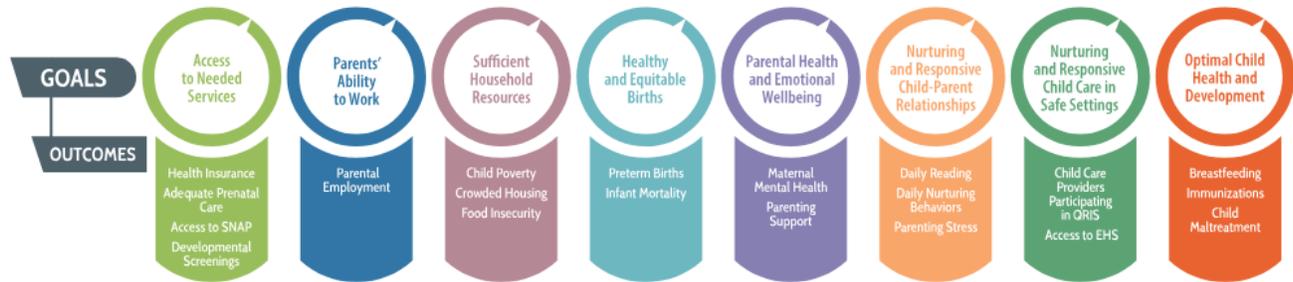


2023 Prenatal-to-3 State Policy Roadmap

Methods and Sources

How Do We Calculate State-Level Indicators of Child and Family Wellbeing?



Outcomes Measure Progress Toward Policy Goals

Based on the science of the developing child, we have identified **20 outcome measures** to track the overall health and wellbeing of infants and toddlers and their parents. Each outcome is aligned with a prenatal-to-3 (PN-3) policy goal and illustrates states' success in meeting that goal or indicates where a state is lagging. In this document, the information for the source data and calculation parameters for each outcome is organized by the PN-3 policy goal with which it is aligned.

All outcome measures were calculated intentionally in the negative direction to demonstrate where states have room for improvement and to help states prioritize the PN-3 goals that are lagging. Where the relative rank is reported, these state-level estimates were used to rank states from best (1) to worst (51), with higher estimates indicating poorer performance. Importantly, the best state on a given outcome does not necessarily indicate a target for all other states to strive toward; even in the states with the best outcomes, many children and families are struggling. Outcome estimates were rounded to one decimal point prior to ranking and states with the same rounded estimate were assigned the same rank. If multiple states had the same rank, the subsequently assigned rank value would reflect the duplicate ranks and skip values. For example, if two states were both assigned a rank value of 17, the next rank assigned would be 19. When states are assigned the same rank value, they are sorted alphabetically. The median state indicates that half of states have outcomes that measure better than that state and half of states have outcomes that are worse.

For all outcomes, estimates were based on the most recently available data through early June 2023. In a few cases, older data are used for the Roadmap outcome measures; in these cases, newer data were unavailable or there were quality concerns about newer data. Where applicable, notes on these cases are discussed within measures.

GOAL: ACCESS TO NEEDED SERVICES

Measure 1: % Low-Income Women Uninsured

Definition:

The percentage of low-income ($\leq 138\%$ of the federal poverty level) adult women of childbearing age (19 to 44) who report they do not have any health insurance coverage

Notes:

1. **Numerator:** The number of low-income ($\leq 138\%$ of the FPL) adult women of childbearing age who reported not having health insurance coverage during the prior calendar year
2. **Denominator:** The number of adult (age 19 to 44) women of known age and with known poverty status whose poverty threshold is at or below 138% of the federal poverty level (FPL)
3. The sample was limited to low-income adult women of childbearing age with known age and poverty status. For this particular measure, the sample was limited to women aged 19 to 44, as people aged 18 and under are eligible for Medicaid as a child and qualify for different Medicaid coverage once they turn 19. Women living in group quarters were excluded from the sample.
4. Race/ethnic groups were calculated using the Hispanic origin and race variables provided in the ACS. From these two variables, four mutually exclusive race/ethnic groups were created: White, non-Hispanic; Black, non-Hispanic; Hispanic; and Other. The "Other" category includes those who identified as "American Indian alone," "Alaskan Native alone," "American Indian and Alaskan Native tribes specified," "Asian alone," "Native Hawaiian and other Pacific Islander alone," "Some other race alone," or "2+ major race groups."
5. The poverty threshold uses the US 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 (*poovpip*).¹
6. All estimates were calculated in Stata 17 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. Given the age and poverty limits imposed on the sample (women age 19-44 with incomes $\leq 138\%$ of the federal poverty level) and the calculation of estimates by state, incorporating both population and sampling weights helps to account for exogenous sources of variance and improve the accuracy of estimates.
7. The US Census Bureau recommends using a 90% confidence interval for evaluating the accuracy of estimates using ACS data.²

¹ US Census Bureau (n.d.). *How the Census Bureau measures poverty*. As of August 26, 2020. Retrieved on September 9, 2021 from <https://www.census.gov/topics/income-poverty/poverty/guidance/poverty-measures.html>

² Appendix 3 "Measures of Sampling Error" in US Census Bureau (2008). *A compass for understanding and using American Community Survey data: What general data users need to know*. US Government Printing Office, Washington, DC.

8. A few states had estimates with confidence interval widths that were larger than the recommended 10% margin of error. In 2021, six states (Alaska, Delaware, the District of Columbia, North Dakota, South Dakota, and Wyoming) had over criteria confidence intervals ranging from 10.1% to 15.7%.

