

# The Undercount of Young Children in the Decennial Census

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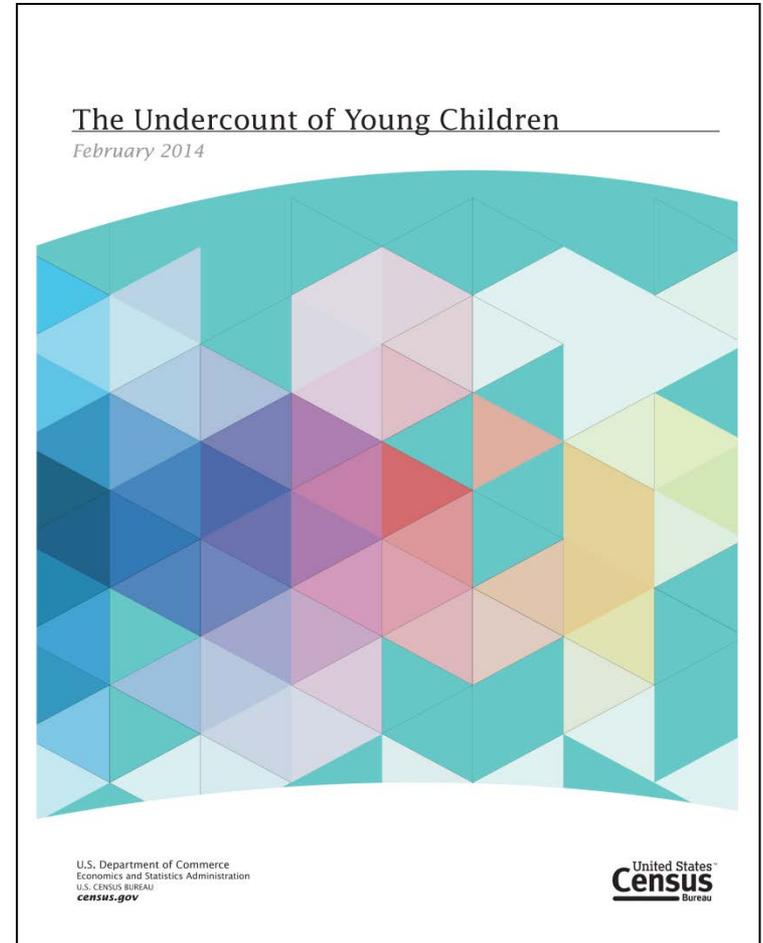
Presentation to the Census Information Centers  
Steering Committee

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# The Undercount of Young Children in the Decennial Census

## Introduction

- Persistent undercount of young children, ages 0 to 4, in the decennial census
- 4.6% net undercount in 2010, nearly 1 million young children
- Recent work on the issue at the Census Bureau
  - In 2013 a Census Bureau task force reviewed available information on the undercount of young children and produced a report with research recommendations
  - A team is currently conducting several research projects to try to answer key questions about why the census misses young children



