

# Poverty Dynamics: An Overview of Longitudinal Poverty Estimates Produced by the United States Census Bureau

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# Longitudinal Poverty Estimates

- Useful in painting a comprehensive picture of economic well-being over a period of time
- Provide information on the dynamics of poverty over the course of a time period, such as:
  - Length of poverty spells
  - Frequency of poverty Spells
  - Probability of individuals' exiting or entering a poverty spell
- Can only be produced using data sources that track individuals' poverty status over time

# What is the Survey of Income and Program Participation (SIPP)?

- Nationally representative panel survey administered by the U.S. Census Bureau
- Each SIPP panel follows individuals for several years with respondents surveyed over time in successive interviews referred to as “waves”
- Provides monthly data on short-term dynamics of employment, income, household and family composition, and eligibility and participation in government assistance programs
- Compared to other longitudinal surveys in the US, SIPP is unique its large sample size and ability to follow individuals over multiple consecutive years

# Income Sources Collected by SIPP

Over 80 cash-income sources consisting of:

- Earnings
- Investment/property income
- Means-based transfer income
- Social insurance payments
- Other income, including retirement payments, child support payments, and life insurance payments

# How Poverty Status is Determined

- US Census Bureau calculates a set of annual income thresholds that vary by family size, family composition, and age of householder
- If a family's total pretax cash income is less than that family's poverty threshold, then that family and every individual in it are considered to be in poverty
- Poverty thresholds are updated annually to allow for changes in the cost of living using the Consumer Price Index (CPI-U).
  - They do not vary geographically

# Fluctuating Monthly Thresholds Allow for Longitudinal Poverty Measures

- Longitudinal structure of SIPP allows the capture of family dynamics and income that can fluctuate throughout the year
- Monthly family size and family members' ages are used to assign a poverty threshold which is then divided by 12 and adjusted for inflation to create a monthly poverty threshold
- Individual's varying monthly thresholds are summed to create their annual thresholds

# Annual Poverty

- Individual's annual poverty status is calculated by comparing the sum of their monthly family income over the year to the sum of their monthly poverty thresholds for the year
  - Sum of monthly poverty thresholds reflect the changing family composition over the year
  - Universe requires that individuals be in the survey all 12 months of the year
  - Weight from 12<sup>th</sup> month is used as the annual weight
  - Demographic characteristics are from the first month of the year