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Source:

US Census Bureau. (2022). *2021 American Community Survey (ACS) 1-Year Public Use Microdata Sample (PUMS)* [Data Set]. <https://www.census.gov/programs-surveys/acs/microdata.html>

Measure 2: % Births to Women Not Receiving Adequate Prenatal Care

Definition:

The percentage of births to women who received no prenatal care, whose prenatal care started in the fifth month of pregnancy or later, or who received fewer than 50% of expected prenatal visits based on when prenatal care was initiated and the gestational age at delivery.

Notes:

1. March of Dimes calculations were based on the Adequacy of Prenatal Care Utilization Index and identified those births to women who either had no prenatal care, whose prenatal care started in the fifth month of pregnancy or later, or who received fewer than 50% of expected prenatal visits based on when prenatal care was initiated and the gestational age at delivery.³
2. The American College of Gynecologists recommends 14 prenatal visits for a normal term pregnancy, with 1 visit per month up to 28 weeks, 1 visit every two weeks from 29 to 36 weeks, and 1 visit per week from 37 to 40 weeks.
3. Although data by race/ethnicity were not available for each individual year, data disaggregated into three mutually exclusive groups (White, non-Hispanic; Hispanic; and Black, non-Hispanic) were available as averages across the most recent three years (2019-2021) of natality data from March of Dimes Peristats.

Source:

National Center for Health Statistics, final natality data 2021. Retrieved June 16, 2023, from www.marchofdimes.org/peristats

Measure 3: % Eligible SNAP Units with Children < 18 Not Receiving SNAP

Definition:

Percentage of eligible SNAP units with children under age 18 who did not receive SNAP in the past year

³ Kotelchuck, M. (1994). *An evaluation of the Kessner Adequacy of Prenatal Care Index and a proposed Adequacy of Prenatal Care Utilization Index*. *American Journal of Public Health*, 84, 1414-1420.

Notes:

1. **Numerator:** The number of eligible SNAP units with children under age 18 who did not report receiving SNAP during the prior calendar year
2. **Denominator:** The number of eligible SNAP units with at least one child under age 18
3. The sample was limited to eligible SNAP units with children under age 18. These data are the pooled TRIM3 model adjusted values based on the Census Bureau's Current Population Survey Annual Social and Economic Supplement (CPS ASEC) 2018, 2019, and 2020 datasets. The model adjusts Census data, based on program eligibility requirements and program administrative data on recipients, to account for underreporting of benefit receipt. The TRIM3 project microdata uses the actual date of the data. For example, as the 2018 CPS ASEC survey questioned respondents about activities and benefits from 2017, the TRIM3 model refers to these data as the 2017 input files.
4. Race/ethnic groups based on the SNAP unit's reference person's race and ethnicity were calculated using the Hispanic origin and 6-race category variables. From these two variables, four mutually exclusive race/ethnic groups were created. The race/ethnic group of the family's reference person was assigned to all members of the family. If the reference person was identified as Hispanic, then the family was categorized as Hispanic. Next, reference persons were identified as Black, non-Hispanic, then White, non-Hispanic. The fourth group was created from all other non-Hispanic reference persons (Asian, American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, or all other races). The race/ethnic group of the family reference person was then assigned to the whole family.
5. All estimates (national and state-level) were calculated in Stata 18 using the person-level weight of the head of the SNAP unit. To improve data quality and accuracy of state-level estimates, per US Census Current Population Survey guidance, estimates were calculated using the three most recent years of CPS ASEC data and person-level population weights were adjusted by three to account for the multi-year dataset.⁴
6. For previous Roadmaps, we reported the percent of SNAP-eligible *families* with children under age 18 not receiving SNAP. Following guidance from TRIM3, we now report the percent of eligible *SNAP units* with children under age 18 not receiving SNAP.⁵ Although considerable overlap exists between a "family" and "SNAP unit," persons apply for SNAP benefits as a *SNAP unit*, and the TRIM3 model is designed to estimate the eligibility and benefits of a SNAP unit, not a family. In general, a SNAP unit is "an individual living alone; an individual living with others, but customarily purchasing food and preparing meals for home consumption separate and apart from others; or a group of individuals who live together and customarily purchase food and prepare meals together for home consumption."⁶ Estimates run at the family-level should not be compared to estimates run at the SNAP unit-level.
7. The percentage of eligible SNAP units with a child under age 18 not receiving SNAP jumped noticeably between the 2017 and 2018 data files. For example, 11.6% of eligible SNAP units with a child under age 18 did not receive SNAP in the 2017 file, whereas 19.2% did not receive SNAP in the 2018 file. This is largely because of TRIM3 changing their methodology for defining SNAP units beginning with the 2018 TRIM3 file.

⁴ US Census Bureau (n.d.). *Which data source to use*. As of March 20, 2018. Retrieved on April 28, 2020 from <https://www.census.gov/topics/income-poverty/poverty/guidance/data-sources.html>

⁵ L. Wheaton, TRIM3, personal communication, June 14, 2023.

⁶ 7 CFR § 273.1

This new methodology increases the number of eligible units, and therefore decreases the participation rate. This new methodology yields participation rates in line with those published by the USDA.⁷

8. The US Census Bureau recommends using a 90% confidence interval for evaluating the accuracy of estimates using CPS data. New Hampshire was the only state with a confidence interval wider than the recommended 10% with a 10.4% confidence interval.
9. Information presented here is derived in part from the Transfer Income Model, Version 3 (TRIM3) and associated databases. TRIM3 requires users to input assumptions and/or interpretations about economic behavior and the rules governing federal programs. Therefore, the conclusions presented here are attributable only to the authors of this report.