# The Undercount of Young Children in the Decennial Census

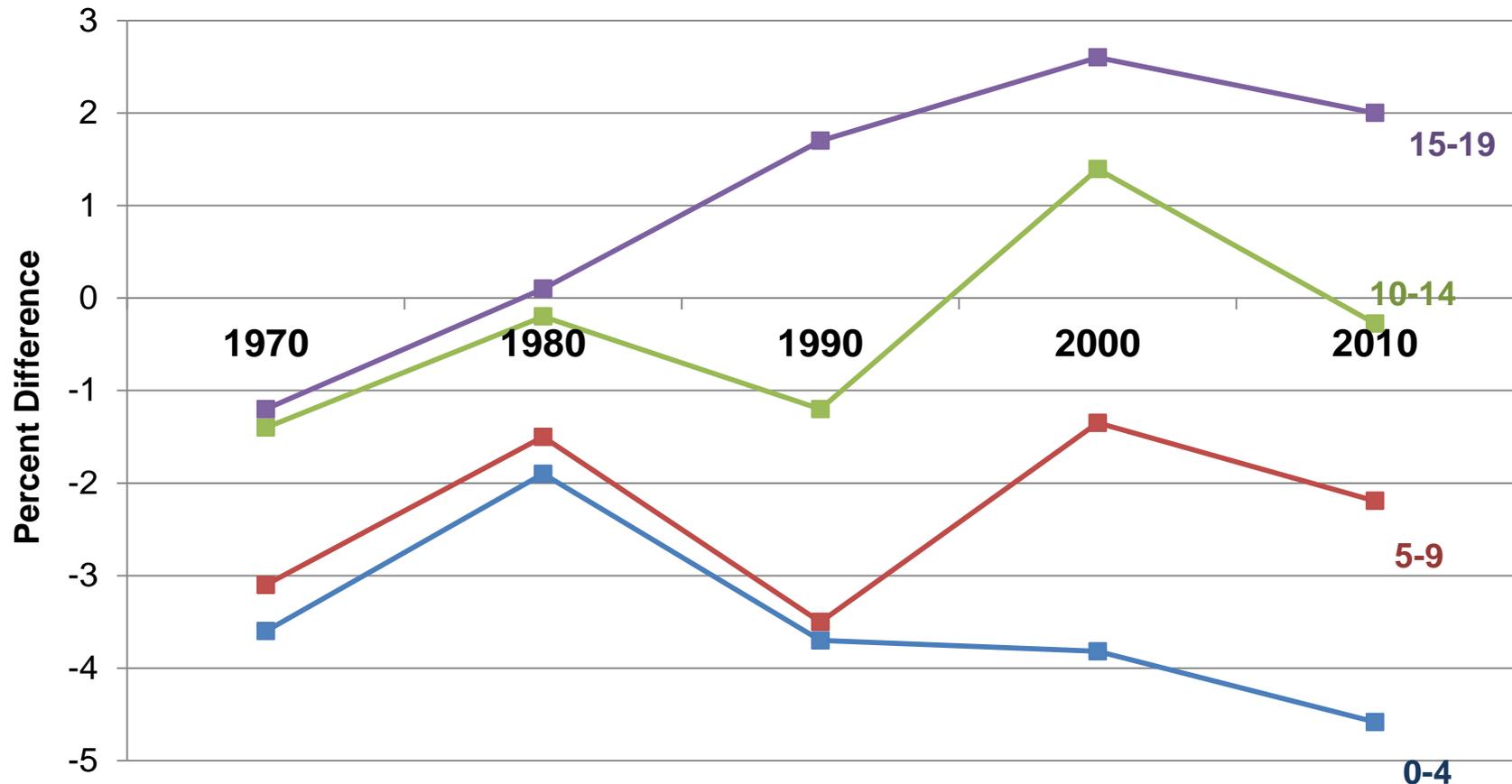
## Background

- 2010 Census coverage results from Demographic Analysis
  - Demographic Analysis estimated a net overcount of 0.1 percent for the total population in 2010
  - While adults were over counted, children under 18 had a 1.7 percent net undercount
  - Children under the age of 5 were especially likely to be missed in the 2010 Census, with a net undercount of 4.6 percent

# The Undercount of Young Children in the Decennial Census

## Background

- Net undercount estimates from Demographic Analysis 1970 to 2010



Source: 1970, 1980, 1990, 2000, and 2010 Census and Demographic Analysis.

# The Undercount of Young Children in the Decennial Census

## Background

- Net Coverage of young children by race and Hispanic origin – 2010 Census

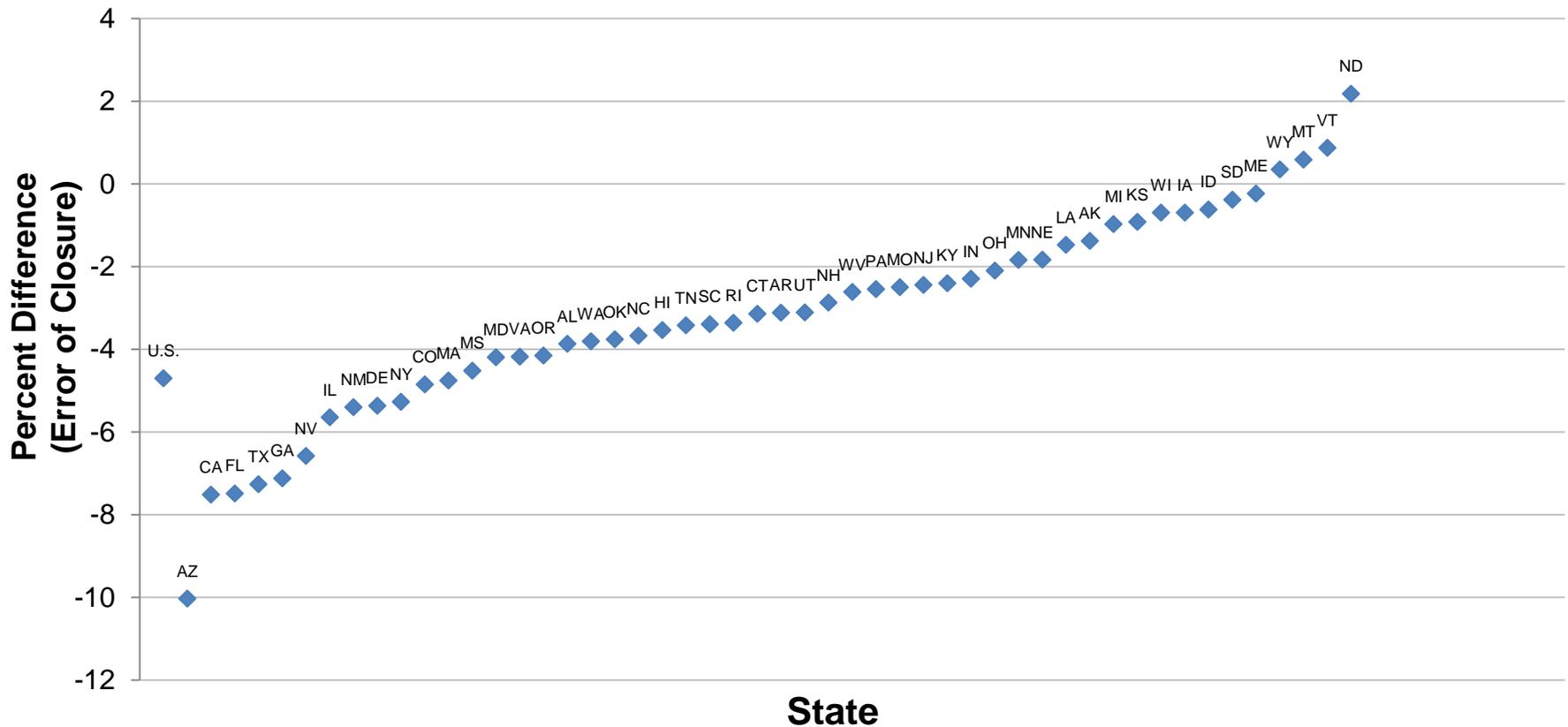
Race/Hispanic Origin	Net Coverage Error of Young Children
All Races	-4.6
Black alone or in combination	-6.3
Not Black alone or in combination	-4.2
Hispanic	-7.5
Non-Hispanic	-3.6