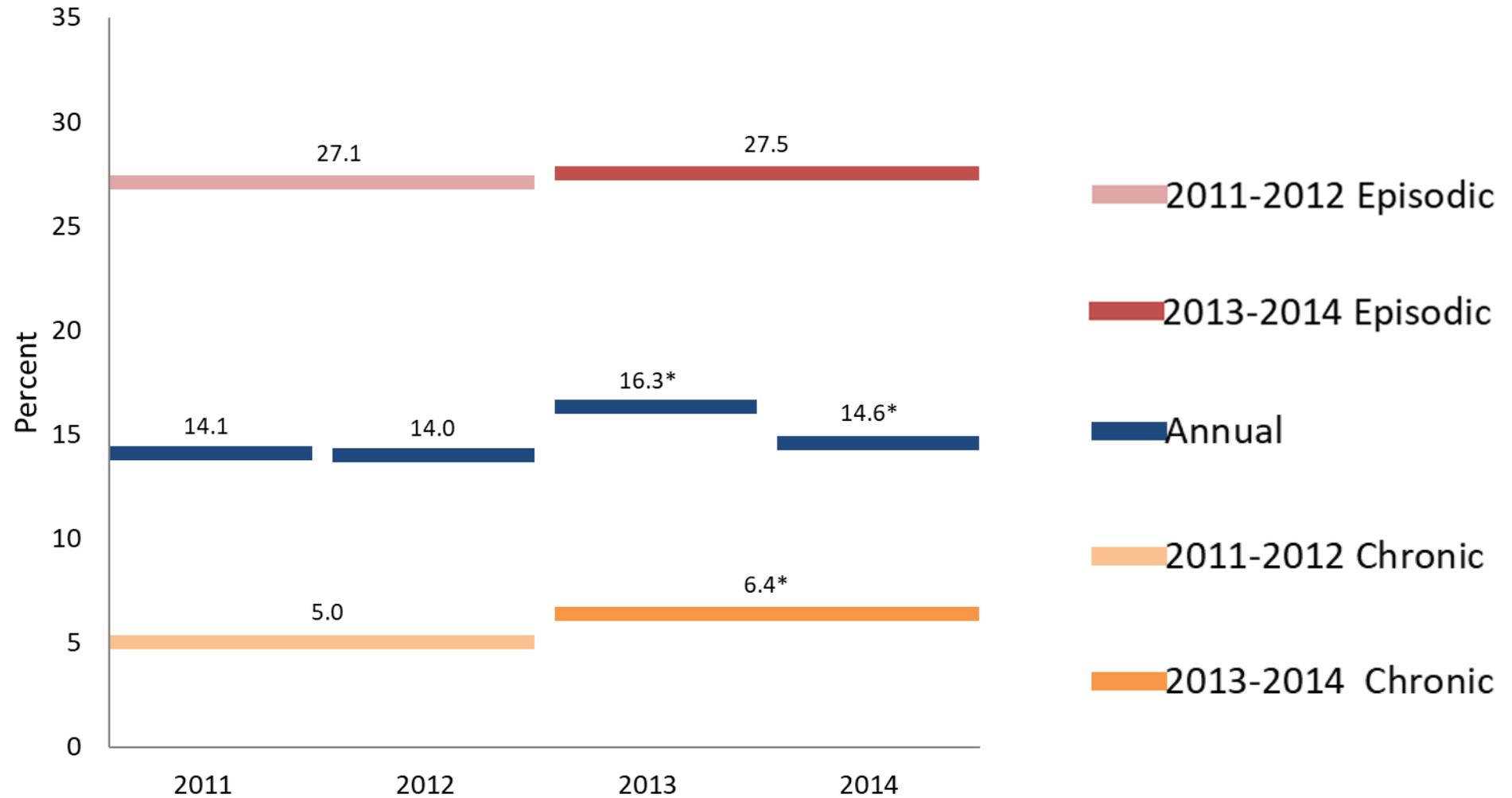
# Episodic Poverty

- Once an individual has two consecutive months in poverty in a reference period they are episodically poor
  - Universe requires that individuals be in the survey over the entire reference period
  - Estimates capturing people in poverty at any given time tend to capture individuals in chronic poverty, thus under-representing individuals that have short spells of poverty and over-representing individuals in chronic poverty
  - Demographic characteristics in the first month are kept constant throughout the reference period

# Chronic Poverty

- Chronic poverty rate provides the percent in poverty every month of a given reference period
  - Universe requires that individuals be in the survey over the entire reference period
  - Individuals experiencing chronic poverty are a subset of those experiencing episodic poverty
  - The percentage that are chronically poor within the episodically poor can provide insight on a group's ability to exit poverty
  - Demographic characteristics in the first month are kept constant throughout the reference period