Source:

TRIM3. (2017-2019). *Transfer Income Model, Version 3* [Data set]. Retrieved on June 13, 2023, from <https://trim3.urban.org>

Measure 4: % Children < 3 Not Receiving Developmental Screening

Definition:

Percentage of children ages 10 months through 35 months whose parent reports the child did not receive a developmental screening using a parent-completed screening tool in the past year

Notes:

1. **Numerator:** The number of children between the ages of 10 and 35 months whose parent reported they had not received a developmental screening using a parent-completed screening tool in the past year
2. **Denominator:** The number of children between the ages of 10 and 35 months whose parent responded yes or no to a survey item regarding their receipt of a parent-completed screening tool
3. The sample was limited to children between the ages of 10 and 35 months whose parent responded to a survey item regarding their receipt of a developmental screening tool.
4. To improve accuracy in calculating sample estimates, especially at the state-level, three years of NSCH data (2019, 2020, and 2021) were combined to create one multi-year dataset.
5. Approximately 1.1% of children ages 10 to 35 months in the three-year combined data file were missing data for developmental screenings. In accordance with the reporting practice of the Data Resource Centers' Interactive Data Query (<https://www.childhealthdata.org/browse/survey>), cases with missing data were excluded from the analysis.⁸

⁷ USDA Food and Nutrition Service. (n.d.). *SNAP Participation Rates by State, All Eligible People (FY2018)*. <https://www.fns.usda.gov/usamap>

⁸ Child and Adolescent Health Measurement Initiative. Data Resource Center, supported by Cooperative Agreement U59MC27866 from the US Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). (2019). *The impact of missing values on population count estimates in the 2016 National Survey of Children's Health*. Revised 3/4/19. Retrieved May 15, 2020 from https://www.childhealthdata.org/docs/default-source/nsch-docs/nsch_impact-of-missing-cases_revised_03-02-19_generic.pdf?sfvrsn=d0c25e17_2

6. All estimates were calculated in Stata 17 using NSCH provided person level weights and adjusting standard errors based on sampling stratum. Per NSCH guidance the individual year population weight was divided by three to account for the combined data.⁹
7. NSCH guidance recommends using a 95% confidence interval and identifying estimates with confidence interval widths that exceed 20% as having questionable reliability and accuracy.¹⁰ There were no states with an estimate that had a confidence interval width larger than the recommended margin of error.

Source:

US Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). (2020-2022). *2019-2021 National Survey of Children's Health (NSCH) Public-Use Data* [Data Sets]. <https://www.census.gov/programs-surveys/nsch.html>

GOAL: PARENTS' ABILITY TO WORK

Measure 5: % Children < 3 Without Any Full-Time Working Parent

Definition:

Percentage of children under age 3 living in a family in which no parent has regular, full-time (35 hours per week or more), year-round (50 weeks of the year) employment

Notes:

1. **Numerator:** The number of children under age 3 who have no parent reporting that they have regular, full-time (35 hours per week or more), year-round (50 weeks per year or more) employment
2. **Denominator:** The number of children under age 3 living with parents who have valid labor force participation data or who are not reported to be living with either parent and are not living in group quarters
3. The sample was limited to children under age 3 whose parents have valid labor force participation data or who are not reported to be living with either parent. Year-round employment was defined as working 35 hours per week or more for at least 50 weeks during the 12 months prior to the survey.
4. For children living in two parent households, neither parent had secure employment; for children living in single parent families, the resident parent was not securely employed. Children whose parents were not labor-force eligible (under age 16) or who were reported to not be living with any parents were considered to have insecurely employed parents. Children whose parents provided inconsistent employment

⁹ US Census Bureau (2020). *National Survey of Children's Health: Guide to multi-year estimates*. As of August 21, 2020. Retrieved June 1, 2021 from <https://www2.census.gov/programs-surveys/nsch/technical-documentation/methodology/NSCH-Guide-to-Multi-Year-Estimates.pdf>

¹⁰ US Census Bureau, Associate Director of Demographic Programs, National Survey of Children's Health. (2020). *2019 National Survey of Children's Frequently asked questions*. As of September 2020. Retrieved October 5, 2020 from <https://www2.census.gov/programs-surveys/nsch/technical-documentation/methodology/2019-NSCH-FAQs.pdf>

information (e.g., reported their status as unemployed but had valid data for hours worked) or who were living in group quarters were excluded from the sample.

5. Parents' resident status with the child was determined by merging in the parent location variables (*momloc*, *momloc2*, *poploc*, *poploc2*), as determined by the University of Minnesota's IPUMS USA and available in the single year 2021 IPUMS ACS data file, with the 2021 ACS 1-Year PUMS data file. The IPUMS familial interrelationship variables were used in the identification of resident parents as they allow for the identification and inclusion of both cohabiting and same sex couples.¹¹
6. Race/ethnic groups were calculated using the Hispanic origin and race variables provided in the ACS. From these two variables, four mutually exclusive race/ethnic groups were created: White, non-Hispanic; Black, non-Hispanic; Hispanic; and Other. The "Other" category includes those who identified as "American Indian alone," "Alaskan Native alone," "American Indian and Alaskan Native tribes specified," "Asian alone," "Native Hawaiian and other Pacific Islander alone," "Some other race alone," or "2+ major race groups."
7. All estimates were calculated in Stata 17 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.
8. The US Census Bureau recommends using a 90% confidence interval for evaluating the accuracy of estimates using ACS data.¹²
9. Twelve states had estimates with confidence interval widths that were larger than the recommended 10% margin of error in 2021. Alaska, Delaware, the District of Columbia, Hawaii, Maine, Montana, New Hampshire, Rhode Island, South Dakota, Vermont, West Virginia, and Wyoming had out of range intervals ranging from 10.1% to 18.2%.

