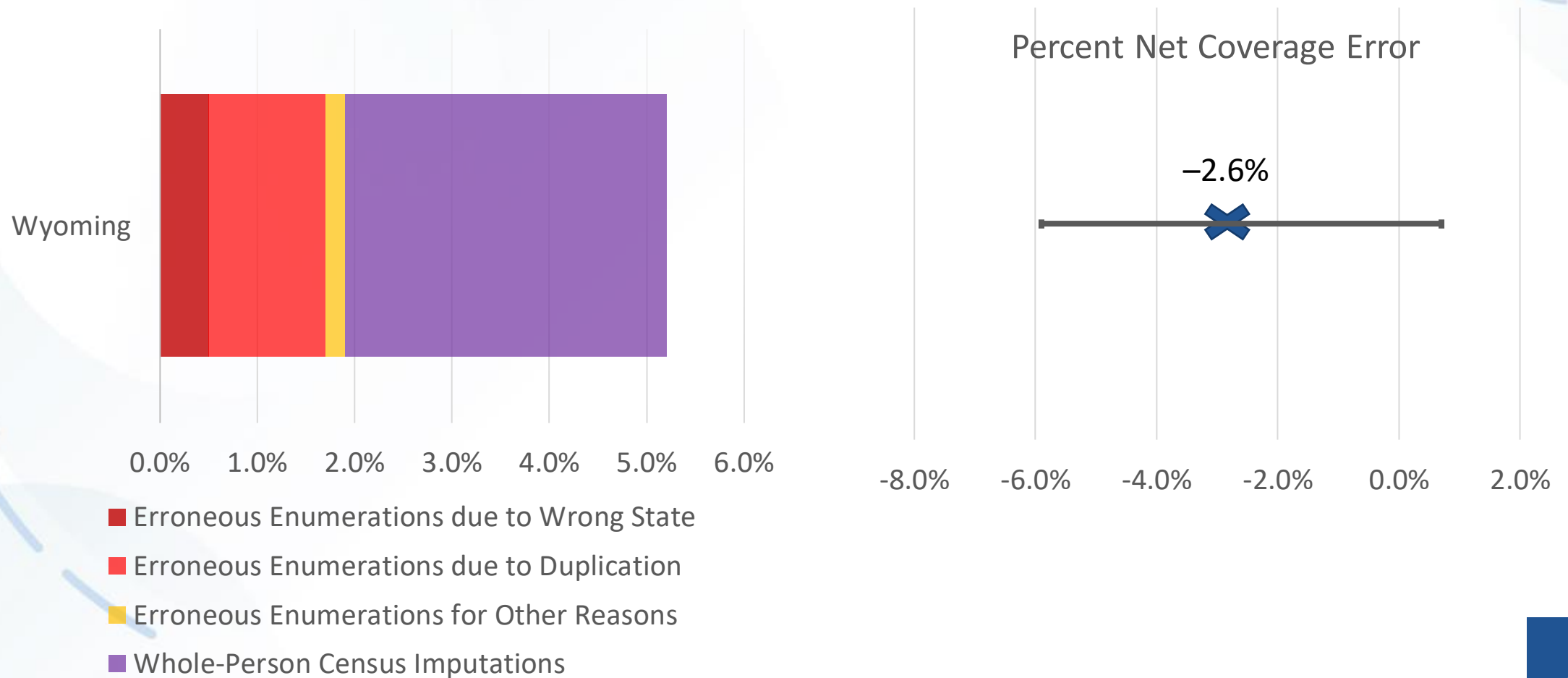


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What Are Omissions?

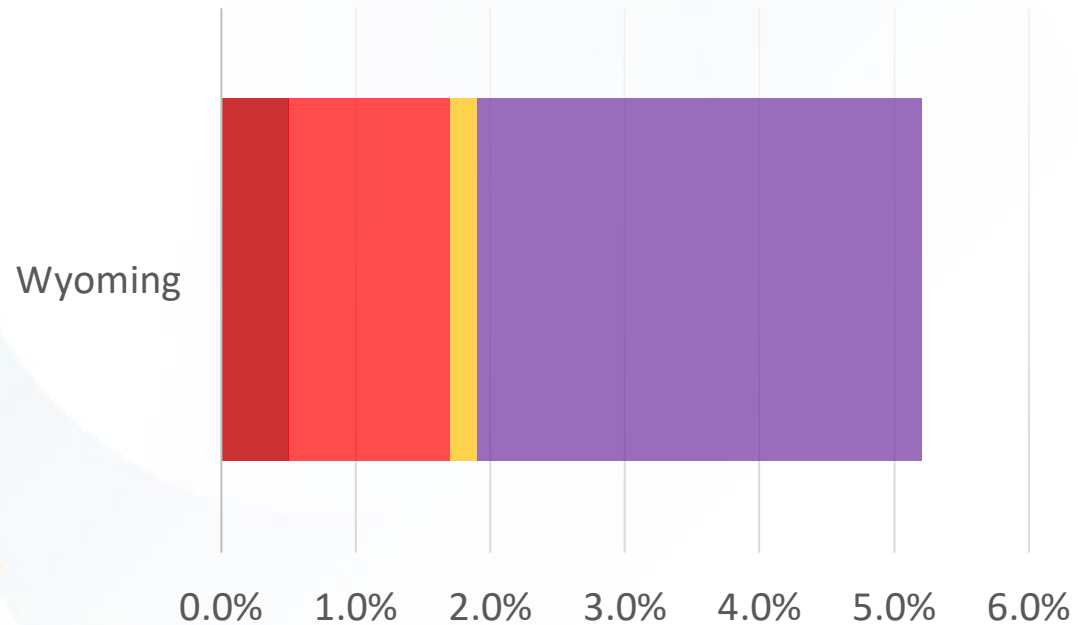
- People who were **not** included in the census count.
- People who **were** included in the census count but do not meet the definition of a correct enumeration (e.g., people in “population count only” households are omissions even though they were included in the census count).

Percent Net Coverage Error

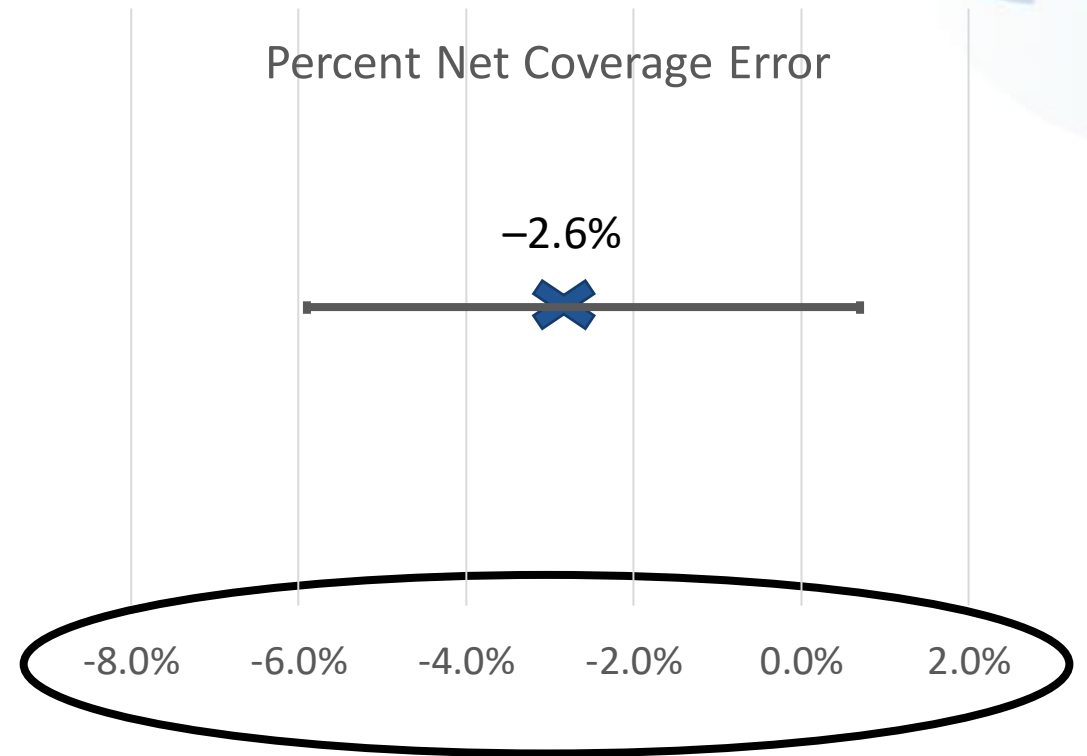


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Percent Net Coverage Error

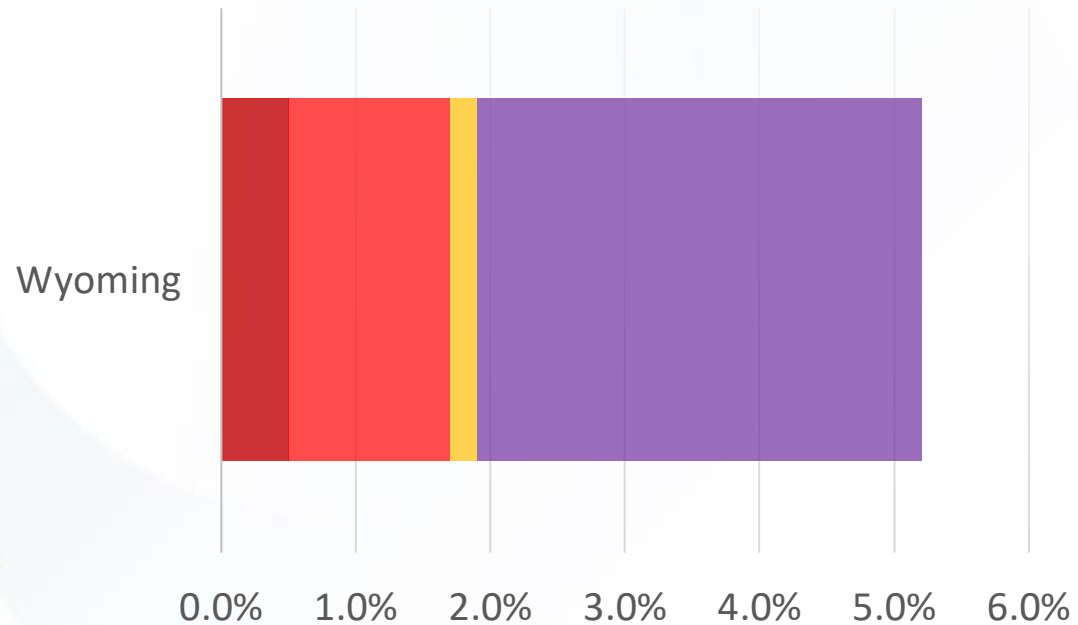


- Erroneous Enumerations due to Wrong State
- Erroneous Enumerations due to Duplication
- Erroneous Enumerations for Other Reasons
- Whole-Person Census Imputations