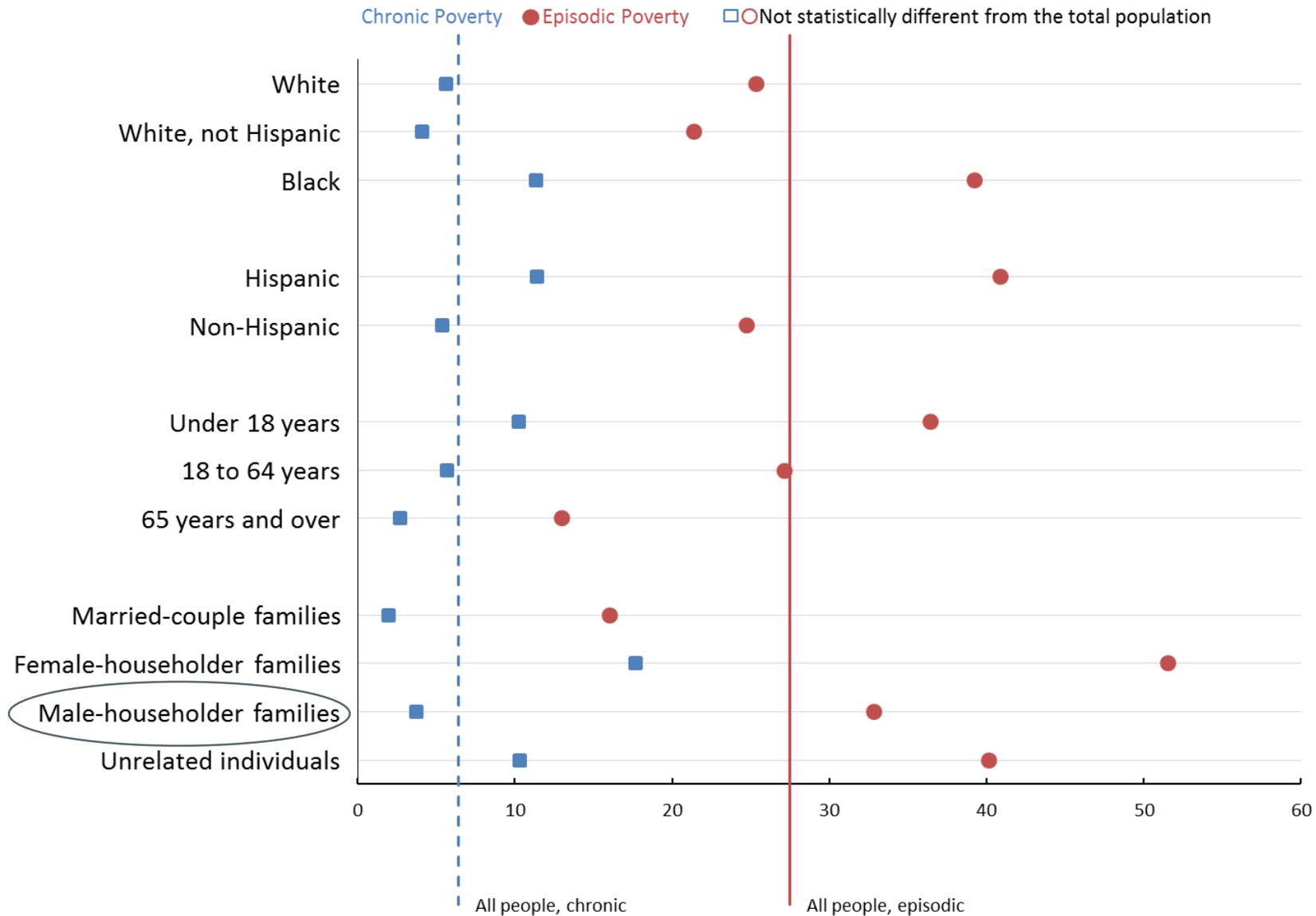
## Selected Poverty Rates: 2011 to 2014



Asterisk indicates a significant difference in percent in poverty from previous period

Source: U.S. Census Bureau, Survey of Income and Program Participation, 2008 Panel and 2014 Panel.

# Episodic and Chronic Poverty Across 2 Years (2013-2014)

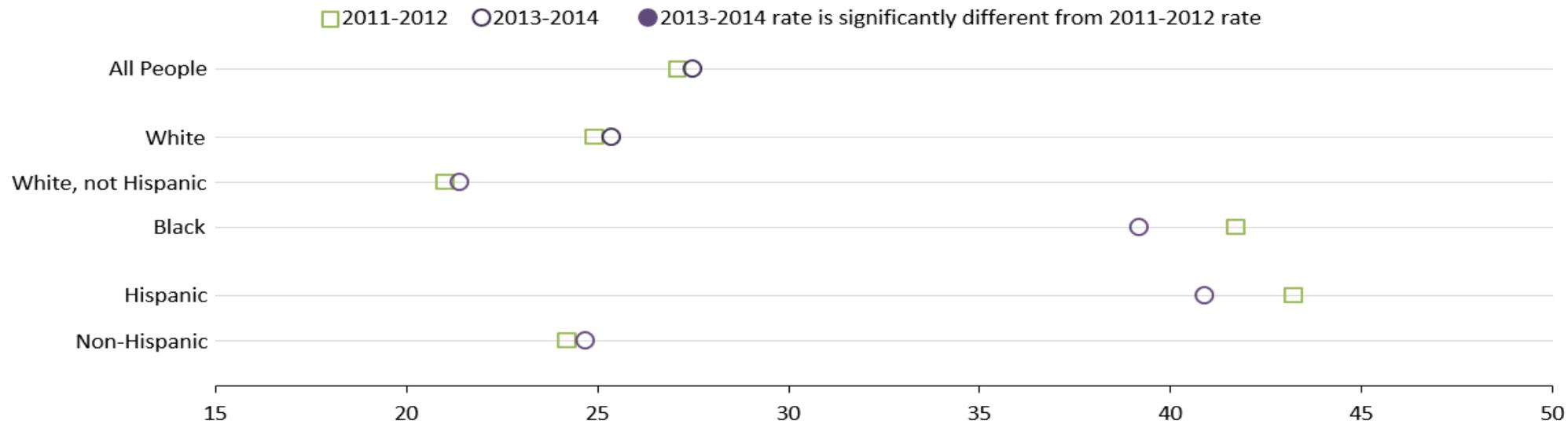


Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel.