Source: O'Hare 2014, using 2010 Demographic Analysis Estimates

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## Background

- Percent difference between the census and vintage 2010 population estimate for young children by state



Source: 2010 Census and Vintage 2010 Population Estimates.

# The Undercount of Young Children in the Decennial Census

## Background

- Survey coverage ratios

Census Survey	Age Group			
	0-4	5-9	10-17	18+
American Community Survey (ACS)	0.89	0.97	0.98	0.95
Current Population Survey (CPS)	0.82	0.92	0.90	0.88
Survey of Income and Program Participation (SIPP)	0.80	0.88	0.86	0.86

Source: March 2009 Base Current Population Survey; Survey of Income and Program Participation; 2009 single-year American Community Survey, special tabulation

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## Background

- Census net undercount for young children in other countries

Country and Year	Net Undercount Age 0-4
Australia 2011	-1.2
Canada 2011	-3.4
England and Wales 2011	-9.6
South Africa 2011	-15.1
Japan 2000	-2.3
South Korea 2000	-3.6

Source: O'Hare 2015

# The Undercount of Young Children in the Decennial Census

## Background

- Importance of this issue
  - Commitment to a complete and accurate census
  - Goal: Once, only once, and in the right place
- Implications of the undercount
  - Political representation
  - Federal funding for programs including:
    - Temporary Assistance for Needy Families
    - Special education grants
    - Head Start
    - National School Lunch Program
  - School planning

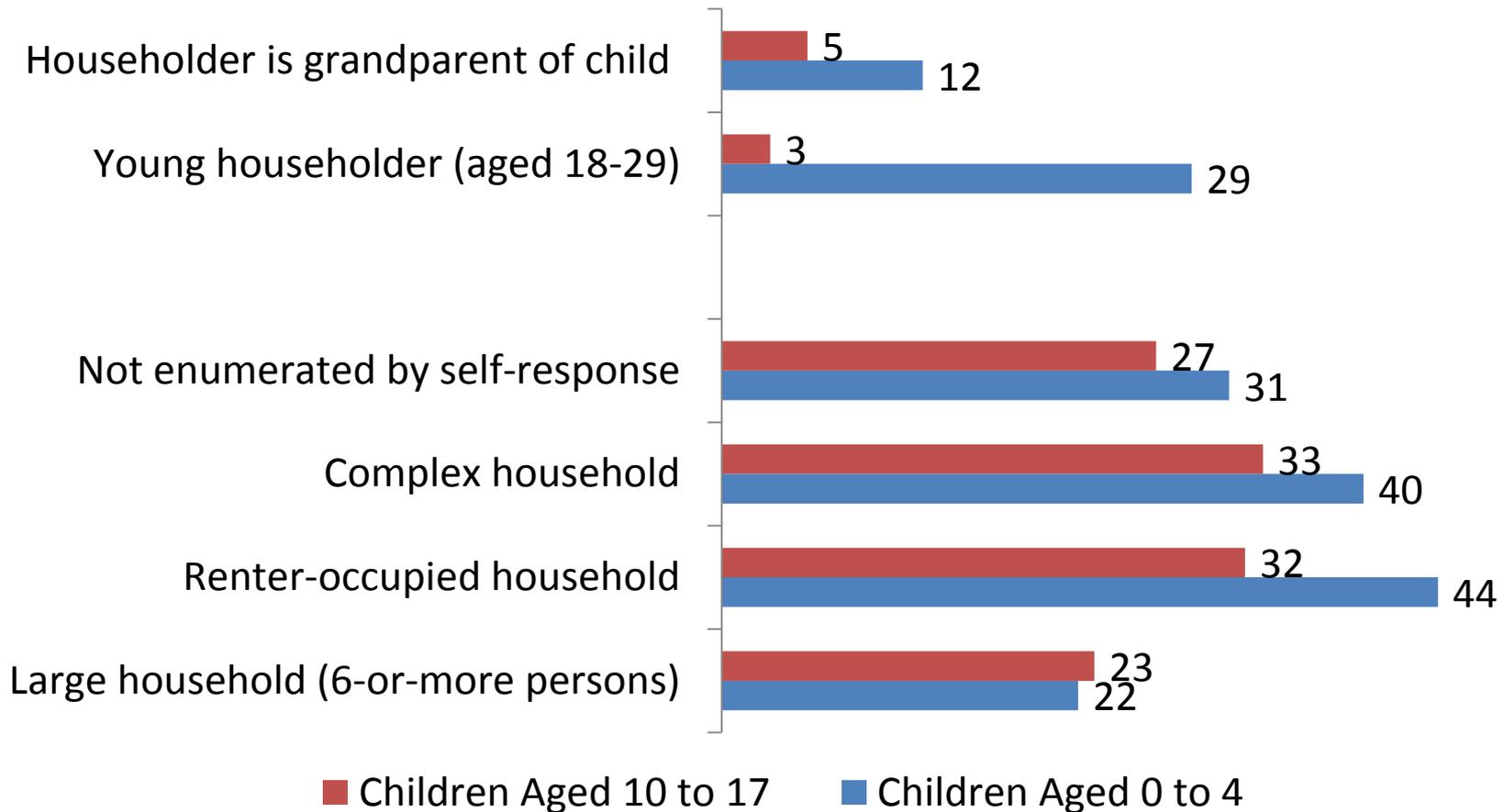
# The Undercount of Young Children in the Decennial Census

