How Do We Calculate State-Level <u>Demographic Characteristics</u> of the PN-3 Population?

In 2019, children under three comprised 3.5% of the total US population and 15.8% of the total child population. The characteristics of families vary considerably by states and it is important for states to have a clear picture of the current demographic composition and characteristics of this population and their families. These include early signs of disadvantage from at-risk birth characteristics to access to sufficient family resources (both financial and geographic).

Total Births and At-Risk Birth Characteristics

Total Births - 2018

Definition: Total number of births in the last year and the percentage of births in each of four mutually exclusive race/ethnic groups

Source: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics. (n.d.). Natality public-use data 2016-2018, on CDC WONDER Online Database, September 2019 [Data Set]. Accessed at http://wonder.cdc.gov/natality-expanded-current.html on Jun 29, 2020.

Calculation Notes: Race/ethnic groups based on mother's race and ethnicity were calculated using the Hispanic origin and 6-race category variables provided in CDC WONDER. From these two variables, four mutually exclusive race/ethnic groups were created. If a birth was identified with a Hispanic mother, then the birth was grouped in Hispanic regardless of the race of the mother. Next, births were identified as those to black, non-Hispanic mothers, then white, non-Hispanic mothers. The fourth group was created from all other non-Hispanic mothers (American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, more than one race, or unknown/not stated). Births to mothers whose Hispanic origin was reported as unknown on the birth certificate were excluded from the percentages reported by race/ethnic group. CDC reporting rules require the suppression of sub-national counts of 9 or fewer births.[1]

Percent of births to unmarried mothers - 2018

Definition: Percent of births in the last year to mothers who are not married

Source: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics. (n.d.). Natality public-use data 2016-2018, on CDC WONDER Online Database,

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[1] Centers for Disease Control (CDC) National Center for Health Statistics (NCHS). (n.d.). *CDC WONDER Datasets - Data use restrictions.* As of February 10, 2020. Retrieved May 15, 2020 from https://wonder.cdc.gov/DataUse.html#

September 2019 [Data Set]. Accessed at http://wonder.cdc.gov/natality-expanded-current.html on June 18, 2020.

Calculation Notes: The sample was limited to births that were not missing birth certificate information on mother's marital status. The numerator includes all births to mothers whose marital status was reported as unmarried on the birth certificate. The denominator includes all births to mothers with known marital status reported on the birth certificate. CDC reporting rules require the suppression of sub-national counts of 9 or fewer births.[2]

Percent of births to low education mothers - 2018

Definition: Percent of births in the last year to mothers with less than a high school education
Source: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics. (n.d.). Natality public-use data 2016-2018, on CDC WONDER Online Database, September 2019 [Data Set]. Accessed at http://wonder.cdc.gov/natality-expanded-current.html on Jun 18, 2020.
Calculation Notes: The sample was limited to births that were not missing information on mother's highest education level at the time of birth. The numerator includes all births to mothers with less than a high school degree or high school degree equivalent at the time of the birth. The denominator includes all births to mothers with known education level at the time of the birth. CDC reporting rules require the suppression of sub-national counts of 9 or fewer births.[3]

Percent of births to teen mothers - 2018

Definition: Percent of births in the last year to mothers younger than 18
Source: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics. (n.d.). Natality public-use data 2016-2018, on CDC WONDER Online Database, September 2019 [Data Set]. Accessed at http://wonder.cdc.gov/natality-expanded-current.html on Jun 18, 2020.
Calculation Notes: The sample was limited to births that were not missing information on mother's age at the time of birth. The numerator includes all births to mothers younger than 18 at the time of birth. The denominator includes all births to mothers whose age was known at the time of birth. CDC reporting rules require the suppression of sub-national counts of 9 or fewer births.[4]

Percent of births that are Medicaid funded - 2018

Definition: Percent of births in the last year that were funded by Medicaid
Source: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics. (n.d.). Natality public-use data 2016-2018, on CDC WONDER Online Database,

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[2] Ibid.

[3] Ibid.

[4] Ibid.

September 2019 [Data Set]. Accessed at http://wonder.cdc.gov/natality-expanded-current.html on May 18, 2020.