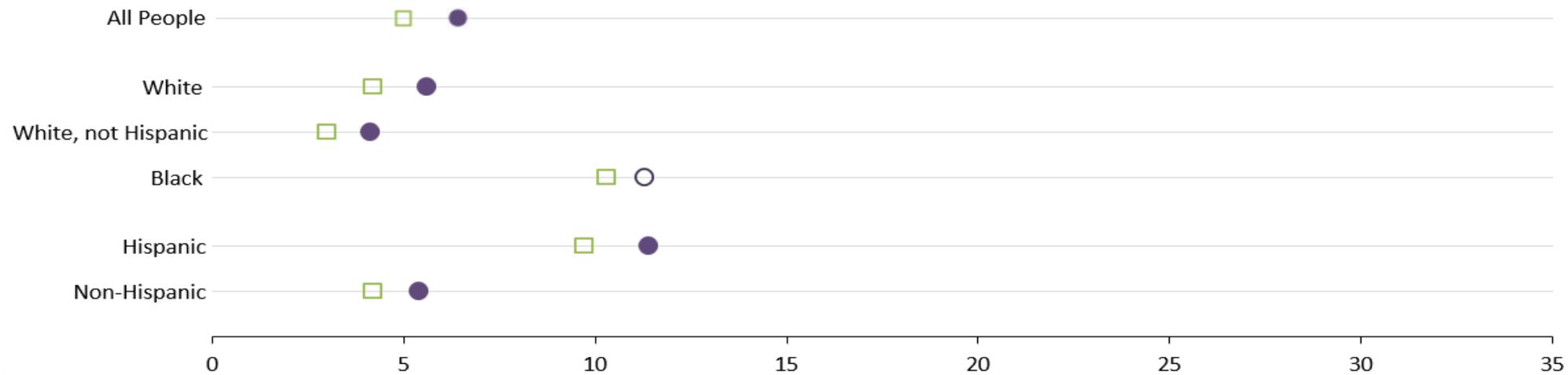
U.S. Department of Commerce  
U.S. CENSUS BUREAU  
[census.gov](http://census.gov)