## Research Team Projects

- Research team conducting several investigations
  - Characteristics of young children vs. older children
    - 2010 Census
    - American Community Survey (ACS)
  - Estimating census omissions
  - Census Coverage Measurement (CCM)
  - Coverage Follow-up (CFU)
    - Young children added to the 2010 Census
    - Households responding positively to undercoverage probes
  - Coverage of young mothers
  - Complex household typology

# The Undercount of Young Children in the Decennial Census

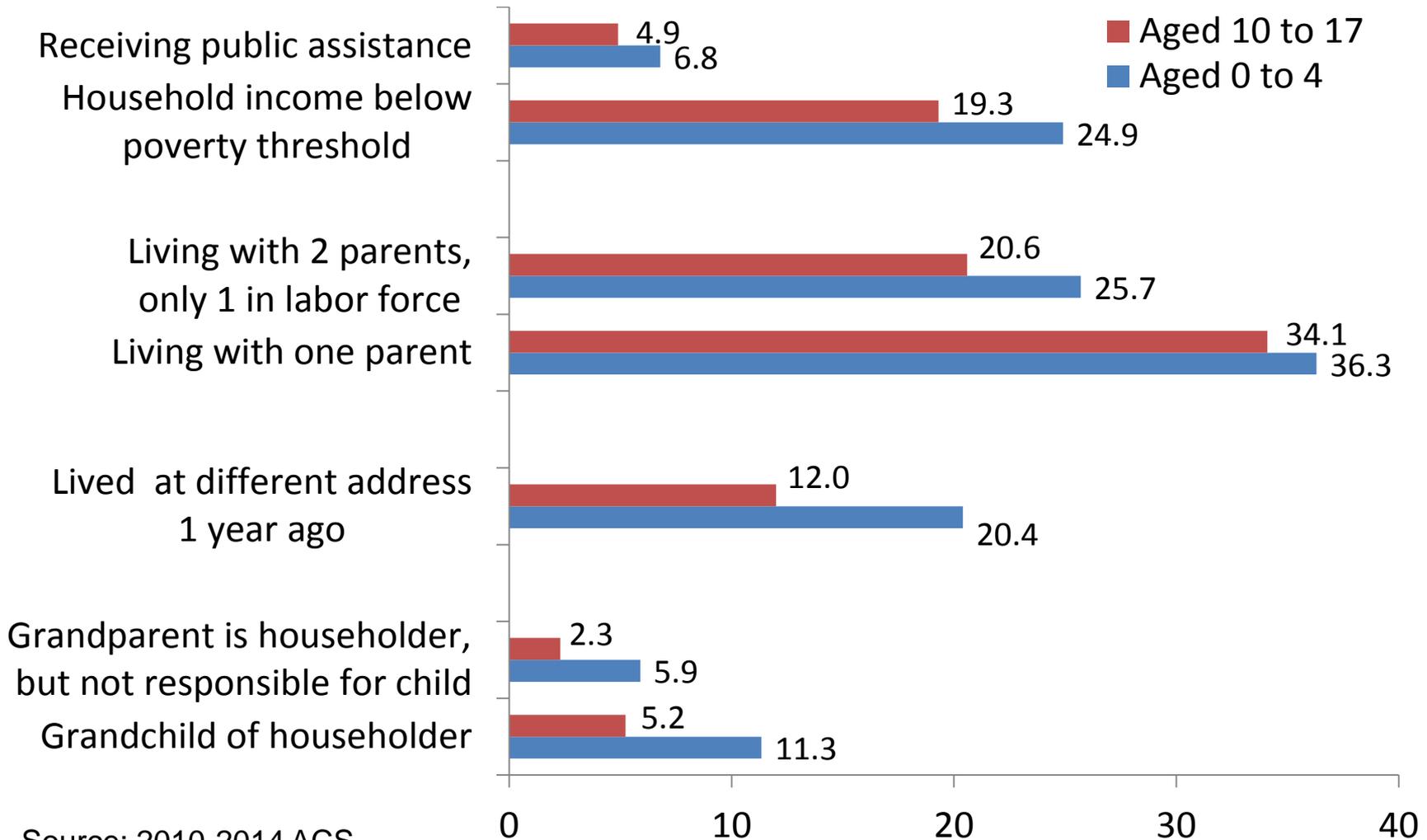
## Characteristics of Children: 2010 Census