Sources:

1. US Census Bureau. (2022). *2021 American Community Survey (ACS) 1-Year Public Use Microdata Sample (PUMS)* [Data Sets]. <https://www.census.gov/programs-surveys/acs/microdata.html>
2. American Community Survey 2021 1-Year Estimates. Steven Ruggles, Sarah Flood, Ronald Goeken, Megan Schouweiler and Matthew Sobek. IPUMS USA: Version 12.0 [dataset]. Minneapolis, MN: IPUMS, 2022. <https://doi.org/10.18128/D010.V12.0>

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.

¹² Appendix 3 "Measures of Sampling Error" in US Census Bureau (2008). *A compass for understanding and using American Community Survey data: What general data users need to know*. US Government Printing Office, Washington, DC.

GOAL: SUFFICIENT HOUSEHOLD RESOURCES

Measure 6: % of Children < 3 in Poverty

Definition:

Percentage of children under age 3 whose family lives below 100% of the federal poverty level (FPL)

Notes:

1. **Numerator:** The number of children under age 3 living in a household in which they are related to the household head whose family income falls below 100% of the federal poverty level
2. **Denominator:** The number of children under age 3 living in a household in which they are related to the household head and have valid poverty data
3. 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 US 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 (*povpip*).¹³
4. Race/ethnic groups were calculated using the Hispanic origin and race variables provided in the ACS. From these two variables, four mutually exclusive race/ethnic groups were created: White, non-Hispanic; Black, non-Hispanic; Hispanic; and Other. The “Other” category includes those who identified as “American Indian alone,” “Alaskan Native alone,” “American Indian and Alaskan Native tribes specified,” “Asian alone,” “Native Hawaiian and other Pacific Islander alone,” “Some other race alone,” or “2+ major race groups.”
5. All estimates were calculated in Stata 17 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.
6. The US Census Bureau recommends using a 90% confidence interval for evaluating the accuracy of estimates using ACS data.¹⁴
7. Six states had estimates with confidence interval widths that were larger than the recommended 10% margin of error in 2021. Alaska, Delaware, the District of Columbia, South Dakota, Vermont, and Wyoming had confidence interval widths that fell outside of the 10% margin of error, ranging from 11.0% to 13.3%.

Source:

US Census Bureau. (2022). *2021 American Community Survey (ACS) 1-Year Public Use Microdata Sample (PUMS)* [Data Set]. <https://www.census.gov/programs-surveys/acs/microdata.html>

¹³ US Census Bureau (n.d.). *How the Census Bureau measures poverty*. Revised August 26, 2020. Retrieved on September 9, 2021 from <https://www.census.gov/topics/income-poverty/poverty/guidance/poverty-measures.html>

¹⁴ Appendix 3 “Measures of Sampling Error” in US Census Bureau (2008). *A compass for understanding and using American Community Survey data: What general data users need to know*. US Government Printing Office, Washington, DC.

Measure 7: % Children < 3 Living in Crowded Households

Definition:

Percentage of children under age 3 living in a household in which there is more than one person per room or more than two people per bedroom

Notes:

1. **Numerator:** The number of children under age 3 living in a household in which there is more than one person per room or more than two people per bedroom
2. **Denominator:** The number of children under age 3 living in a household reporting valid household size and providing data regarding the number of rooms and bedrooms in the household
3. The sample was limited to the number of children under age 3 with valid household size and housing structure data. Children living in group quarters were excluded from the sample.
4. Race/ethnic groups were calculated using the Hispanic origin and race variables provided in the ACS. From these two variables, four mutually exclusive race/ethnic groups were created: White, non-Hispanic; Black, non-Hispanic; Hispanic; and Other. The “Other” category includes those who identified as “American Indian alone,” “Alaskan Native alone,” “American Indian and Alaskan Native tribes specified,” “Asian alone,” “Native Hawaiian and other Pacific Islander alone,” “Some other race alone,” or “2+ major race groups.”
5. All estimates were calculated in Stata 17 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.
6. The US Census Bureau recommends using a 90% confidence interval for evaluating the accuracy of estimates using ACS data.¹⁵
7. Six states had estimates with confidence interval widths that were larger than the US Census’ recommended 10% margin in 2021. Alaska, Delaware, the District of Columbia, Hawaii, Montana, and Vermont had out of range confidence interval values ranging from 10.5% to 17.1%.

Source:

US Census Bureau. (2022). *2021 American Community Survey (ACS) 1-Year Public Use Microdata Sample (PUMS)* [Data Set]. <https://www.census.gov/programs-surveys/acs/microdata.html>

¹⁵ Ibid.

Measure 8: % of Households Reporting Child Food Insecurity

Definition:

The percentage of households with at least one child under age 3 who reported experiencing low or very low **child** food security

Notes:

1. **Numerator:** The number of households with at least one child under age 3 reporting low or very low child food security
2. **Denominator:** The number of households with at least one child under age 3 with a valid score on the child food security scale
3. The sample was limited to households with at least one child under age 3 with valid child food security scale data. The child food security scale was selected instead of the household food security scale to more realistically capture the food security situation for children in the household. Parents frequently shield children from experiencing hunger even though they may report low or very low food security for themselves. Estimates of household food security may overestimate the food insecurity experience of children in the household and this may be especially true for younger children as research suggests that older children in the household may be more likely to experience food insecurity compared to younger children.¹⁶
4. The race and ethnicity of the first child under age 3 listed in the household was assigned to the whole household.
5. To improve data quality and accuracy of state-level estimates, per US Census Current Population Survey guidance, estimates were calculated using the three most recent years of CPS, Food Security Supplement data (2019, 2020, and 2021) and household-level population weights were adjusted by three to account for the multi-year dataset.¹⁷
6. All estimates (national and state-level) were calculated in Stata 18 using both household-level population weights (for representative estimates) and replicate weights to account for any sampling bias.
7. The US Census Bureau recommends using a 90% confidence interval for evaluating the accuracy of estimates using CPS data.
8. Several states (Delaware, the District of Columbia, Kentucky, Maine, Nevada, Oklahoma, Rhode Island, South Carolina, and South Dakota) had estimates with confidence interval widths that were larger than the recommended 10% margin of error, with over criteria confidence intervals ranging from 10.2% to 14.8%. The New Hampshire sample size was too small to generate a reliable estimate.