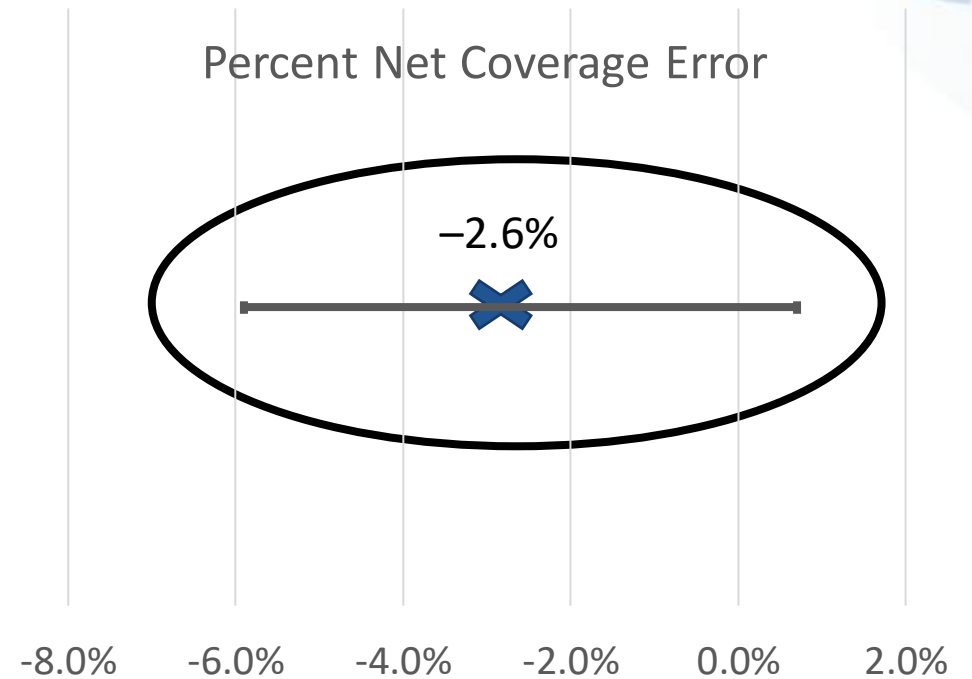


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Percent Net Coverage Error



- Erroneous Enumerations due to Wrong State
- Erroneous Enumerations due to Duplication
- Erroneous Enumerations for Other Reasons
- Whole-Person Census Imputations



2020 Post-Enumeration Survey

Census Coverage Results by Census Operations

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United States[®]
Census
2020

Key Findings for Operations

Correct enumeration rates:

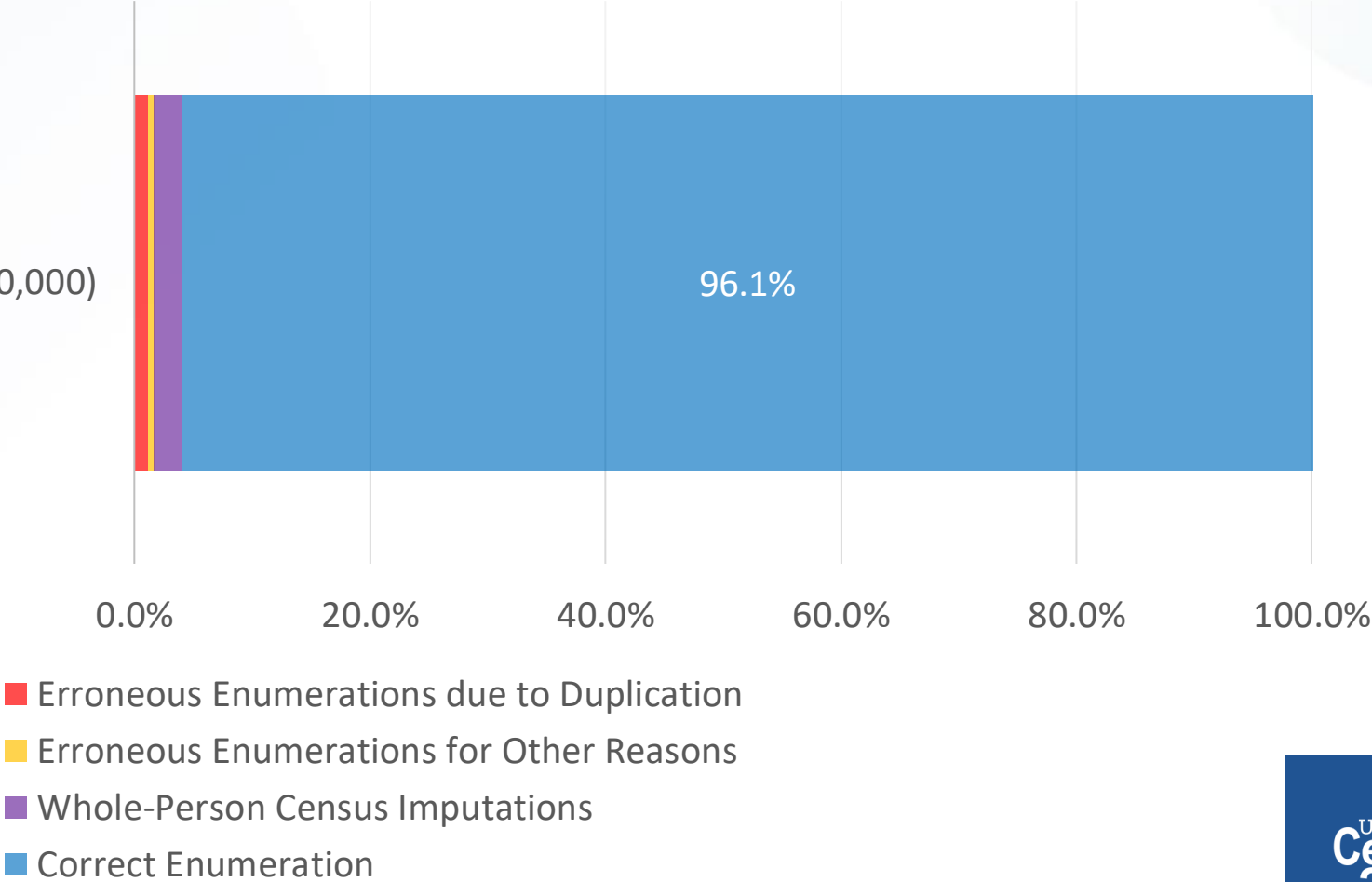
- **96.1% Internet self-response.**
- **94.5% Administrative record enumeration.**

Nonresponse Followup enumerations:

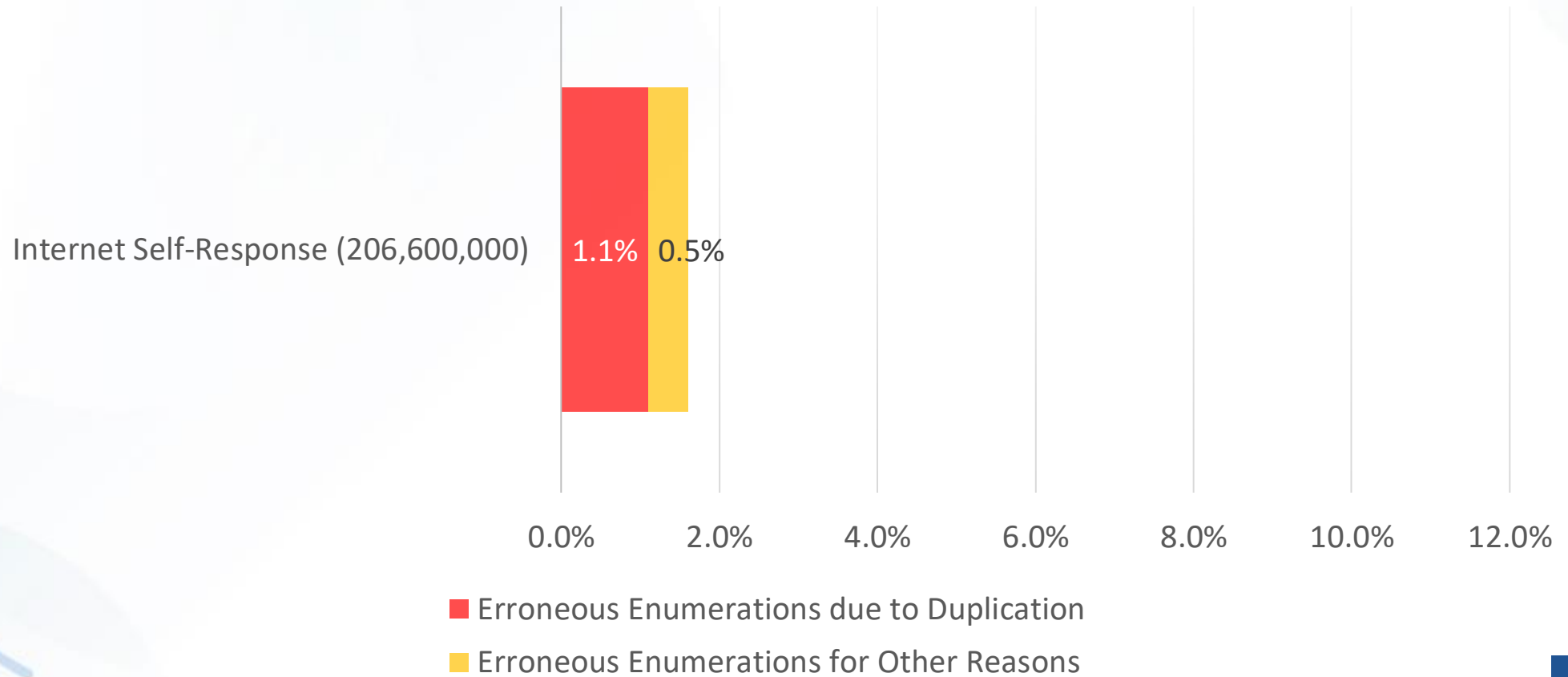
- **3.2% Duplication.**
- **6.3% Whole-person census imputations.**

Internet Self-Response: Correct Enumerations

Internet Self-Response (206,600,000)