Source: 2010 Census

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## Characteristics of children: ACS



Source: 2010-2014 ACS

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## Census Coverage Measurement

- CCM included an independent enumeration of a sample of blocks that was matched to the Census
- This project studies the characteristics of the children that did not match to the census. These nonmatches include:
  - Children that the census missed
  - Children that could not be matched due to incomplete data
  - Children enumerated in the census outside of the CCM search area
- This analysis provides individual-level data that helps us understand the characteristics associated with coverage errors

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## Census Coverage Measurement

- Nonmatch Rates for Young Children by Relationship to Householder

Relationship to Householder	Nonmatch Rate for Children 0-4	SE
Biological child	9.8	0.3
Adopted child	6.8	1.8
Stepchild	17.9	3.0
Grandchild	15.6	0.9
Other Relative	22.1	2.0
Unrelated child	24.5	2.7
<b>Total</b>	<b>11.1</b>	<b>0.3</b>

Source: 2010 Census Coverage Measurement

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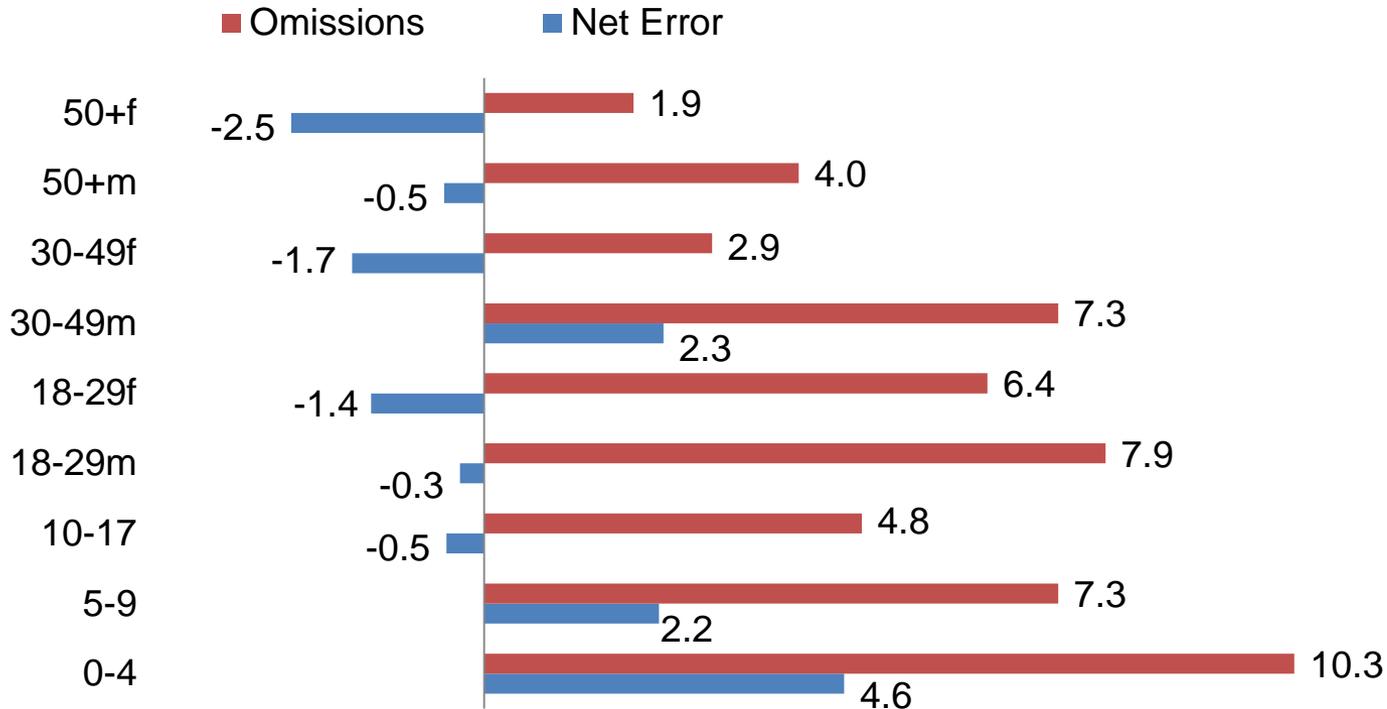
## Estimating Census Omissions

- DA estimates total population & *net* coverage error
- The CCM program estimates components of census coverage (correct and erroneous enumerations)
- We combined DA estimates of total population and CCM estimates of correct enumerations to estimate census omissions by age
- We also analyzed CCM data on whole person imputations and erroneous enumerations by age

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## Estimating Census Omissions

- Omission Rates and Net Coverage Error Rates by Age



Source: Revised 2010 DA Estimates (released May 2012) Middle series Tables 3, 4 & 5; 2010 Census Coverage Measurement estimates

# The Undercount of Young Children in the Decennial Census

## Census Coverage Followup

- The 2010 Census included a coverage followup (CFU) operation to improve the accuracy of the list of rostered household members
- CFU resulted in the addition of about 55,000 young children
- This project profiles the characteristics of the CFU-added young children
- A household could be eligible for CFU for various reasons, including responding positively to the undercoverage question (shown below), being a large household, or having a discrepancy between the respondent-provided count and the number of listed people.