Source: US Bureau of Labor Statistics and US Census Bureau. (2020-2022). *2019-2021 Current Population Survey (CPS), Food Security Supplement (FSS) Public Use Microdata Sample (PUMS)* [Data Sets].

https://www.census.gov/data/datasets/time-series/demo/cps/cps-supp_cps-repwgt/cps-food-security.html

¹⁶ Nord, M., & Bickel, G. (2002). *Measuring children's food security in US households, 1995-99*. FANRR-25, US Department of Agriculture, Economic Research Service.

¹⁷ US Census Bureau (n.d.). *Which data source to use*. As of March 20, 2018. Retrieved on April 28, 2020 from <https://www.census.gov/topics/income-poverty/poverty/guidance/data-sources.html>

GOAL: HEALTHY AND EQUITABLE BIRTHS

Measure 9: % Babies Born Preterm (< 37 Weeks)

Definition:

Percentage of babies born in the past year who were born prior to 37 weeks gestational age

Notes:

1. **Numerator:** The number of births in the past year in which the baby was born prior to 37 weeks gestational age
2. **Denominator:** The number of births in the past year with known gestational age
3. The sample was limited to births in the past year with valid gestational age information. Per Vital Statistics guidance, the obstetric estimated (OE) gestational age was used to measure gestational age instead of the last menstrual period (LMP) gestational age.¹⁸
4. 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 categorized as 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 (Asian, 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.
5. CDC reporting rules require the suppression of sub-national counts of 9 or fewer births.¹⁹

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, Natality public-use data 2007-2021, on CDC WONDER Online Database, December 2022. Accessed at <https://wonder.cdc.gov/natality-current.html> on May 23, 2023.

¹⁸ Martin, J.A., Osterman, M.J., Kirmeyer, S.E., & Gregory, E.C. (2015). *Measuring gestational age in vital statistics data: Transitioning to the obstetric estimate*. National Vital Statistics Reports from the Center for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System, 64(5), 1-20.

¹⁹ 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#>

Measure 10: # of Infant Deaths per 1,000 Births

Definition:

The number of infant deaths within the first year per 1,000 live births.

Notes:

1. Per CDC guidance, when available national estimates disaggregated by race/ethnicity were derived from the Vital Statistics period linked birth/infant death data. Race/ethnic subgroups are based on the race and ethnicity of the mother; using the linked birth/death file provides better accuracy in identifying mother's race/ethnicity from birth certificate data. To fully provide the rate of infant deaths at the state-level, state estimates were derived from the mortality file. The mortality file does not require the child to have a valid US (or US territory) birth certificate and provides a more complete picture of the state-level infant mortality rate.²⁰
2. In 2021, the infant mortality rate for Vermont was not available because of unreliable data quality associated with smaller sample sizes.

Sources:

Ely, D.M., & Driscoll, A.K. (2023). *Infant mortality in the United States, 2021: Data from the period linked birth/infant death file*. National Vital Statistics Reports, 72 (11), 8-9, 16.

GOAL: PARENTAL HEALTH AND WELLBEING

Measure 11: % Children < 3 Whose Mother Reports Fair/Poor Mental Health

Definition:

Percentage of children under age 3 whose mother rates her own mental/emotional health as fair or poor

Notes:

1. **Numerator:** The number of children under age 3 whose mother rated her own mental/emotional health as fair or poor
2. **Denominator:** The number of children under age 3 whose mother provided a valid response to a survey item regarding her current mental/emotional health
3. The sample was limited to children under age 3 whose mother responded to a survey item regarding her current mental/emotional health. Children who did not have a mother listed as either adult in the household (generally children living with grandparents, in single father households, or living with other relatives) were excluded from the analyses.

²⁰ Ely, D.M., & Driscoll, A.K. (2022). *Infant mortality in the United States, 2018: Data from the period linked birth/infant death file*. National Vital Statistics Reports, 71 (5), 3.

4. To improve accuracy in calculating sample estimates, especially at the state-level, three years of NSCH data (2019, 2020, and 2021) were combined to create one multi-year dataset.
5. Approximately 0.4% of children under 3 with a mother in the household were missing data for maternal mental health in the three-year combined data file. In accordance with the reporting practice of the Data Resource Centers' Interactive Data Query (<https://www.childhealthdata.org/browse/survey>), cases with missing data were excluded from the analysis.²¹
6. All estimates were calculated in Stata 17 using NSCH provided person level weights and adjusting standard errors based on sampling stratum. Per NSCH guidance the individual year population weight was divided by three to account for the combined data.²²
7. NSCH guidance recommends using a 95% confidence interval and identifying estimates with confidence interval widths that exceed 20% as having questionable reliability and accuracy.²³ No states had estimates that exceeded the 20% width.