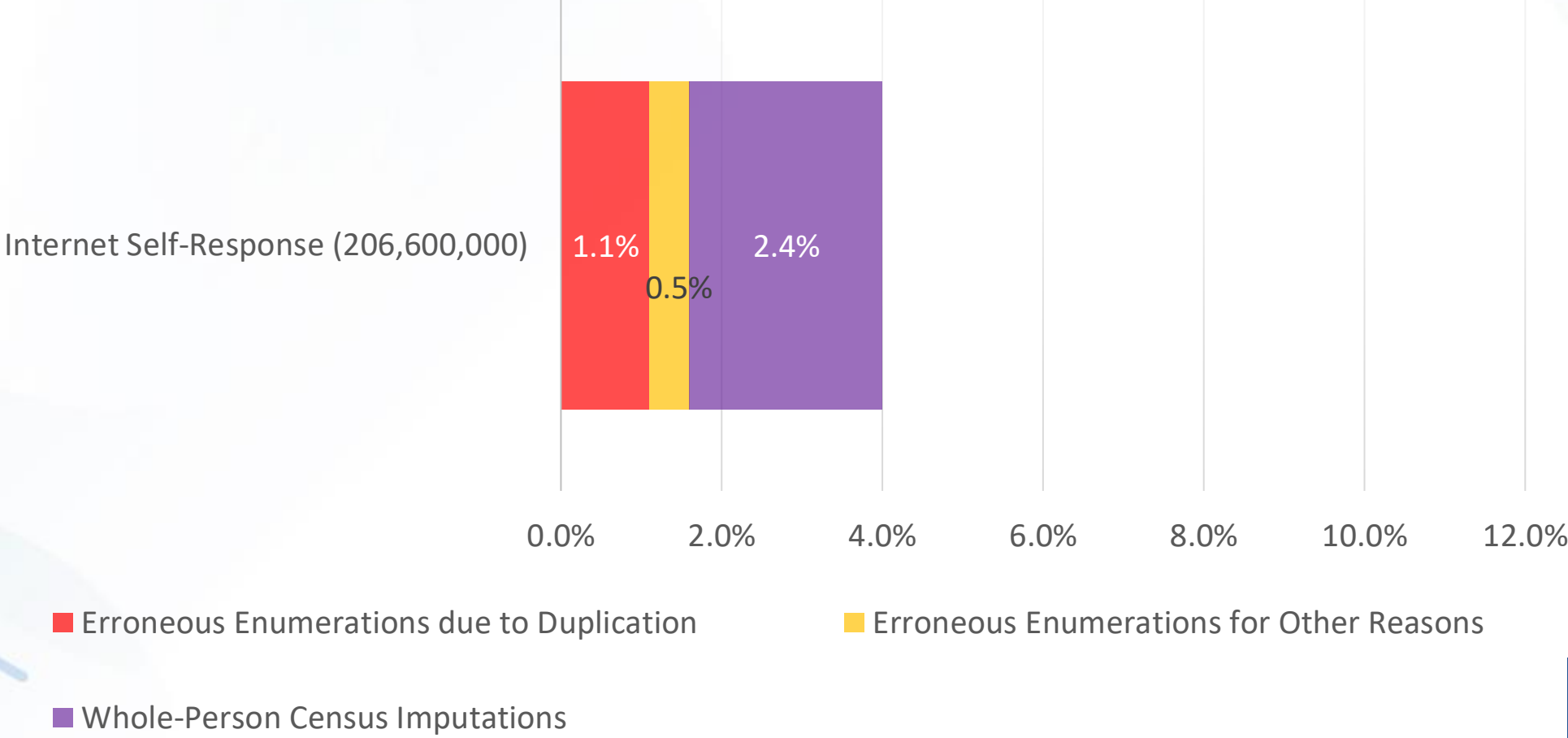


Internet Self-Response: Erroneous Enumerations



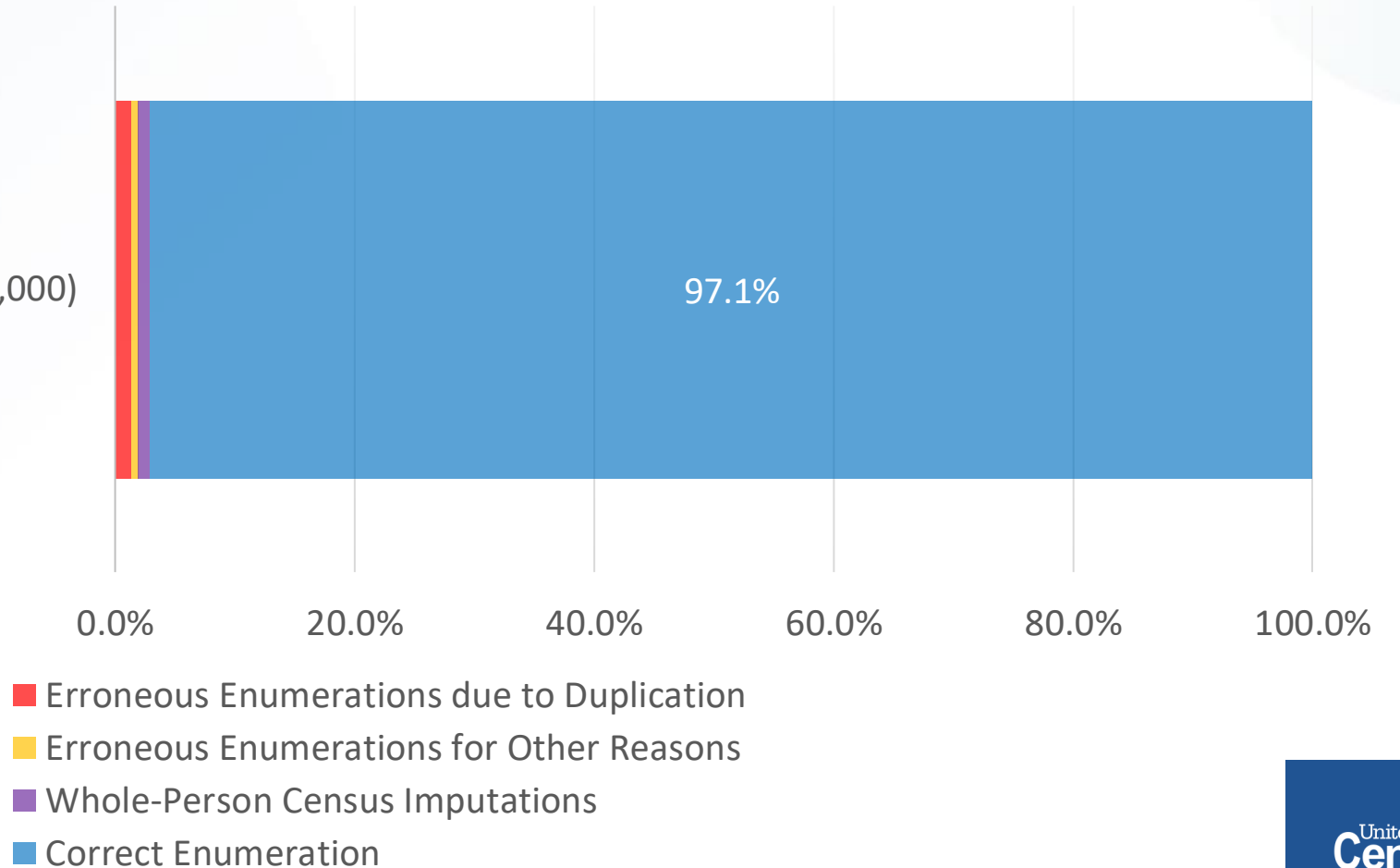
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Internet Self-Response: Whole-Person Census Imputations



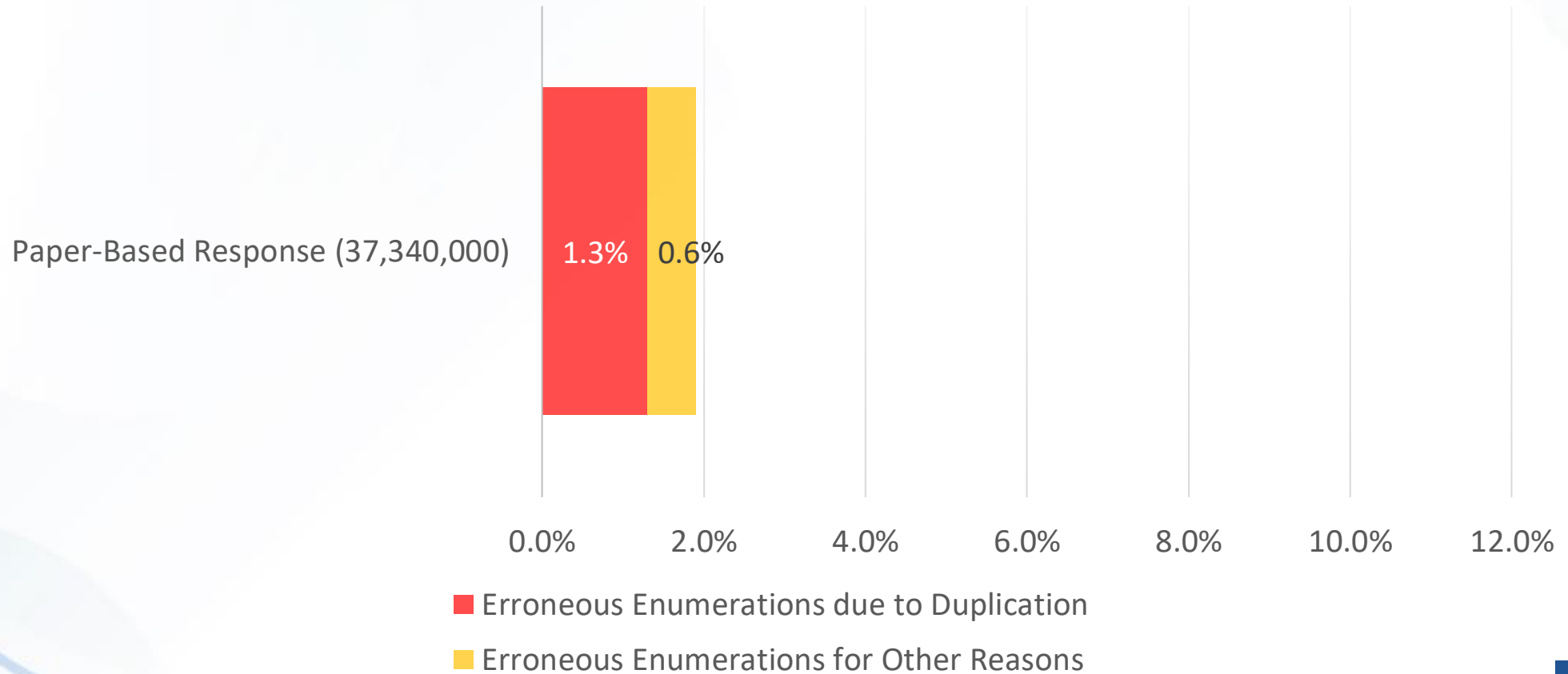
Paper-Based Response: Correct Enumerations

Paper-Based Response (37,340,000)