**2. Were there any additional people staying here April 1, 2010 that you did not include in Question 1?**  
Mark  all that apply.

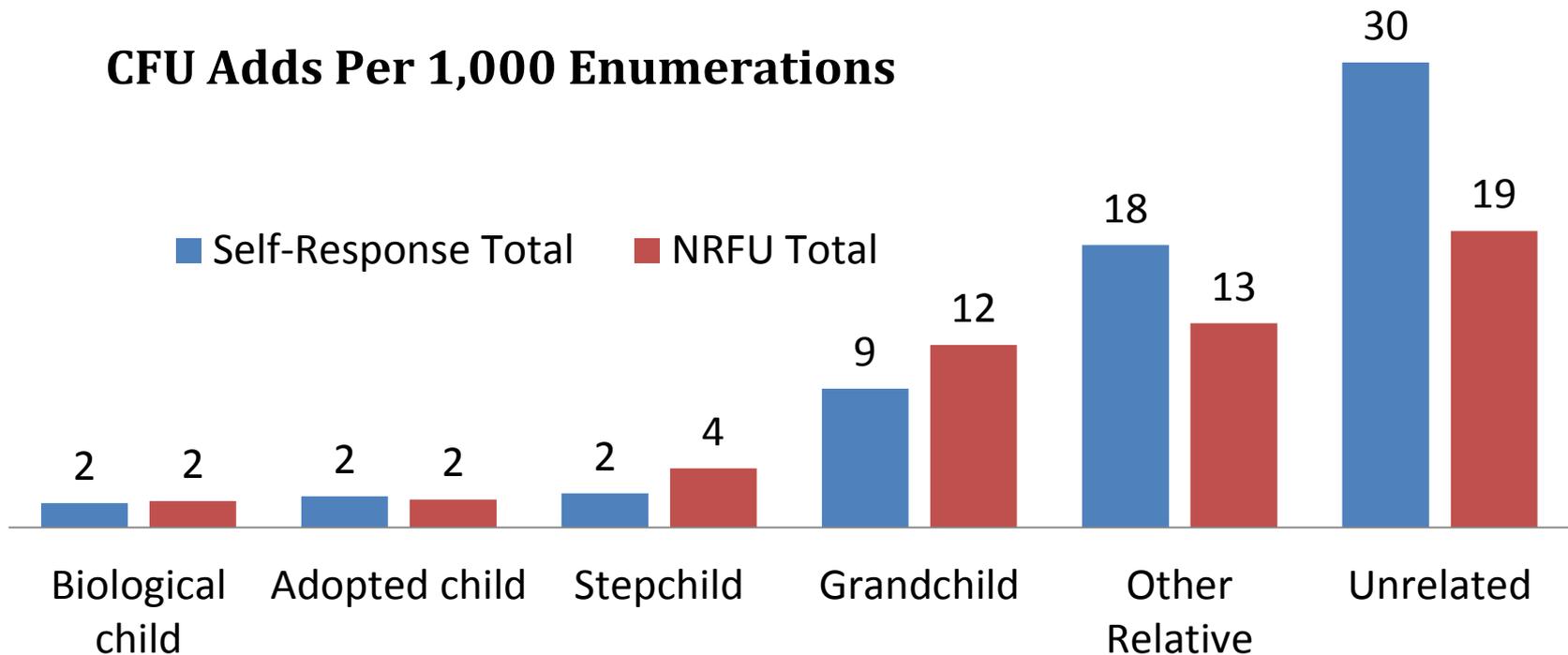
- Children, such as newborn babies or foster children
- Relatives, such as adult children, cousins, or in-laws
- Nonrelatives, such as roommates or live-in baby sitters
- People staying here temporarily
- No additional people

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## Census Coverage Followup

- 2010 Coverage Followup – Relationship of Added Young Children

### CFU Adds Per 1,000 Enumerations



Source: 2010 Census Coverage Followup

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## Undercoverage Probes

- Coverage Followup (CFU) was able to complete interviews with about 60% of eligible self-response households and 35% of eligible NRFU households
- For the remaining cases for which we could not complete an interview, potential coverage errors could not be corrected
- Further, many interviews that were completed in CFU did not result in a change to the household roster. The CFU interview was an independent interview and did not make reference to the possible coverage error.
- This project profiles the housing units and households that responded positively to one of the child-specific coverage probes, regardless of the CFU outcome.