Source:

US Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). (2020-2022). *2019-2021 National Survey of Children's Health (NSCH) Public-Use Data* [Data Sets]. <https://www.census.gov/programs-surveys/nsch.html>

²¹ Child and Adolescent Health Measurement Initiative. Data Resource Center, supported by Cooperative Agreement U59MC27866 from the US Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). (2019). *The impact of missing values on population count estimates in the 2016 National Survey of Children's Health*. Revised 3/4/19. Retrieved May 15, 2020 from https://www.childhealthdata.org/docs/default-source/nsch-docs/nsch_impact-of-missing-cases_revised_03-02-19_generic.pdf?sfvrsn=d0c25e17_2

²² US Census Bureau (2020). *National Survey of Children's Health: Guide to multi-year estimates*. As of August 21, 2020. Retrieved June 1, 2021 from <https://www2.census.gov/programs-surveys/nsch/technical-documentation/methodology/NSCH-Guide-to-Multi-Year-Estimates.pdf>

²³ US Census Bureau, Associate Director of Demographic Programs, National Survey of Children's Health. (2020). *2019 National Survey of Children's Frequently asked questions*. As of September 2020. Retrieved October 5, 2020 from <https://www2.census.gov/programs-surveys/nsch/technical-documentation/methodology/2019-NSCH-FAQs.pdf>

Measure 12: % Children < 3 Whose Parent Lacks Parenting Support

Definition:

Percentage of children under age 3 whose parent reported that during the past year there was not someone they could turn to for emotional parenting support

Notes:

1. **Numerator:** The number of children under age 3 whose parent reported that during the past year they did not have someone they could turn to for emotional parenting support
2. **Denominator:** The number of children under age 3 whose parent responded yes or no to a survey item regarding the availability of someone providing emotional parenting support over the past year
3. The sample was limited to children under age 3 whose parent responded to a survey item regarding emotional parenting support. To improve accuracy in calculating sample estimates, especially at the state-level, three years of NSCH data (2019, 2020, and 2021) were combined to create one multi-year dataset.
4. Approximately 1.9% of children under 3 in the three-year combined data file were missing data for parenting support. In accordance with the reporting practice of the Data Resource Centers' Interactive Data Query (<https://www.childhealthdata.org/browse/survey>), cases with missing data were excluded from the analysis.²⁴
5. All estimates were calculated in Stata 17 using NSCH provided person level weights and adjusting standard errors based on sampling stratum. Per NSCH guidance the individual year population weight was divided by three to account for the combined data.²⁵
6. NSCH guidance recommends using a 95% confidence interval and identifying estimates with confidence interval widths that exceed 20% as having questionable reliability and accuracy.²⁶ No states had estimates that exceeded the 20% width.

Source:

US Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). (2020-2022). *2019-2021 National Survey of Children's Health (NSCH) Public-Use Data* [Data Sets]. <https://www.census.gov/programs-surveys/nsch.html>

²⁴ Child and Adolescent Health Measurement Initiative. Data Resource Center, supported by Cooperative Agreement U59MC27866 from the US Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). (2019). *The impact of missing values on population count estimates in the 2016 National Survey of Children's Health*. Revised 3/4/19. Retrieved May 15, 2020 from https://www.childhealthdata.org/docs/default-source/nsch-docs/nsch_impact-of-missing-cases_revised_03-02-19_generic.pdf?sfvrsn=d0c25e17_2

²⁵ US Census Bureau (2020). *National Survey of Children's Health: Guide to multi-year estimates*. As of August 21, 2020. Retrieved June 1, 2021 from <https://www2.census.gov/programs-surveys/nsch/technical-documentation/methodology/NSCH-Guide-to-Multi-Year-Estimates.pdf>

²⁶ US Census Bureau, Associate Director of Demographic Programs, National Survey of Children's Health. (2020). *2019 National Survey of Children's Frequently asked questions*. As of September 2020. Retrieved October 5, 2020 from <https://www2.census.gov/programs-surveys/nsch/technical-documentation/methodology/2019-NSCH-FAQs.pdf>

GOAL: NURTURING AND RESPONSIVE CHILD-PARENT RELATIONSHIPS

Measure 13: % Children < 3 Not Read to Daily

Definition:

Percentage of children under age 3 whose family did not read to them daily during the prior week

Notes:

1. **Numerator:** The number of children under age 3 whose parent reported that family members read to them fewer than 7 days in the prior week
2. **Denominator:** The number of children under age 3 whose parent reported on the frequency of family reading behaviors
3. The sample was limited to children under age 3 whose parent responded to a survey item regarding family reading behaviors. To improve accuracy in calculating sample estimates, especially at the state-level, three years of NSCH data (2019, 2020, and 2021) were combined to create one multi-year dataset.
4. Approximately 1.6% of children under 3 in the three-year combined data file were missing data on family reading behavior. In accordance with the reporting practice of the Data Resource Centers' Interactive Data Query (<https://www.childhealthdata.org/browse/survey>), cases with missing data were excluded from the analysis.²⁷
5. All estimates were calculated in Stata 17 using NSCH provided person level weights and adjusting standard errors based on sampling stratum. Per NSCH guidance the individual year population weight was divided by three to account for the combined data.²⁸
6. NSCH guidance recommends using a 95% confidence interval and identifying estimates with confidence interval widths that exceed 20% as having questionable reliability and accuracy.²⁹ No states had estimates that exceeded the 20% width.