## Episodic Poverty 2011-2012 and 2013-2014 Compared



## Chronic Poverty 2011-2012 and 2013-2014 Compared

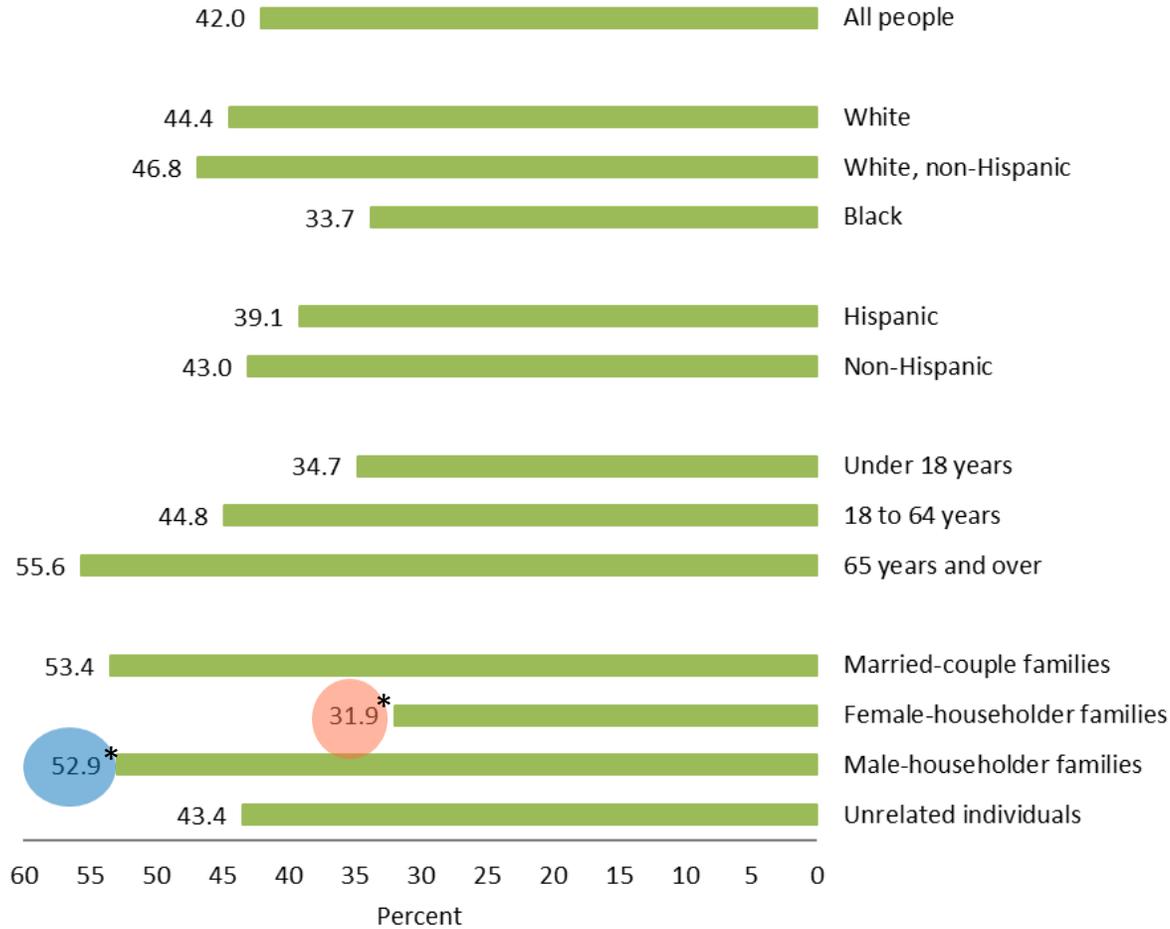


Source: U.S. Census Bureau, Survey of Income and Program Participation, 2014 Panel.

# Poverty Entry and Exit

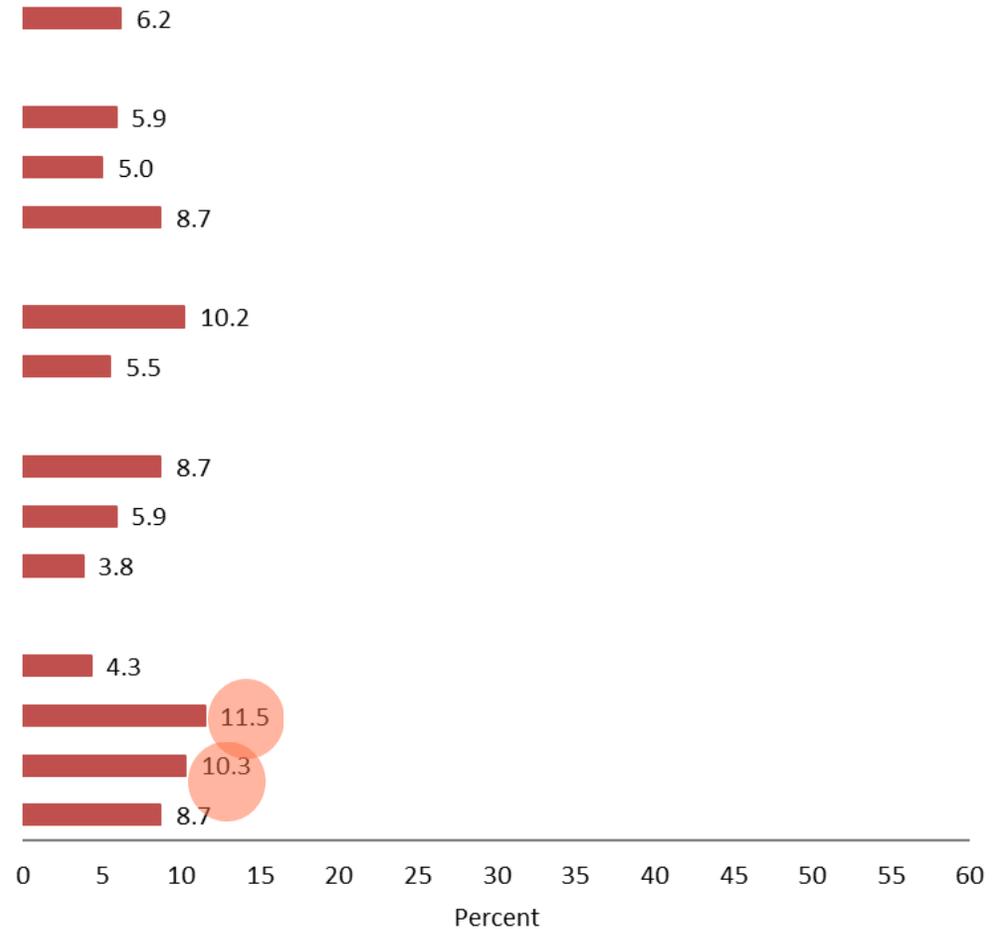
- The poverty entry rate represents the percent of individual who were not in poverty at the start of a reference period but are in poverty at the end of a reference period.
- The poverty exit rate represents the percent of individual who were in poverty at the start of a reference period but are not in poverty at the end of a reference period.
- Universe requires that individuals be in the survey over the entire reference period
- Demographic characteristics at the start of the reference period are kept constant throughout the reference period

Poverty Exit Rates: People in Poverty in 2013 but not in Poverty in 2014 by Selected Characteristics