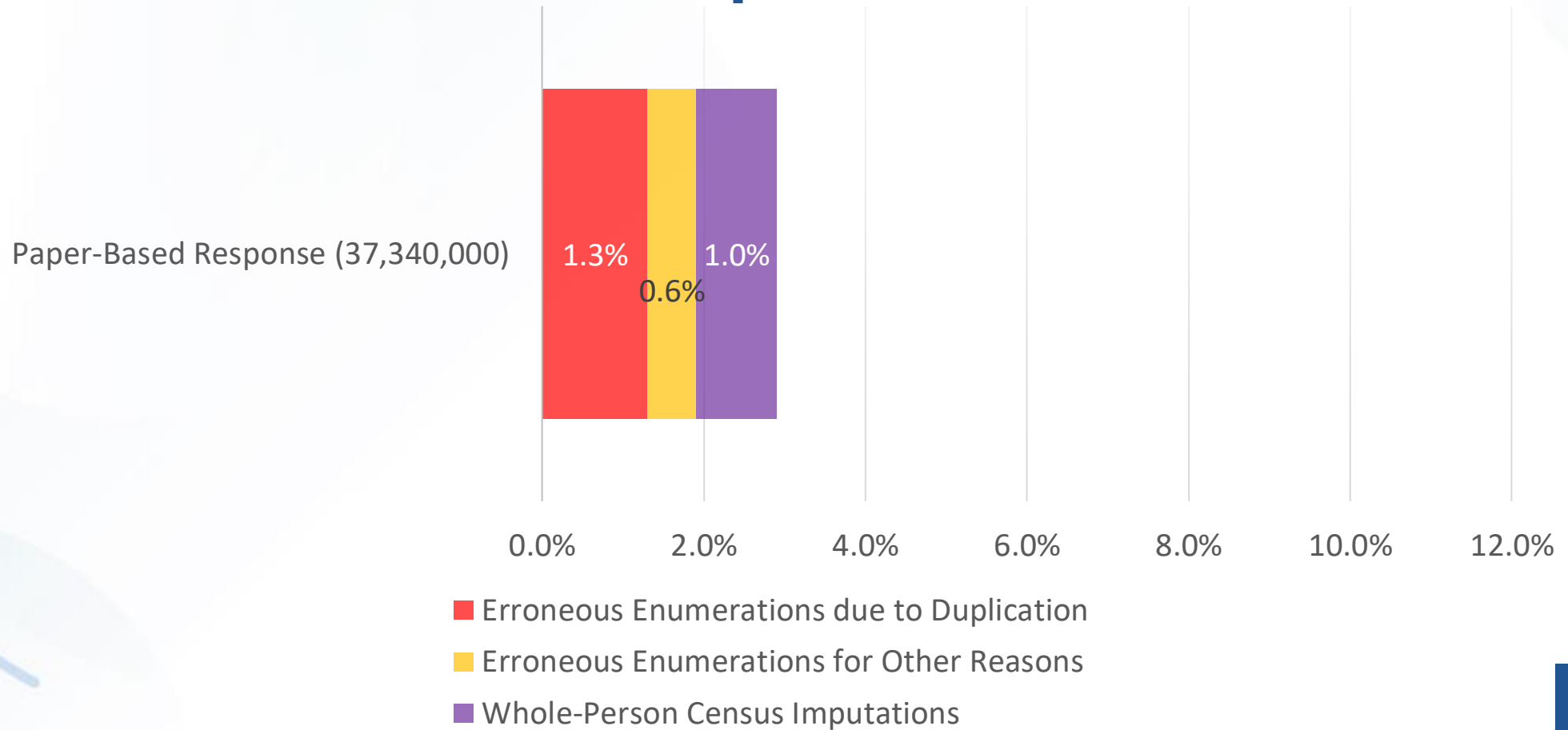


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Paper-Based Response: Erroneous Enumerations



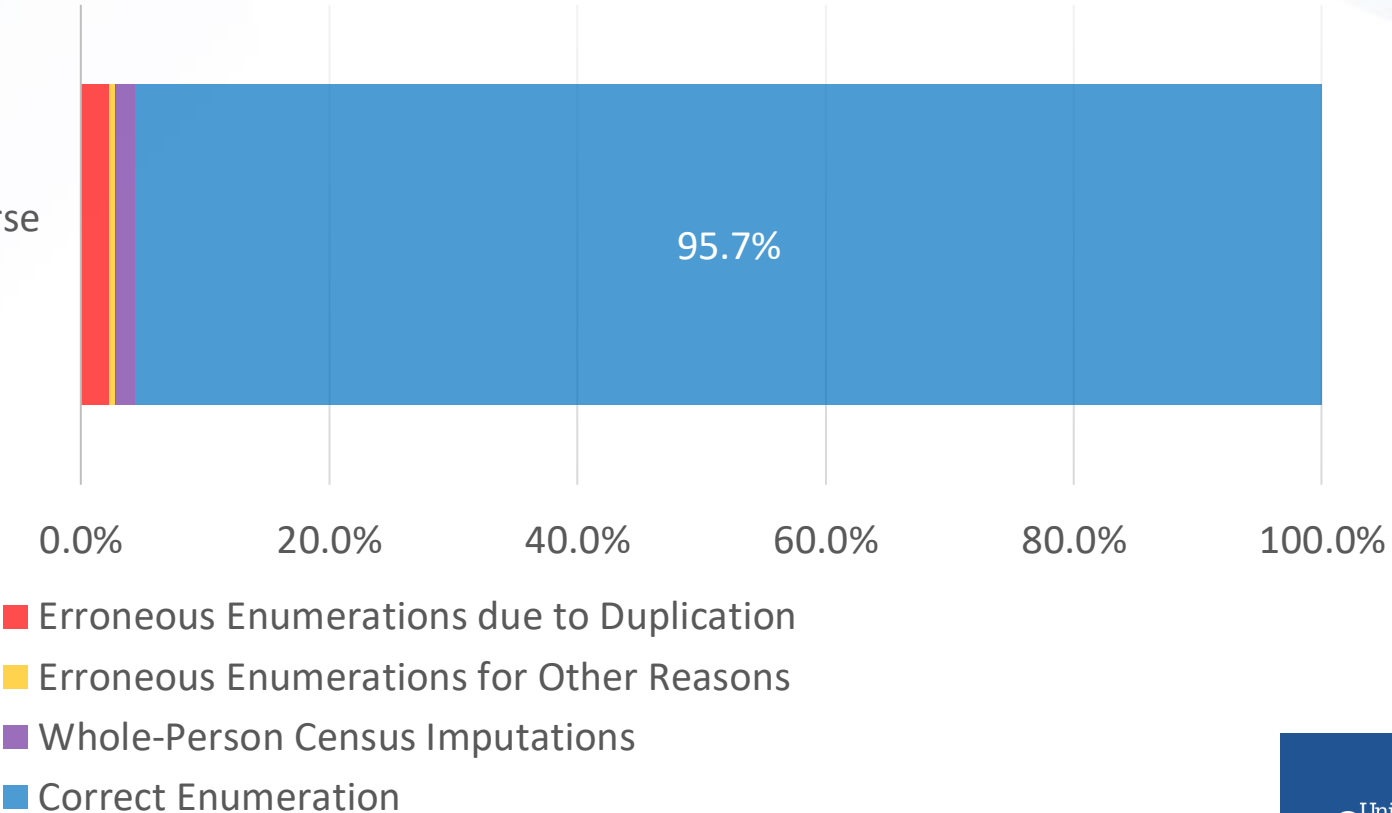
Paper-Based Response: Whole-Person Census Imputations



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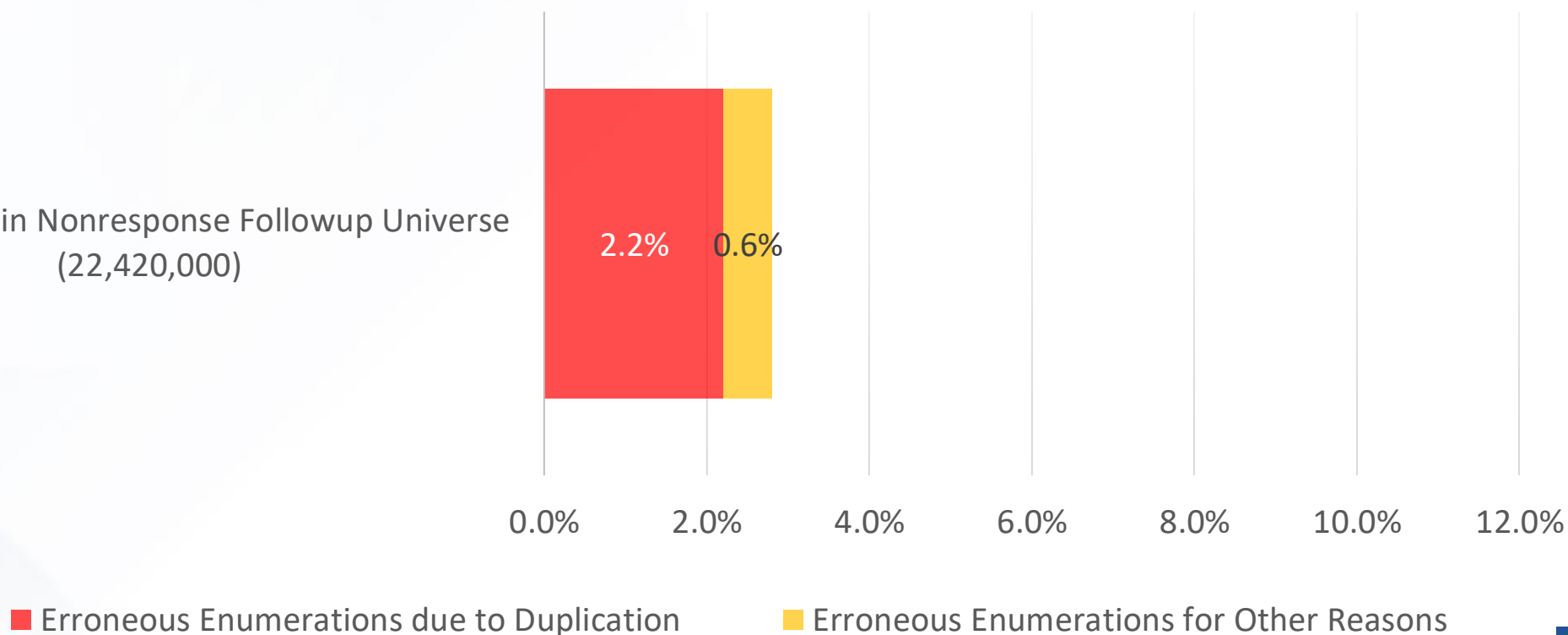
Self-Response in Nonresponse Followup: Correct Enumerations

Self-Response in Nonresponse Followup Universe
(22,420,000)



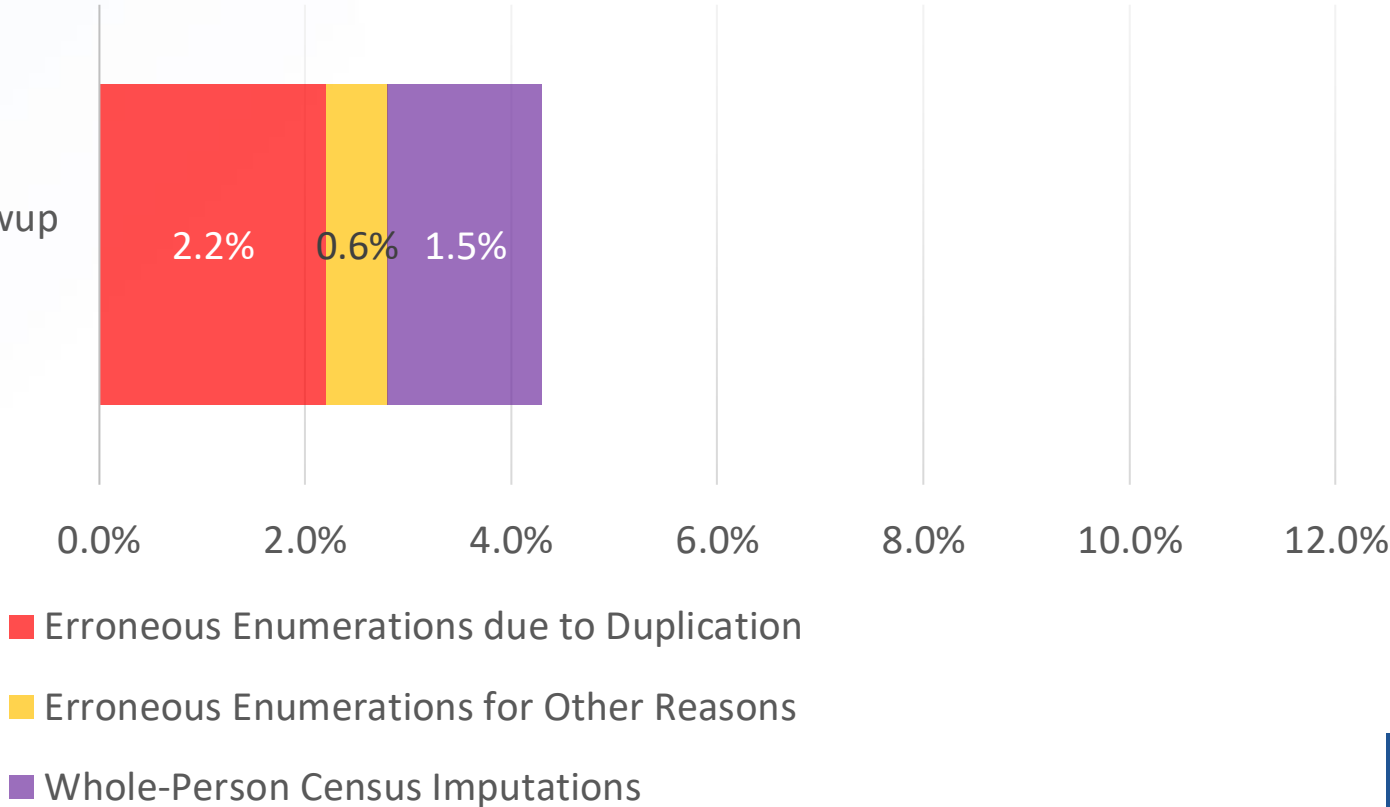
Self-Response in Nonresponse Followup: Erroneous Enumerations