Source:

US Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). (2020-2022). *2019-2021 National Survey of Children's Health (NSCH) Public-Use Data* [Data Sets]. <https://www.census.gov/programs-surveys/nsch.html>

²⁷ Child and Adolescent Health Measurement Initiative. Data Resource Center, supported by Cooperative Agreement U59MC27866 from the US Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). (2019). *The impact of missing values on population count estimates in the 2016 National Survey of Children's Health*. Revised 3/4/19. Retrieved May 15, 2020 from https://www.childhealthdata.org/docs/default-source/nsch-docs/nsch_impact-of-missing-cases_revised_03-02-19_generic.pdf?sfvrsn=d0c25e17_2

²⁸ US Census Bureau (2020). *National Survey of Children's Health: Guide to multi-year estimates*. As of August 21, 2020. Retrieved June 1, 2021 from <https://www2.census.gov/programs-surveys/nsch/technical-documentation/methodology/NSCH-Guide-to-Multi-Year-Estimates.pdf>

²⁹ US Census Bureau, Associate Director of Demographic Programs, National Survey of Children's Health. (2020). *2019 National Survey of Children's Frequently asked questions*. As of September 2020. Retrieved October 5, 2020 from <https://www2.census.gov/programs-surveys/nsch/technical-documentation/methodology/2019-NSCH-FAQs.pdf>

Measure 14: % Children < 3 Nurtured Daily

Definition:

Percentage of children under age 3 whose family did not sing songs or tell stories to them every day during the prior week

Notes:

1. **Numerator:** The number of children under age 3 whose parent reported that family members told stories or sang songs with the child fewer than 7 days of the prior week
2. **Denominator:** The number of children under age 3 whose parent reported on the frequency of family storytelling and other nurturing behaviors (singing songs)
3. The sample was limited to children under age 3 whose parent responded to a survey item regarding family nurturing behaviors. To improve accuracy in calculating sample estimates, especially at the state-level, three years of NSCH data (2019, 2020, and 2021) were combined to create one multi-year dataset.
4. Approximately 1.6% of children under 3 in the three-year combined data file were missing data on family nurturing behaviors. In accordance with the reporting practice of the Data Resource Centers' Interactive Data Query (<https://www.childhealthdata.org/browse/survey>), cases with missing data were excluded from the analysis.³⁰
5. All estimates were calculated in Stata 17 using NSCH provided person level weights and adjusting standard errors based on sampling stratum. Per NSCH guidance the individual year population weight was divided by three to account for the combined data.³¹
6. NSCH guidance recommends using a 95% confidence interval and identifying estimates with confidence interval widths that exceed 20% as having questionable reliability and accuracy.³² No states had estimates that exceeded the 20% width.

Source:

US Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). (2020-2022). *2019-2021 National Survey of Children's Health (NSCH) Public-Use Data* [Data Sets]. <https://www.census.gov/programs-surveys/nsch.html>

³⁰ Child and Adolescent Health Measurement Initiative. Data Resource Center, supported by Cooperative Agreement U59MC27866 from the US Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). (2019). *The impact of missing values on population count estimates in the 2016 National Survey of Children's Health*. Revised 3/4/19. Retrieved May 15, 2020 from https://www.childhealthdata.org/docs/default-source/nsch-docs/nsch_impact-of-missing-cases_revised_03-02-19_generic.pdf?sfvrsn=d0c25e17_2

³¹ US Census Bureau (2020). *National Survey of Children's Health: Guide to multi-year estimates*. As of August 21, 2020. Retrieved June 1, 2021 from <https://www2.census.gov/programs-surveys/nsch/technical-documentation/methodology/NSCH-Guide-to-Multi-Year-Estimates.pdf>

³² US Census Bureau, Associate Director of Demographic Programs, National Survey of Children's Health. (2020). *2019 National Survey of Children's Frequently asked questions*. As of September 2020. Retrieved October 5, 2020 from <https://www2.census.gov/programs-surveys/nsch/technical-documentation/methodology/2019-NSCH-FAQs.pdf>

Measure 15: % Children < 3 Whose Parent Reports Not Coping Very Well

Definition:

Percentage of children under age 3 whose parent reports they are not coping “very well” with the day-to-day demands of parenting

Notes:

1. **Numerator:** The number of children under age 3 whose parent reported that they are not coping very well with the demands of parenting
2. **Denominator:** The number of children under age 3 whose parent responded to a survey item regarding how well they are coping with the demands of parenting
3. The sample was limited to children under age 3 whose parent responded to a survey item regarding parenting stress and coping. Responses to the survey item were on a four-point scale: very well, somewhat well, not very well, or not well at all. Our calculation grouped the last three categories (somewhat well, not very well, or not well at all). To improve accuracy in calculating sample estimates, especially at the state-level, three years of NSCH data (2019, 2020, and 2021) were combined to create one multi-year dataset. Approximately 1.5% of children under 3 in the three-year combined data file were missing data for parenting stress and coping. In accordance with the reporting practice of the Data Resource Centers’ Interactive Data Query (<https://www.childhealthdata.org/browse/survey>), cases with missing data were excluded from the analysis.³³
4. All estimates were calculated in Stata 17 using NSCH provided person level weights and adjusting standard errors based on sampling stratum. Per NSCH guidance the individual year population weight was divided by 3 to account for the combined data.³⁴ Additionally, NSCH guidance recommends using a 95% confidence interval and identifying estimates with confidence interval widths that exceed 20% as having questionable reliability and accuracy.³⁵ No states had estimates that exceeded the 20% width.

Source:

US Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). (2020-2022). *2019-2021 National Survey of Children’s Health (NSCH) Public-Use Data* [Data Sets]. <https://www.census.gov/programs-surveys/nsch.html>

³³ Child and Adolescent Health Measurement Initiative. Data Resource Center, supported by Cooperative Agreement U59MC27866 from the US Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). (2019). *The impact of missing values on population count estimates in the 2016 National Survey of Children’s Health*. Revised 3/4/19. Retrieved May 15, 2020 from https://www.childhealthdata.org/docs/default-source/nsch-docs/nsch_impact-of-missing-cases_revised_03-02-19_generic.pdf?sfvrsn=d0c25e17_2

³⁴ US Census Bureau (2020). *National Survey of Children’s Health: Guide to multi-year estimates*. As of August 21, 2020. Retrieved June 1, 2021 from <https://www2.census.gov/programs-surveys/nsch/technical-documentation/methodology/NSCH-Guide-to-Multi-Year-Estimates.pdf>

³⁵ US Census Bureau, Associate Director of Demographic Programs, National Survey of Children’s Health. (2020). *2019 National Survey of Children’s Frequently asked questions*. As of September 2020. Retrieved October 5, 2020 from <https://www2.census.gov/programs-surveys/nsch/technical-documentation/methodology/2019-NSCH-FAQs.pdf>

GOAL: NURTURING AND RESPONSIVE CHILD CARE IN SAFE SETTINGS

Measure 16: % Children Without Access to Early Head Start

Definition:

The estimated percentage of income-eligible children (those in families whose poverty status was at or below 100% of the federal poverty level) under age 3 without access to Early Head Start (as measured through the total number of EHS slots).