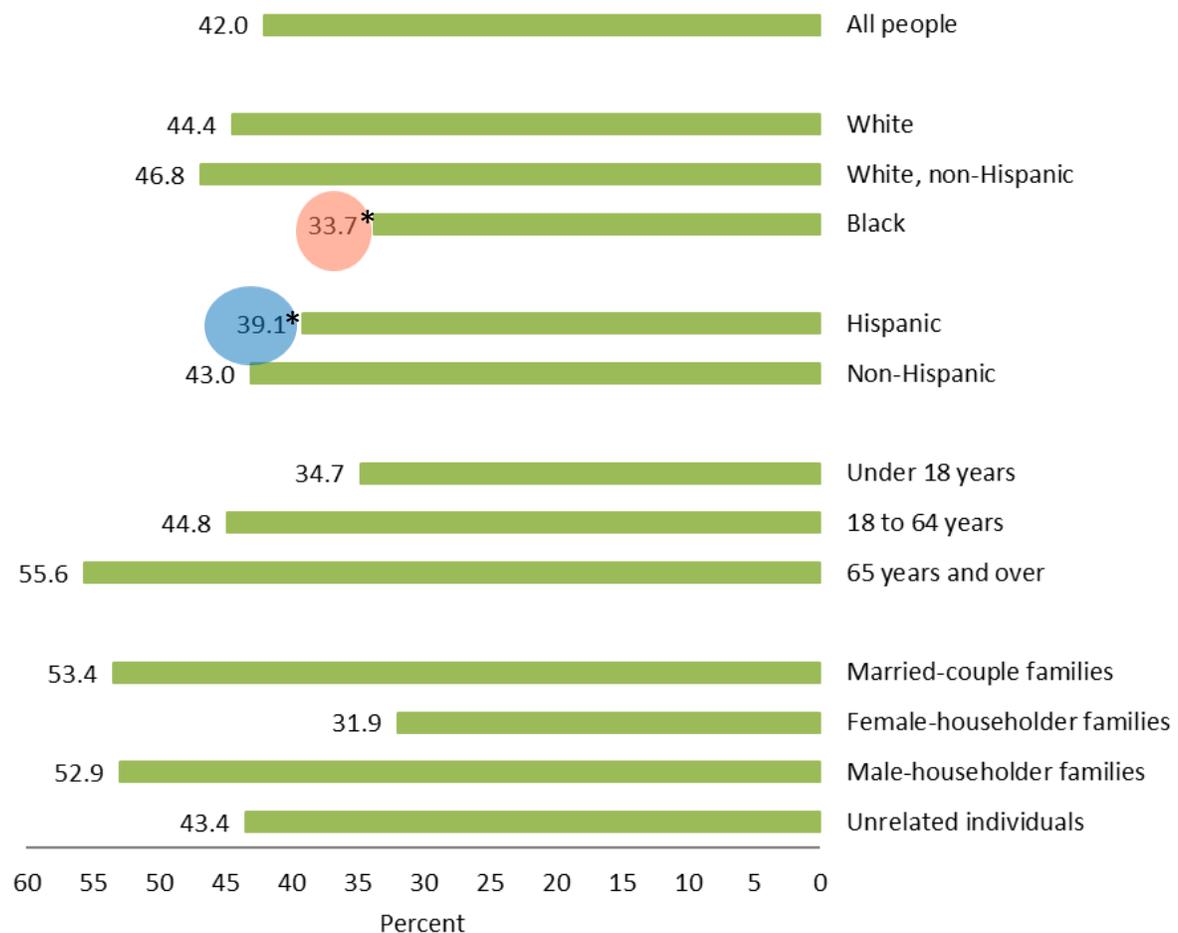
Asterisk indicates a significant difference between characteristics

Poverty Entry Rates: People Not in Poverty in 2013 but in Poverty in 2014 by Selected Characteristics