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## Undercoverage Probes

- Summary of household characteristics with high positive-response rates to the child-specific undercount questions

Characteristic	Positive Responses Per 1,000 Enumerations
7-person households	24.9
6-person households	14.8
Two or more race householders	14.1
Some Other Race householders	13.4
Hispanic householders	12.4
5-person households	10.4
Complex households	10.2
Black householders	9.9
NHPI householders	9.8

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## Undercoverage Probes

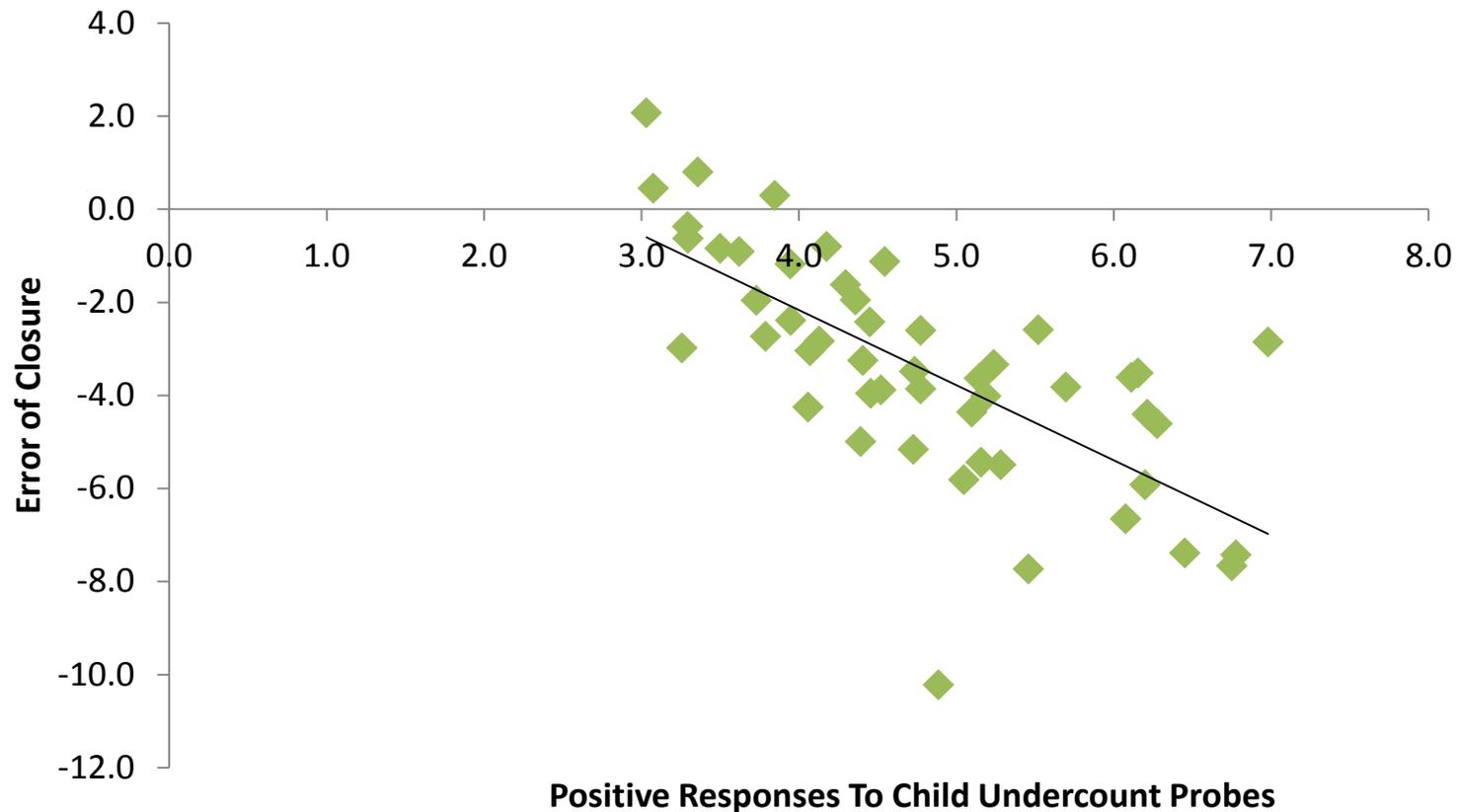
- Summary of states with high positive-response rates to the child-specific undercount questions

State	Positive-Responses Per 1,000 Households
Louisiana	7.0
Texas	6.8
California	6.8
Georgia	6.5
District of Columbia	6.4
Mississippi	6.3
Maryland	6.2
New York	6.2
South Carolina	6.2
Hawaii	6.1
Nevada	6.1

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## Undercoverage Probes

- State-Level Relationship of Error of Closure to Positive Responses to Child Undercount Probes



# The Undercount of Young Children in the Decennial Census

## Coverage of Young Mothers

- Background
  - Statistics Canada found that their census was more likely to exclude young children if the child's mother was young and unmarried
  - We wanted to explore the hypothesis that U.S. censuses and surveys miss young children because we also miss their young mothers
  - Compared estimates of births from vital statistics by maternal age with ACS estimates of women giving birth by age
- Findings
  - The ACS undercounts young mothers
  - Undercount exists for all race and Hispanic origin groups
  - Undercount exists for unmarried young mothers, who are the majority of young mothers