Self-Response in Nonresponse Followup Universe
(22,420,000)



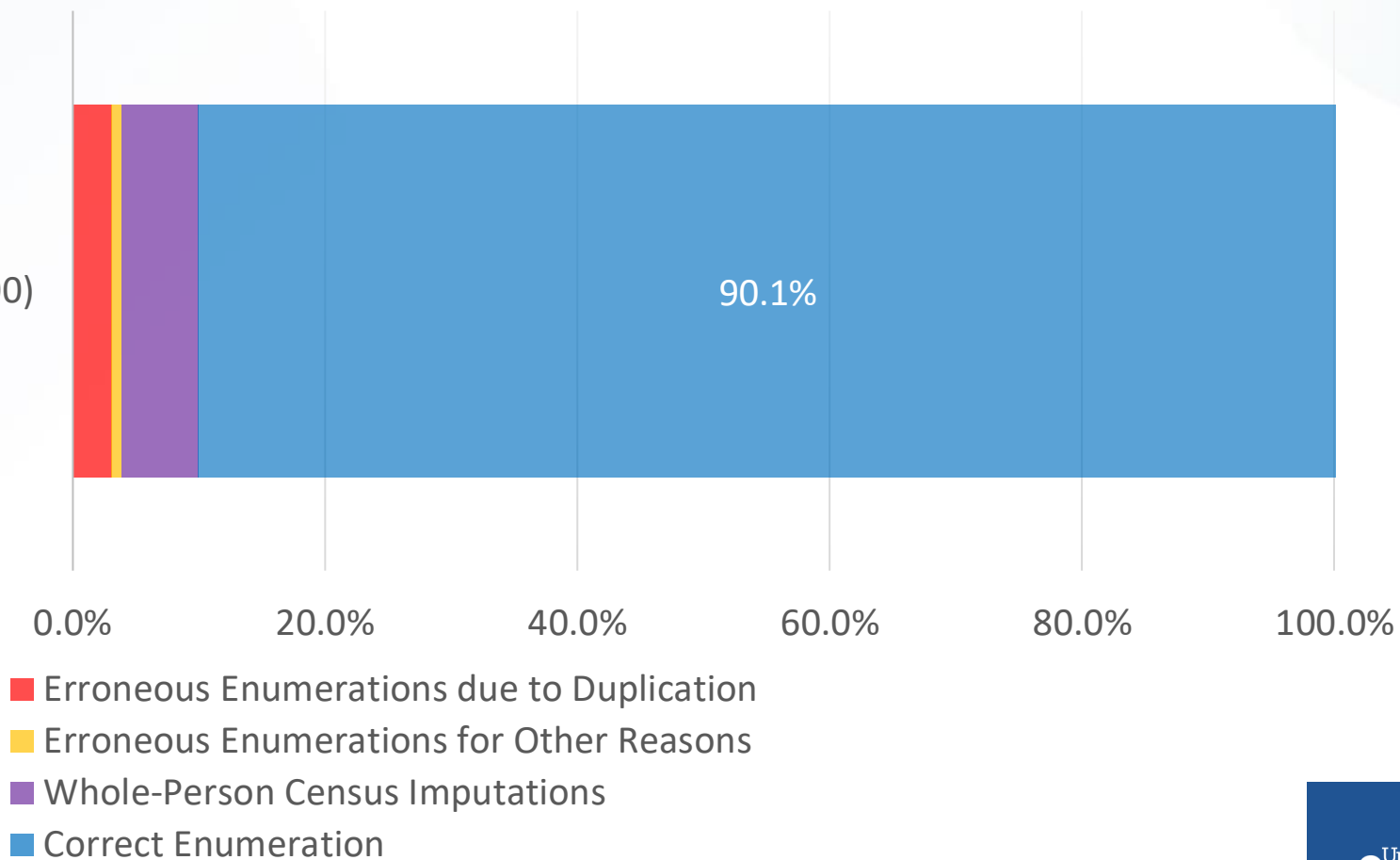
Self-Response in Nonresponse Followup: Whole-Person Census Imputations

Self-Response in Nonresponse Followup
Universe (22,420,000)

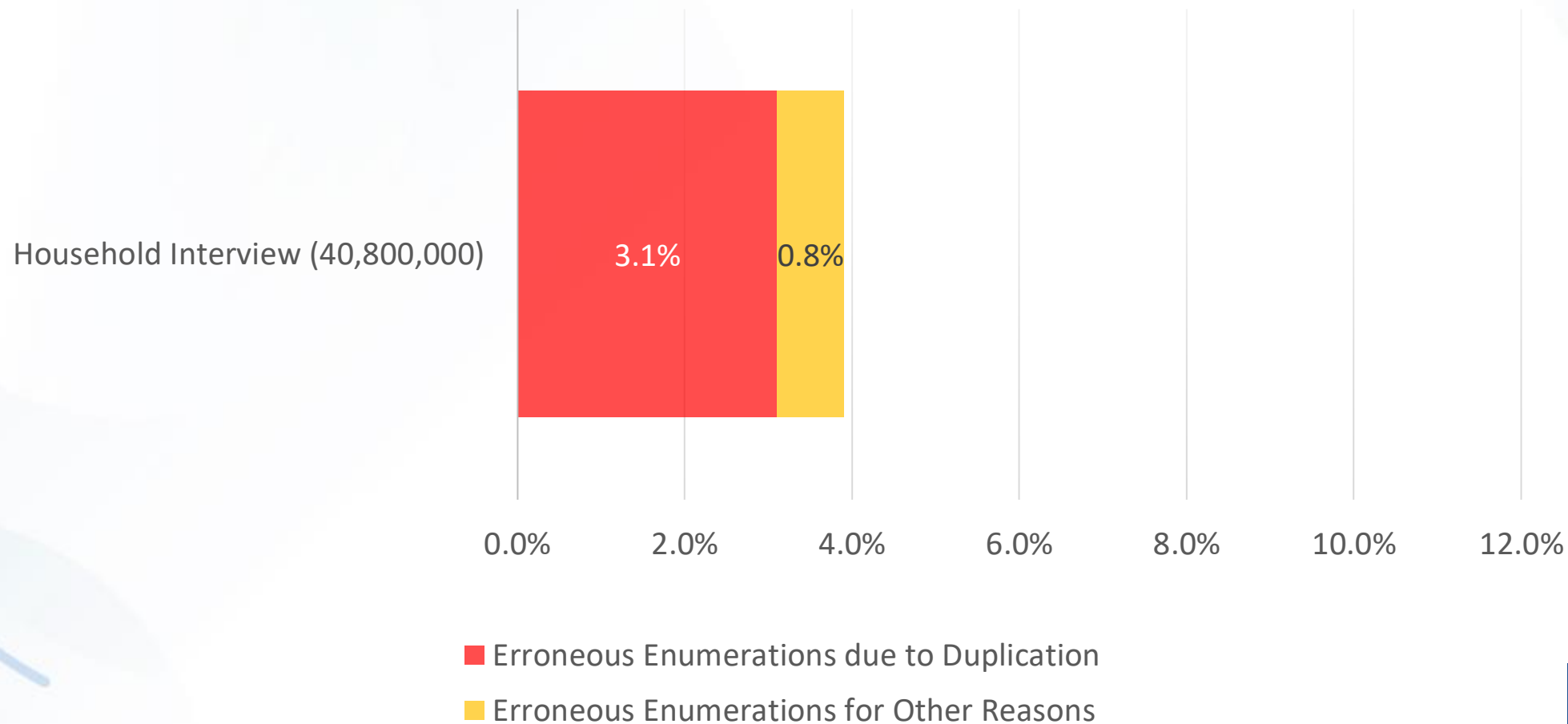


Nonresponse Followup Household Interview: Correct Enumerations

Household Interview (40,800,000)