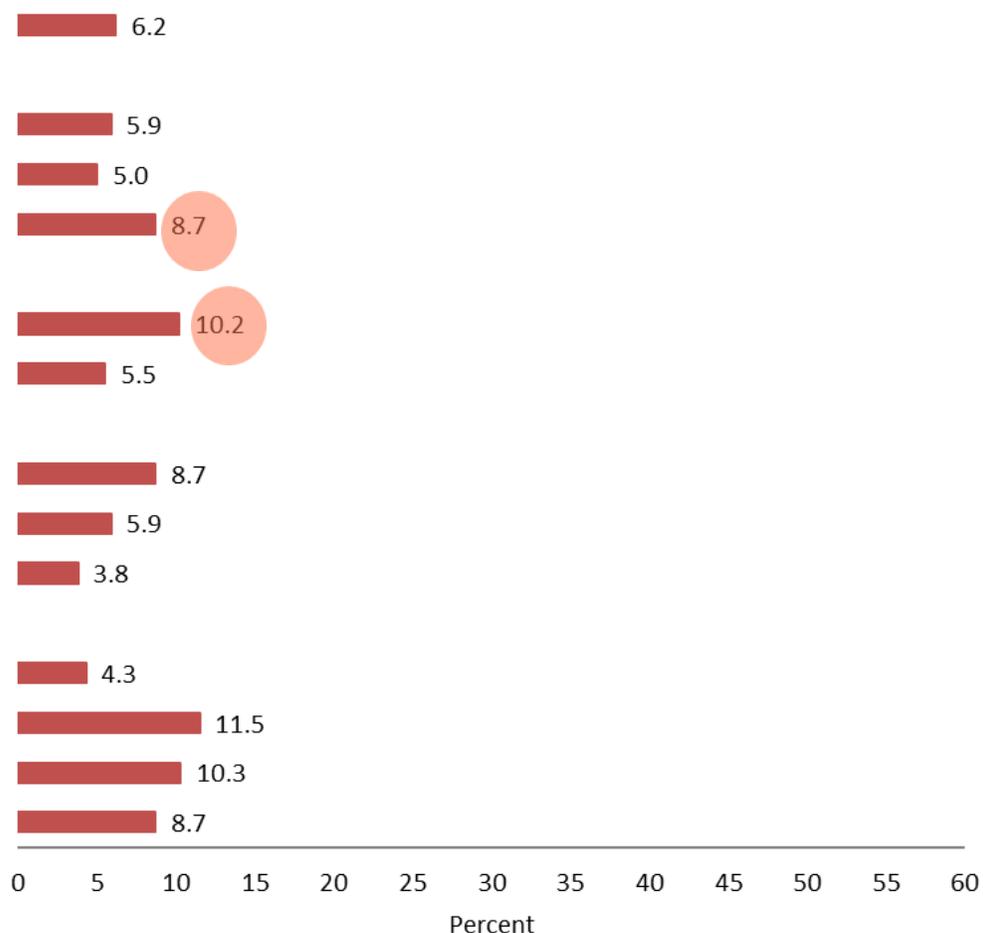


Source: U.S. Census Bureau, Survey of Income and Program Participation, 2008 Panel and 2014 Panel.

## Poverty Exit Rates: People in Poverty in 2013 but not in Poverty in 2014 by Selected Characteristics



## Poverty Entry Rates: People Not in Poverty in 2013 but in Poverty in 2014 by Selected Characteristics



Asterisk indicates a significant difference in percent in poverty from previous period

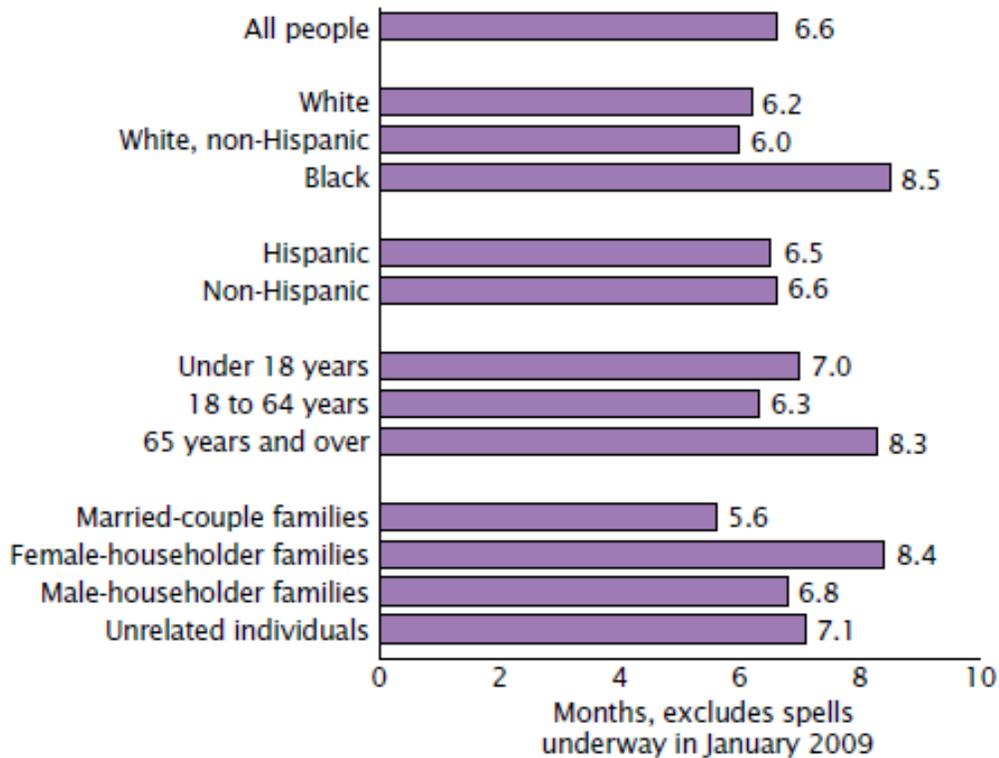
Source: U.S. Census Bureau, Survey of Income and Program Participation, 2008 Panel and 2014 Panel.