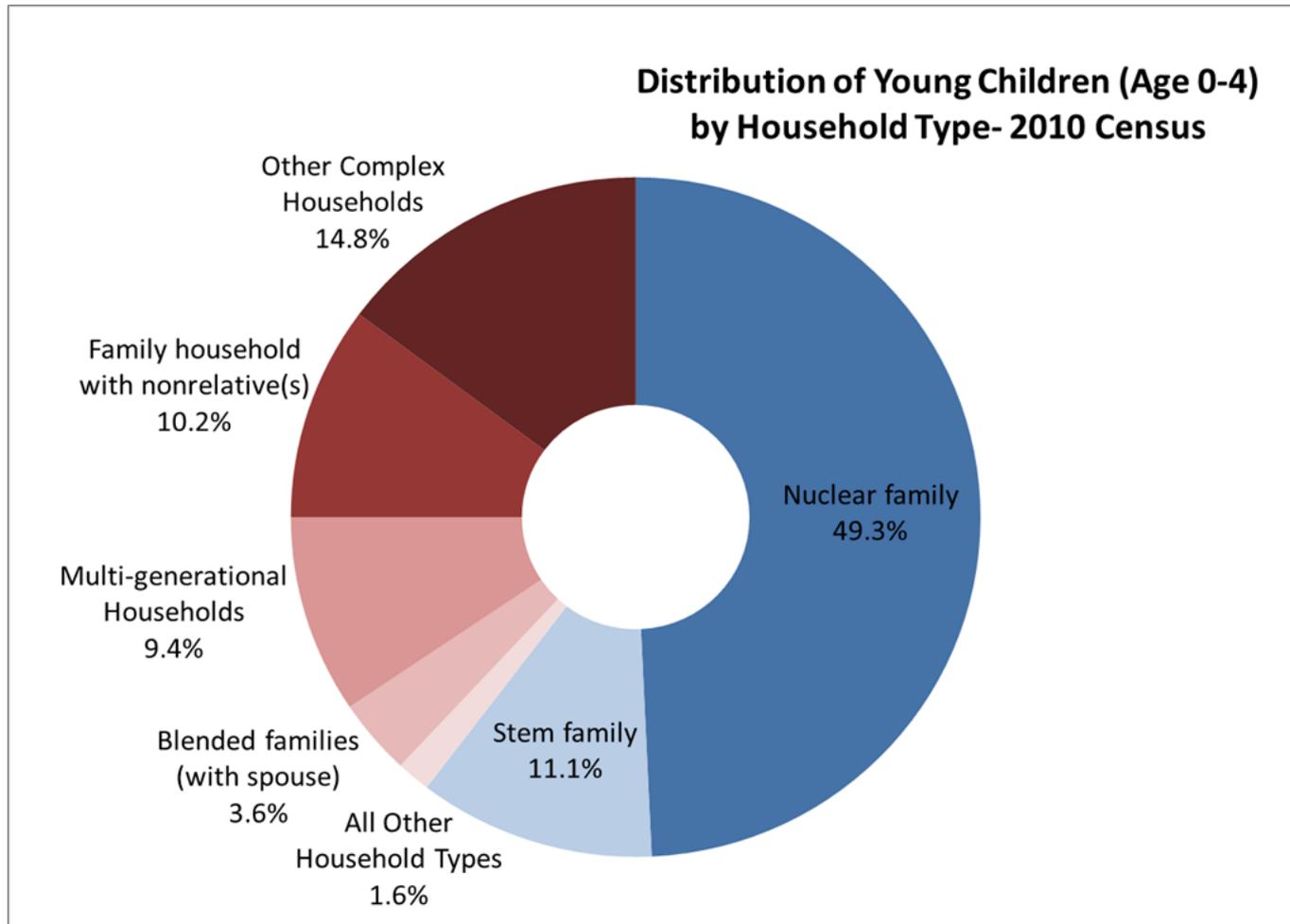
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## Complex Households

- Use data from the 2010 Census
- New household typology to classify wider range of living situations
- “Complex households” have more complicated structures (e.g., Blended families and multigenerational families)
- Provides a more detailed profile of the living situations of young children

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## Complex Households



Source: 2010 Census tabulation

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## Conclusions

- Research using existing data has helped frame the problem and identify characteristics of young children associated with coverage errors
  - Young children are more likely to be omitted from the census than persons in other age groups
  - Complex living situations of young children is a contributing factor
    - Evidence of more errors for young children living in complex households from CCM and CFU
    - Unrelated children, grandchildren and other related children more at risk of omission
  - Young children may be missed along with their young mothers
  - Compared to older children, a higher proportion of young children are associated with these and other hard-to-count characteristics

# The Undercount of Young Children in the Decennial Census

## Future Work

- Future work will need to provide answers to why we observe these results. Possibilities include
  - Experiments in current surveys
  - Ethnographic research
  - Vignette studies for residence rules
  - Administrative records research
- Potential opportunities for improvement in the 2020 Census
  - Work with communications contractor to focus advertising on key audiences, such as young mothers and grandparents
  - Updated wording to undercount probe and help text for 2017 Census Test specifically addresses young children and grandchildren
  - Automation allows collection of additional people from the undercount probe in real time

# The Undercount of Young Children in the Decennial Census

## Discussion

- Questions or comments?
- How can the CICs assist with addressing the undercount of young children?

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