Calculation Notes: The sample was limited to births that were not missing information on the source of payment for delivery. The numerator includes all births in which the payment source was reported as "Medicaid". The denominator includes all births in which the payment source for the delivery was known. CDC reporting rules require the suppression of sub-national counts of 9 or fewer births.[5]

Prenatal-to-3 Population

Number of children under age 3

Definition: Number of children under age 3 and the percentage of children under 3 in each of four mutually exclusive race/ethnic categories

Source: U.S. Census Bureau, Population Division. (2020). *Annual state resident population estimates for 6 race groups (5 race alone groups and two or more races) by age, sex, and Hispanic origin: April 1, 2010 to July 1, 2019* – sc-est2019-alldata6.csv [Data Set]. Retrieved June 30, 2020 from https://www.census.gov/data/tables/time-series/demo/popest/2010s-state-detail.html

Calculation Notes: Census Population Estimates are based on the most recently available decennial census (currently the 2010 census) and are adjusted each year using a cohort-component method. This method takes the population base (e.g., 2010 census) and accounts for subsequent births, deaths, and net migration (domestic and international) to create estimated population counts by various characteristics (e.g., age, sex, and race) and for specific geographies (e.g., state, county) as of July 1 of the vintage year.[6] Our demographic calculations are based on the 2019 vintage census population estimates. Race/ethnic groups were calculated using the Hispanic/non-Hispanic and 6-race category information provided in the Census Population Estimates. From these two indicators, four mutually exclusive race/ethnic groups were created. If a child was identified as Hispanic, then they were grouped in Hispanic regardless of their race. Next, children were identified as black, non-Hispanic, then white, non-Hispanic. The fourth group was created from all other non-Hispanic children (American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, more than one race, or unknown/not stated).

Percent of children under 3 at various poverty levels

Definition: Percent of children under 3 living in families below various federal poverty level (FPL) cutoffs: deep poverty (< 50% FPL) in poverty (< 100% FPL), and near poverty (< 150% FPL).

Source: U. S. Census Bureau. (2019). *2018 American Community Survey (ACS) 1-Year Public Use Microdata Sample (PUMS)* [Data Set]. https://www.census.gov/programs-surveys/acs/data/pums.html

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[5] Ibid.

[6] U.S. Census. (2020). Methodology for the United States population estimates: Vintage 2019, version 2. As of March 2020. Retrieved June 30, 2020 from https://www2.census.gov/programs-surveys/popest/technical-documentation/methodology/2010-2019/natstcopr-methv2.pdf

Notes: The sample was limited to children under age 3 living in a household in which they are related to the household head and have valid poverty data. Children living in group quarters or who were unrelated to the head of household (e.g., foster children or children of unmarried cohabiters) were excluded from the sample. The poverty threshold uses the U.S. Census calculation of poverty and is based on the total income of all individuals aged 15 or older who are related to the head of household through marriage, birth or adoption. Income from cohabiting partners who are not married and unrelated children (including foster children) are not included in the calculation of family income. This family income is compared to federal poverty thresholds based on related family size and composition.[7]

Three poverty groups were created: those living in deep poverty (< 50% of the FPL), those living in poverty (< 100% FPL), and those living near poverty (< 150% FPL).

All estimates were calculated in Stata 16 using both ACS person-level weights, to provide national and state representative estimates, and replicate weights to appropriately adjust standard errors to account for any sampling bias. The U.S. Census Bureau recommends using a 90% confidence interval for evaluating the accuracy of estimates using ACS data.[8]

For those in deep poverty (< 50% FPL): Three states (the District of Columbia, North Dakota, and Rhode Island) had estimates with confidence interval widths that were larger than the recommended 10% margin of error, with over criteria confidence intervals ranging from 11.9% to 16.0%.

For those in poverty (< 100% FPL): Four states (Delaware, the District of Columbia, North Dakota, and Rhode Island) had estimates with confidence interval widths that were larger than the recommended 10% margin of error, with over criteria confidence intervals ranging from 11.6% to 16.0%.

For those near poverty (< 150% FPL): Ten states (Alaska, Delaware, the District of Columbia, Montana, North Dakota, Rhode Island, South Dakota, Vermont, West Virginia, and Wyoming) had estimates with confidence interval widths that were larger than the recommended 10% margin of error, with over criteria confidence intervals ranging from 10.8% to 16.0%.