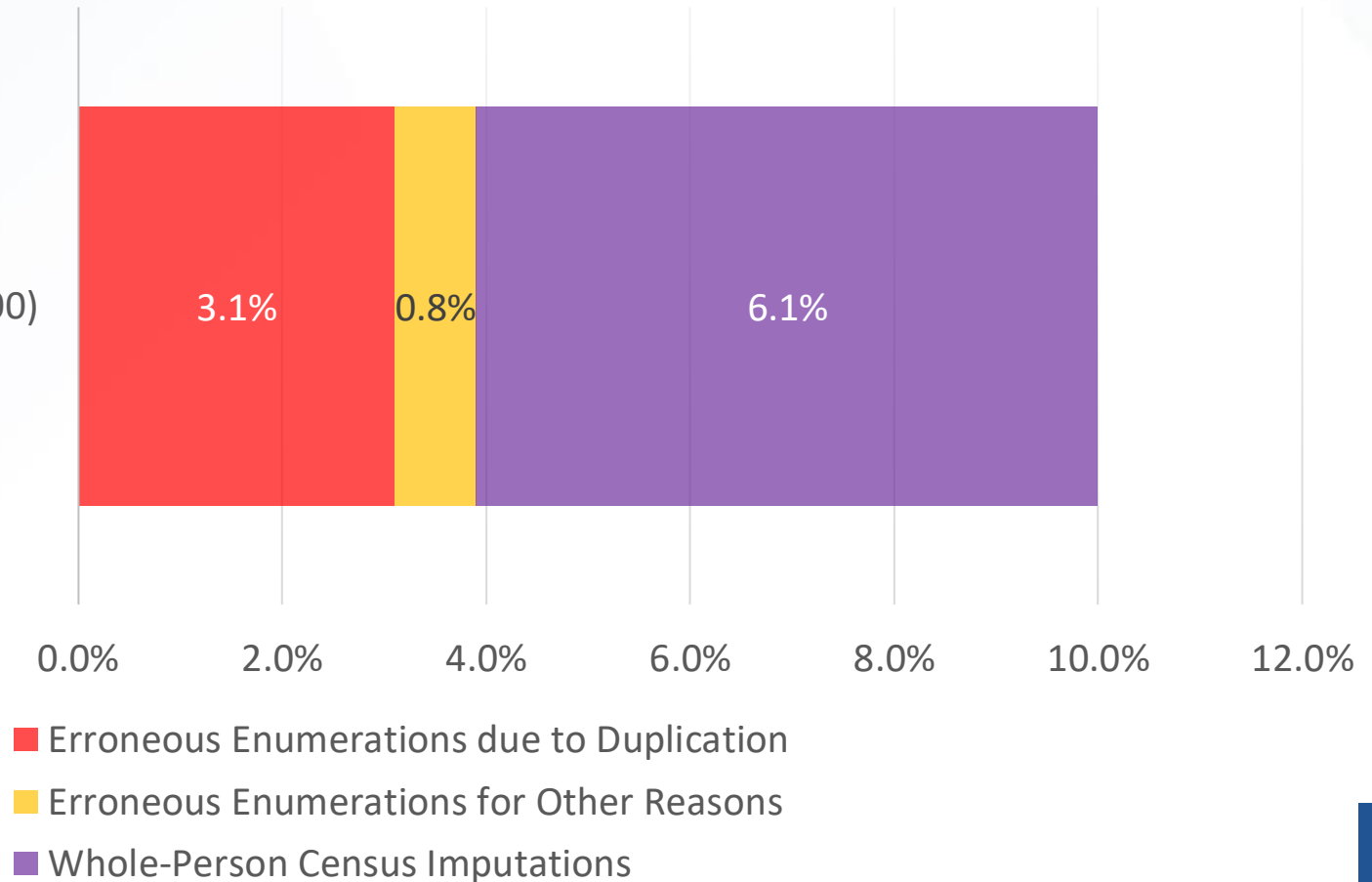
Nonresponse Followup Household Interview: Erroneous Enumerations



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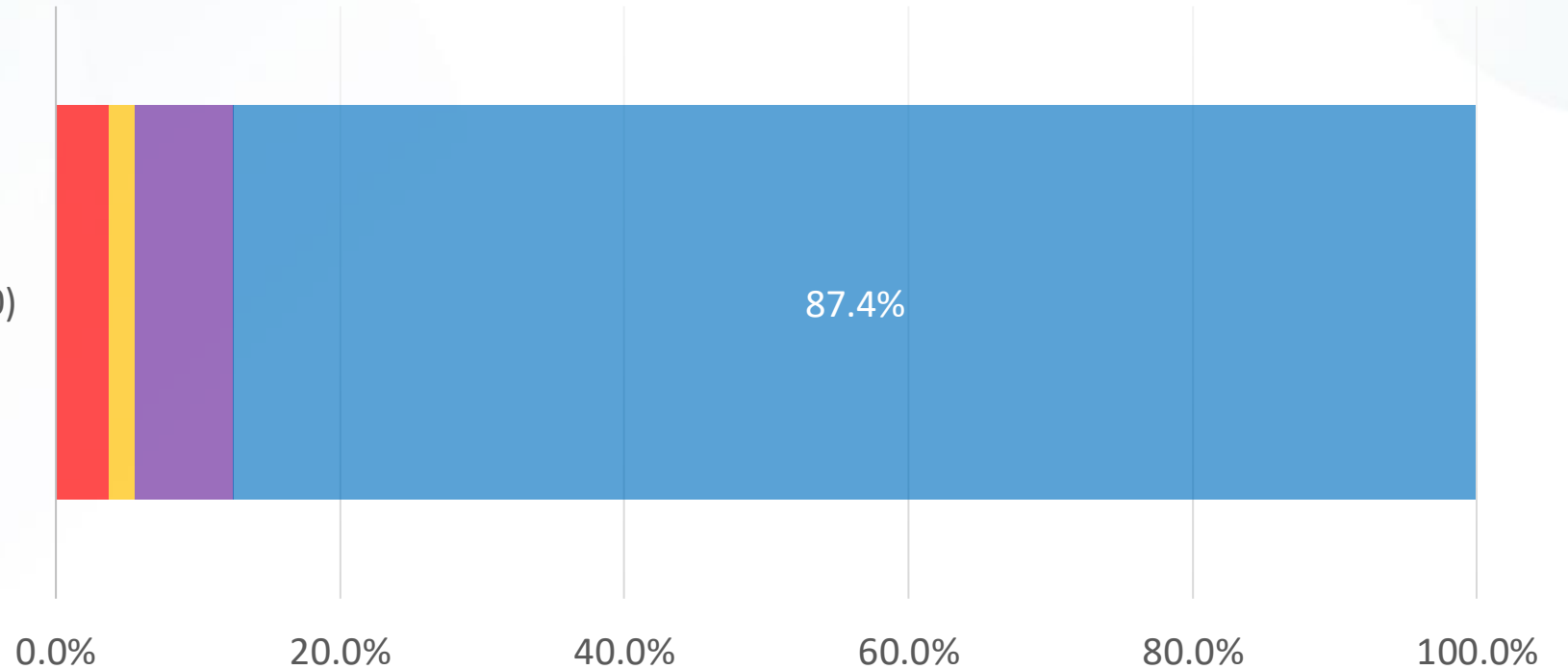
Nonresponse Followup Household Interview: Whole-Person Census Imputations

Household Interview (40,800,000)



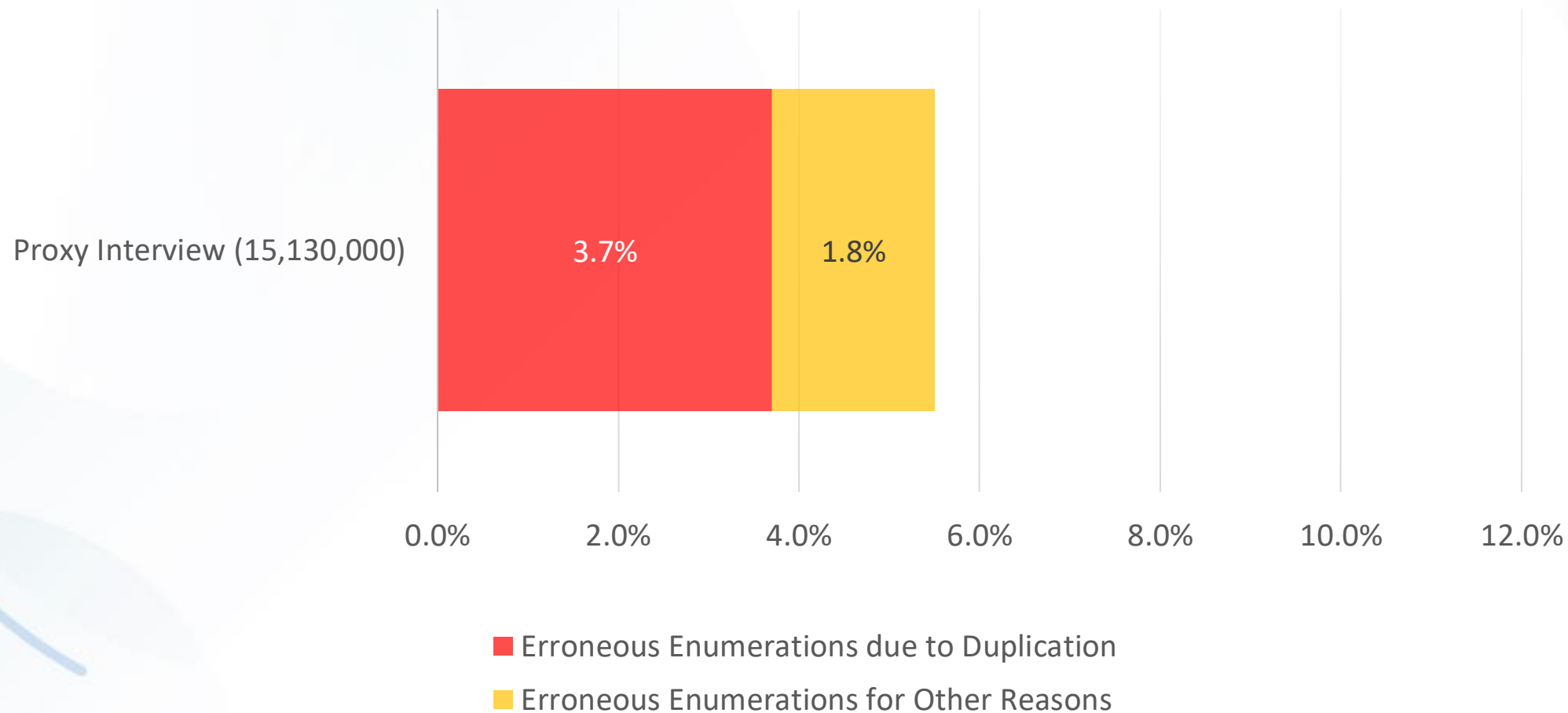
Proxy Interview: Correct Enumerations

Proxy Interview (15,130,000)



- Erroneous Enumerations due to Duplication
- Erroneous Enumerations for Other Reasons
- Whole-Person Census Imputations
- Correct Enumeration