# Poverty Spells

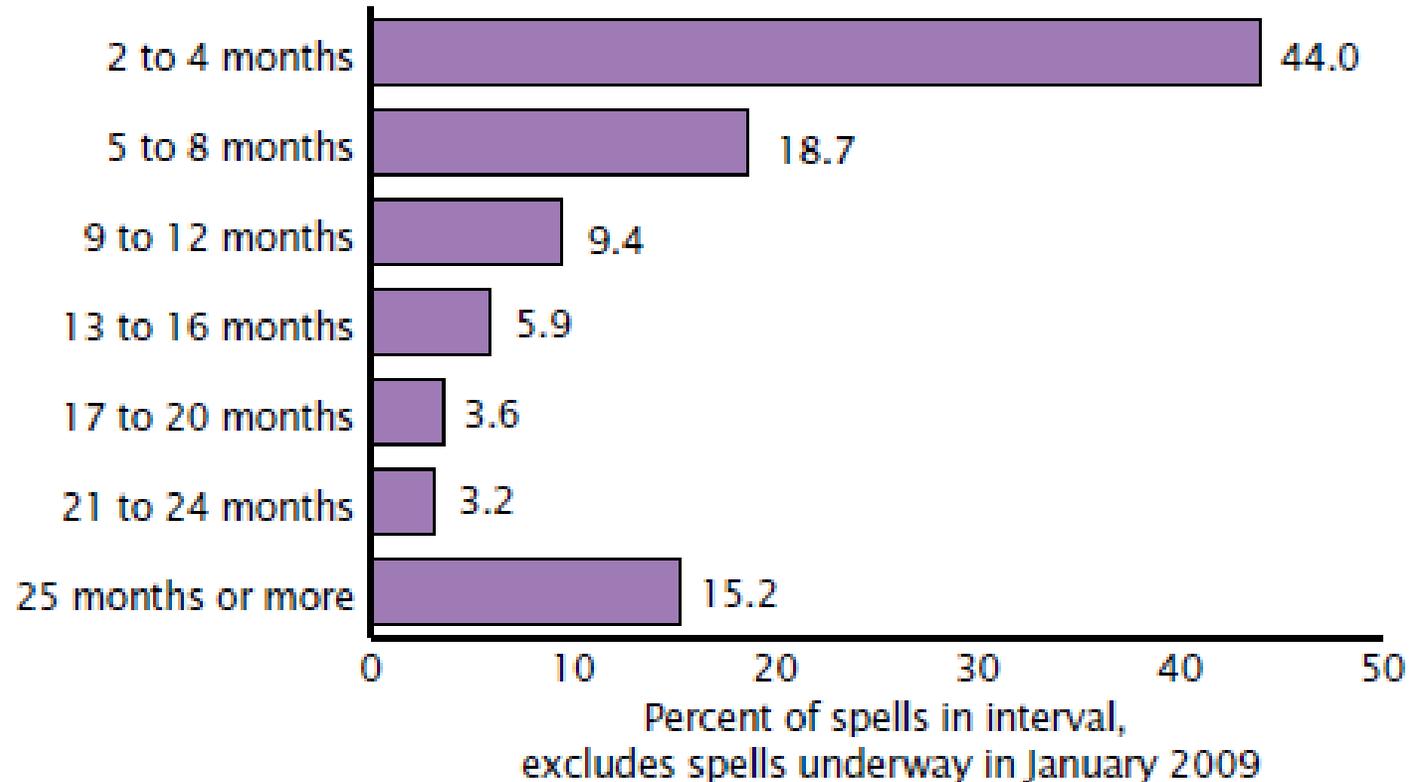
- Survival analysis can be used to analyze spell duration data to produce statistics such as median poverty spell length and poverty spell hazard rates
- Starts when an individual has 2 consecutive months in poverty
- Ends when an individual has 2 consecutive months out of poverty
- A single month out of poverty is not considered to be an exit out of a spell
- Individuals can have multiple poverty spells over a given reference period
- Left censoring and right censoring can be an issue, especially in smaller reference periods

# Examples of Poverty Spell Analysis

**Median Poverty Spells by Selected Characteristics: 2009 to 2011**



**Duration of Poverty Spells: 2009 to 2011**



Source: U.S. Census Bureau, Survey of Income and Program Participation, 2008 Panel.

# Any Questions or Comments?

Additional information about SIPP can be found at:

<https://www.census.gov/sipp/>

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