Percent of children living in metro or non-metro areas
   Definition: Percentage of children under 3 living in metro or non-metro areas
   Sources:
   1. U. S. Census Bureau. (2019). *2018 American Community Survey (ACS) 1-Year Public Use Microdata Sample (PUMS)* [Data Set]. https://www.census.gov/programs-surveys/acs/data/pums.html

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[7] U.S. Census Bureau (n.d.). *How the Census Bureau measures poverty*. Revised August 27, 2019. Retrieved on April 28, 2020 from https://www.census.gov/topics/income-poverty/poverty/guidance/poverty-measures.html
[8] Appendix 3 "Measures of Sampling Error" in U.S. Census Bureau (2008). *A compass for understanding and using American Community Survey data: What general data users need to know*. U.S. Government Printing Office, Washington, DC.

2. American Community Survey 2018 1-Year Estimates. Ruggles, S., Flood, S., Goeken, R., Grover, J., Meyer, E., Pacas, J., & Sobek, M (2020). *IPUMS USA: Version 10.0* [Data Set]. Minneapolis, MN: IPUMS, 2020. https://doi.org/10.18128/D010.V10.0

Calculation Notes: The sample was limited to children under 3 whose household geographic location could be categorized as either metropolitan (urban) or non-metropolitan (rural). We used the metropolitan/non-metropolitan geographic status indicator calculated and included in the University of Minnesota's 2018 ACS Integrated Public Use Microdata Sample (IPUMS) and each child under 3 in the ACS PUMS data was linked with their household's metro status from IPUMS. The IPUMS USA's metro status indicator identifies whether a household lives in a metropolitan area based on Public-Use Microdata Areas (or PUMAs) and the Office of Management and Budget's 2013 definition of principal cities. Areas that could not be fully identified as falling in a metropolitan area were considered indeterminate and households in those geographies were excluded from the analysis.[9] All estimates were calculated in Stata 16 using ACS person-level weights, to provide national and state representative estimates.

Median family income

Definition: Median family income for children under 3
Sources:

1. U. S. Census Bureau. (2019). *2018 American Community Survey (ACS) 1-Year Public Use Microdata Sample (PUMS)* [Data Set]. https://www.census.gov/programs-surveys/acs/data/pums.html

2. American Community Survey 2018 1-Year Estimates. Ruggles, S., Flood, S., Goeken, R., Grover, J., Meyer, E., Pacas, J., & Sobek, M (2020). *IPUMS USA: Version 10.0* [Data Set]. Minneapolis, MN: IPUMS, 2020. https://doi.org/10.18128/D010.V10.0

Calculation Notes: The median family income for children under 3 was calculated using the family income variable (*fincp*) available in PUMS and adjusted using the U.S. Census provided adjustment factor (*adjinc*) to adjust income values to 2018 dollars.[10] To verify that all parent income was included in the family income calculation, including cohabiting, unmarried parent income, we linked each child under 3 in PUMS with their record in the 2018 ACS IPUMS data to incorporate the variables identifying resident parents available in IPUMS *(momloc, momloc2, poploc*, and *poploc2*).[11] Children who did not live with either parent but with other family members (e.g., grandparents or siblings) were included. Children who lived in group quarters or who were unrelated to the household head (e.g., foster children) were excluded from the analysis. All estimates were calculated in Stata 16 using ACS person-level weights, to provide national and state representative estimates.

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[9] Minnesota Population Center, University of Minnesota, IPUMS USA. (n.d.). *Metropolitan status – Description and comparability*. Retrieved on June 30, 2020 from https://usa.ipums.org/usa-action/variables/METRO#description_section
[10] U.S. Census Bureau, American Community Survey Office. (2019). *American Community Survey 2018 ACS 1-Year PUMS files ReadMe.* As of November 14, 2019. Retrieved May 15, 2020 from https://www2.census.gov/programs-surveys/acs/tech_docs/pums/ACS2018_PUMS_README.pdf?
[11] See https://usa.ipums.org/usa/chapter5/NewfamilyinterrelationshipvariablesinIPUMSUSA.shtml for a thorough description of how IPUMS determines the location of parents in the household.