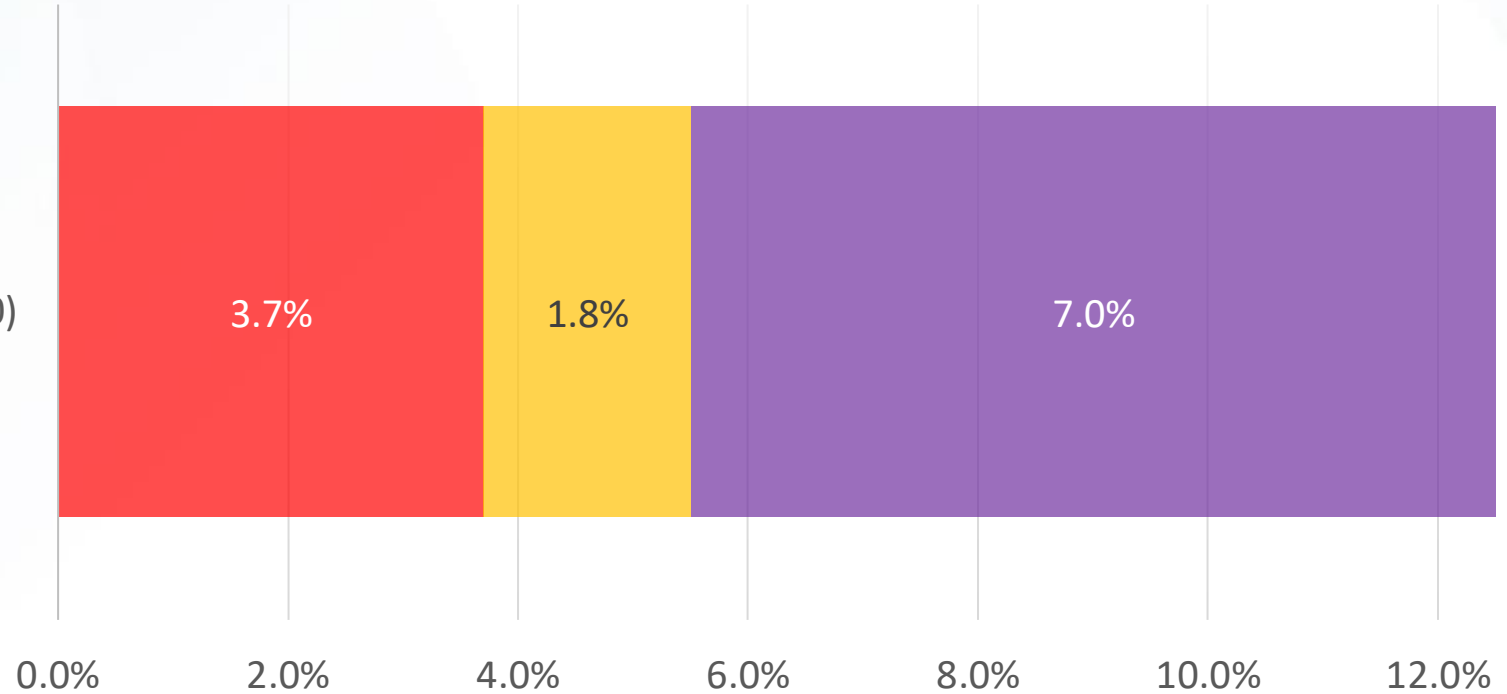
Proxy Interview: Erroneous Enumerations



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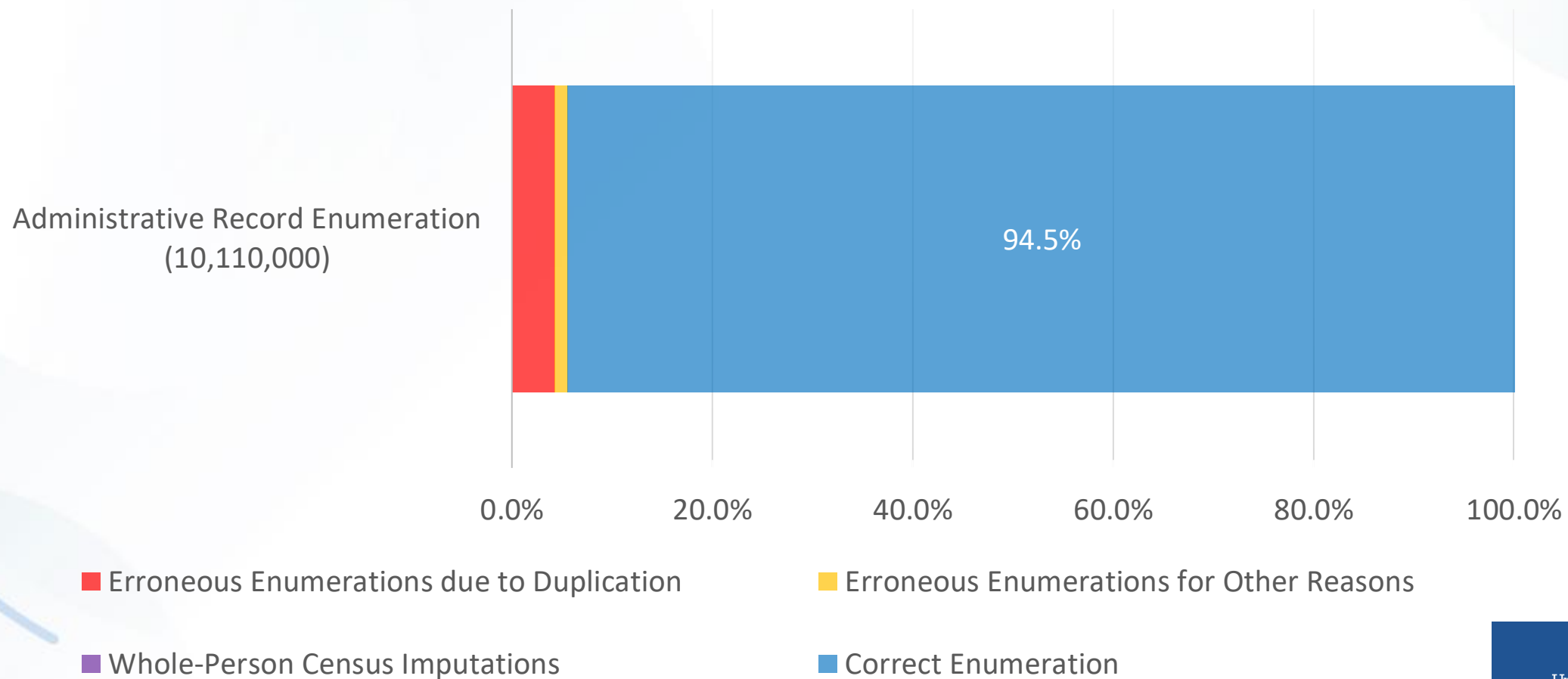
Proxy Interview: Whole-Person Census Imputations

Proxy Interview (15,130,000)



- Erroneous Enumerations due to Duplication
- Erroneous Enumerations for Other Reasons
- Whole-Person Census Imputations

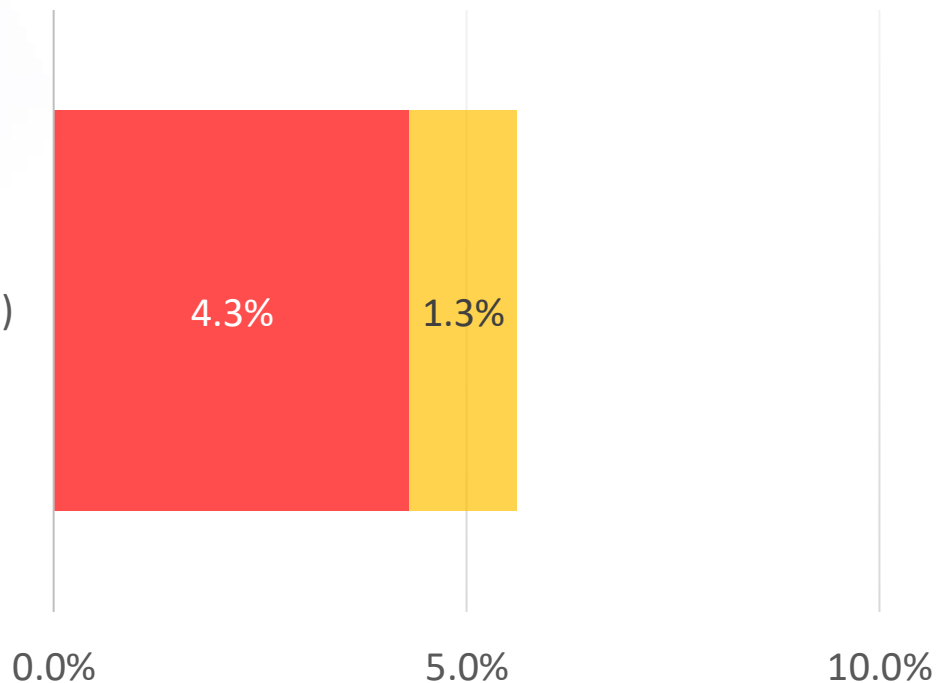
Administrative Record Enumeration: Correct Enumerations



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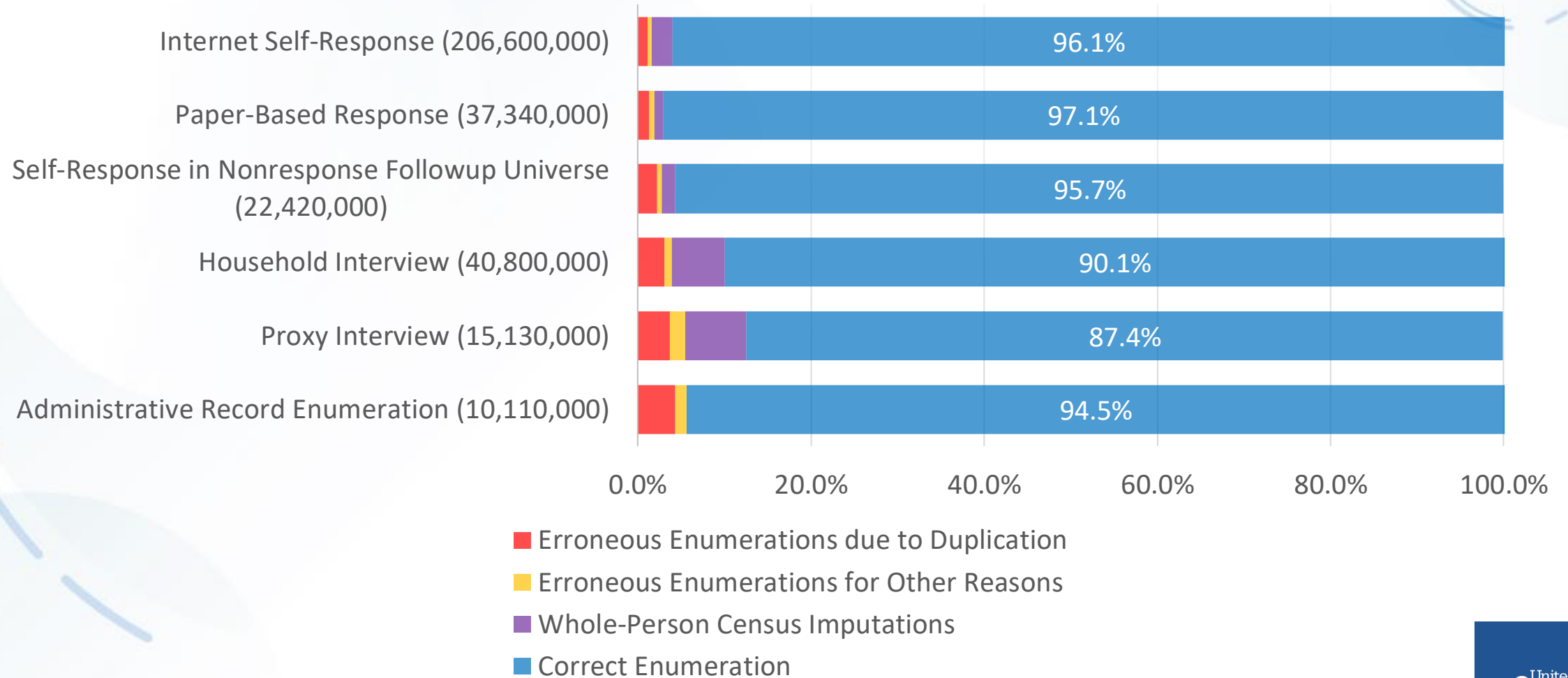
Administrative Record Enumeration: Erroneous Enumerations

Administrative Record Enumeration (10,110,000)

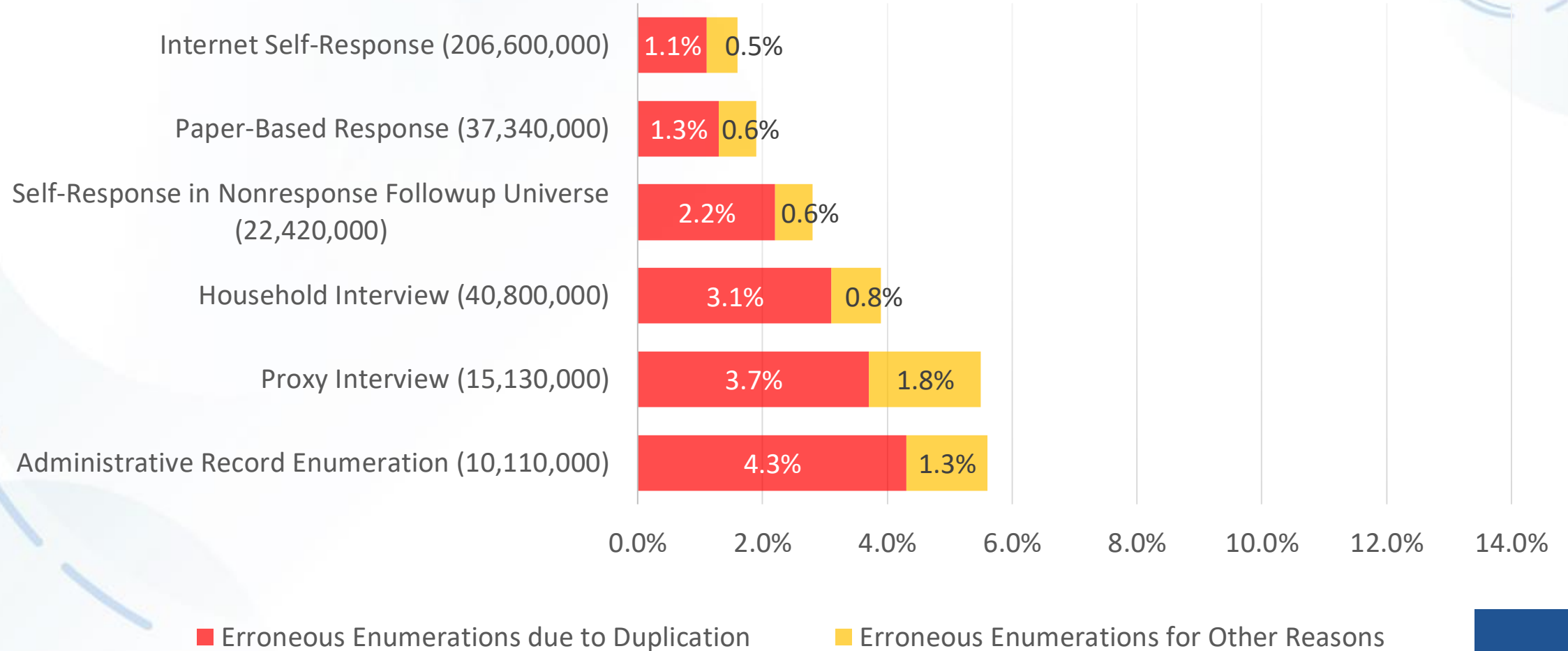


- Erroneous Enumerations due to Duplication
- Erroneous Enumerations for Other Reasons

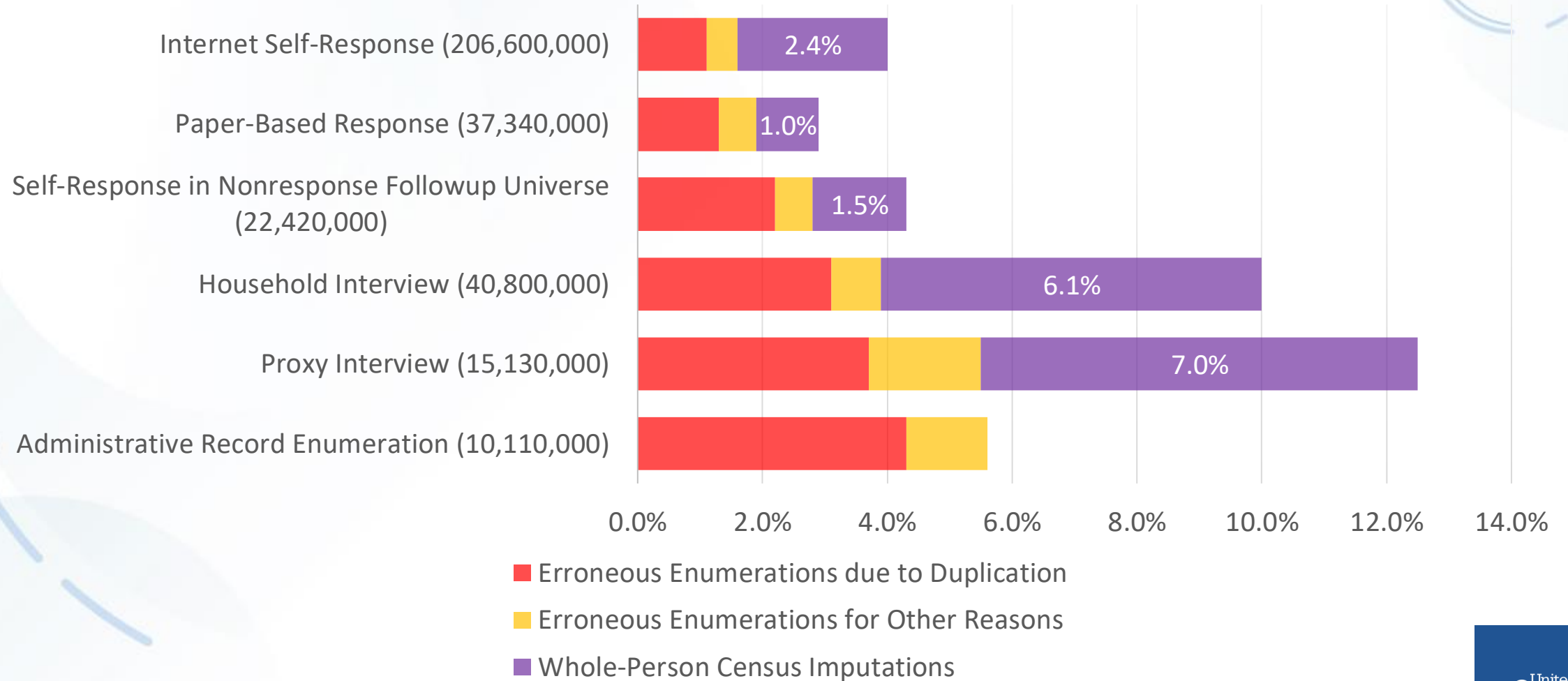
Enumeration Mode



Enumeration Mode



Enumeration Mode



Summary

- **States**
 - **36 states and the District of Columbia did not have a statistically significant undercount or overcount.**
 - **Eight states had a statistically significant overcount.**
 - **Six states had a statistically significant undercount.**
- **Internet self-response had a correct enumeration rate of 96.1 percent.**
- **Administrative record enumerations had a 94.5 percent correct enumeration rate.**
- **3.2 percent of the Nonresponse Followup enumerations were duplicates, and 6.3 percent were whole-person census imputations.**

Note: More graphs and tables can be found in the PES report.

2020 Post-Enumeration Survey

PES Quality Measures

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Imputation Rates in the 2020 and 2010 PES Sample (Unweighted)

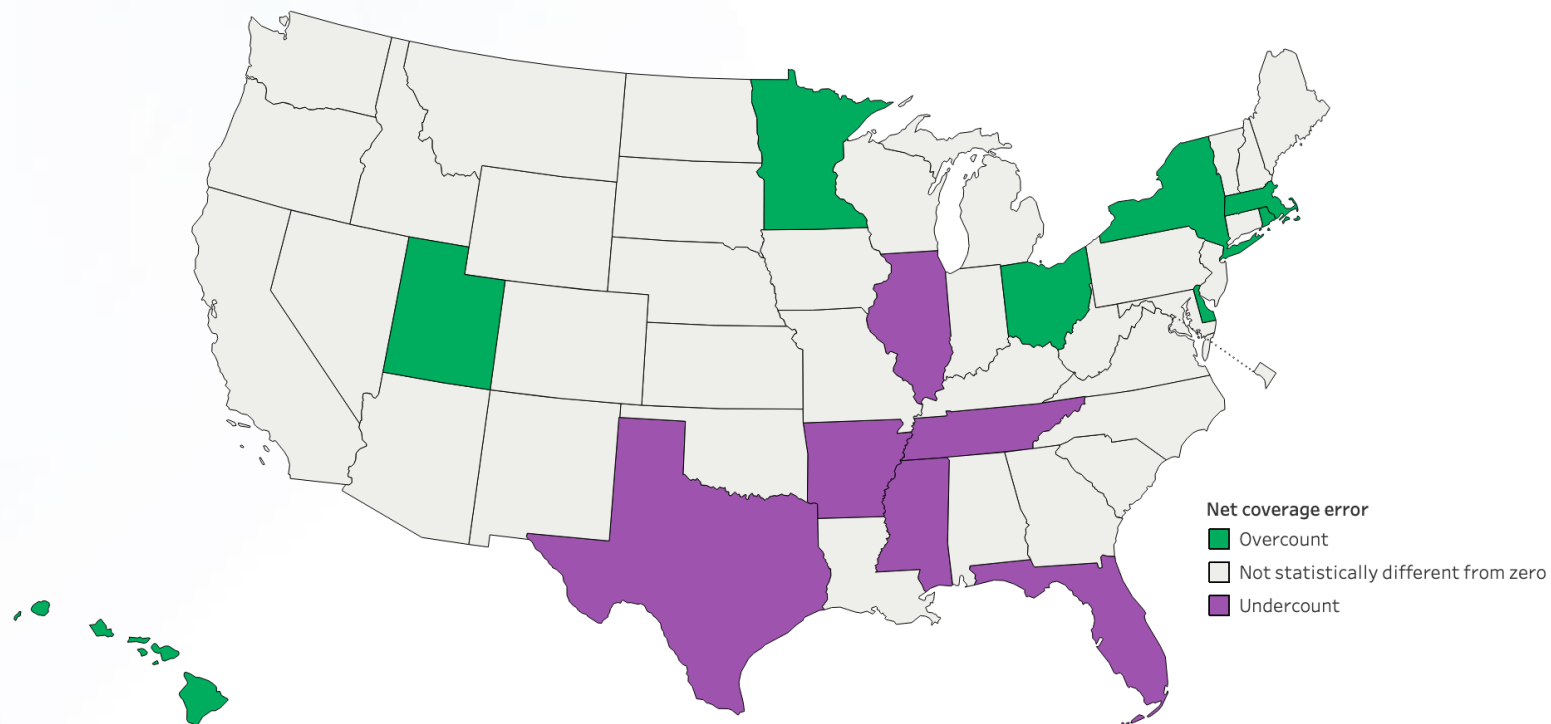
Year	Percentage of people with imputed characteristics (percent)						Percent with at least one imputed characteristics (percent)
	Relationship	Age	Sex	Race	Hispanic origin	Tenure	
2020	1.9	11.4	1.7	5.8	3.7	3.7	15.7
2010	0.9	4.5	0.9	1.9	1.6	2.0	6.6

Imputation of Person Correct Enumeration Status for Net Coverage (Unweighted)

	2020	2010
Total E-sample enumerations	397,000	384,000
Known correct enumeration status	351,000	365,000
Missing correct enumeration status	46,000	18,500
Unresolved enumeration (percent)	11.6	4.8

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Questions

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