Notes:

1. **Numerator:** The number of EHS slots (regardless of funding source) available in all EHS programs (traditional EHS, American Indian, Alaska Native (AIAN) and migrant EHS) as provided in Head Start Notice of Award data
2. **Denominator:** The number of children under age 3 living in households in which they are related to the household head and the household income level at or below 100% of the Federal Poverty Level, as estimated from two years of the American Community Survey (ACS)
3. The sample was limited to children with valid poverty status data living in households with incomes at or below 100% of the FPL.
4. The data for the numerator (the number of funded EHS slots for children under age 3) came from the Notice of Grant Award data. Previously, we used the number of funded EHS slots that came from the self-reported Program Information Reports (PIRs) populated by grant recipients. Beginning in 2023, we switched to the Notice of Grant Award data upon guidance from the Administration for Children and Families (ACF)³⁶ and the National Institute for Early Education Research (NIEER)³⁷ that the Notice of Grand Award data is a more authoritative source for funded enrollment than the PIRs.
5. The denominator reflects population level estimates from the American Community Survey (ACS) Public-Use Microdata Sample (PUMS) for the sample of children under the age of 3 whose family poverty value was at or below 100% of the federal poverty level (FPL).
6. Sample size estimates were calculated in Stata 17 using ACS-provided person-level weights. Given the age and income limits imposed on the sample (children under age 3 living in families at or below 100% FPL) and the estimates by state, two years of ACS data were combined to improve data quality and accuracy and all weights were appropriately adjusted to account for the two combined years of data. Children living in group quarters or whose family poverty status was not available (e.g., foster children or children who were unrelated to the head of household) were excluded from the calculation.
7. The Census Bureau warned of quality issues with the 2020 American Community Survey (ACS) data because of as the pandemic's impact on data collection. To ensure as up-to-date data as possible, we pooled a state's 2021 ACS data with either their 2019 ACS or 2020 ACS data, depending on which data year better represented the "true" trend in poverty from 2019 to 2020 as captured by the official Census Bureau

³⁶ J. Escobar, U.S. Department of Health & Human Services Administration for Children & Families, personal communication, September 14, 2023.

³⁷ A. Krauss, NIEER, personal communication, August 4, 2023.

poverty estimates using the Current Population Survey Annual Social and Economic Supplement (CPS ASEC) data. We compared the published 2019³⁸ and 2020³⁹ ACS tables of the poverty rate for the under age 18 population to the published 2019⁴⁰ and 2020⁴¹ CPS ASEC tables of the same measure. If the ACS data showed that the poverty rate moved in the same direction as the CPS ASEC data from 2019 to 2020, we assigned the 2020 ACS data to that state because the ACS trend in poverty rate matched the trend in CPS ASEC poverty rate. If the ACS poverty rate for the state decreased from 2019 to 2020 and the CPS ASEC data showed that it increased, we assigned the 2019 ACS data to the state because the 2019 ACS poverty rate is closer to the “true” 2020 CPS ASEC poverty rate. If the ACS poverty rate for the state increased from 2019 to 2020 and the CPS data showed that it decreased, we assigned the 2019 ACS data to the state because the 2019 ACS poverty rate is close to the “true” 2020 CPS ASEC poverty rate. We assigned the 2019 ACS data to 30 states and the 2020 ACS data to 21 states.

8. Estimates are impacted by both the numerator and denominator. For example, a state’s value of the percent of children without access to Early Head Start could decrease both because of decreases to the numerator (fewer funded EHS slots) or increases to the denominator (more children in poverty). Annual estimates should be compared conservatively, because two factors drive changes in the overall estimate of the percent of children without access to Early Head Start.
9. The US Census calculation of poverty 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 (*povpip*).⁴²
10. A single year of the funded slot data from the EHS PIR, reflecting all program types and funding sources, was paired with two combined years of data from the ACS PUMS 1-year data, reflecting income-eligible children under age 3. The 2021 EHS PIR Vintage data were paired with the 2019-2021 ACS samples.

Sources:

1. US Department of Health & Human Services, Office of Head Start. (n.d.). *2021 Early Head Start (EHS) Funding and Enrollment Data* [Data Sets]. Retrieved on September 14, 2023, through personal correspondence with the Administration for Children and Families
2. US Census Bureau. (2020-2022). *2019-2021 American Community Survey (ACS) 1-Year Public Use Microdata Sample (PUMS)* [Data Sets]. <https://www.census.gov/programs-surveys/acs/microdata.html>

³⁸ U.S. Census Bureau. (2020). *Table S1701: POVERTY STATUS IN THE PAST 12 MONTHS* [data table]. Retrieved on December 7, 2022, from <https://data.census.gov/table?q=Income+and+Poverty&tid=ACST1Y2019.S1701>.

³⁹ U.S. Census Bureau. (2021). *Table ID: XK201701: POVERTY STATUS IN THE PAST 12 MONTHS BY AGE* [data table]. Retrieved on December 7, 2022, from <https://www.census.gov/programs-surveys/acs/data/experimental-data/1-year.html>.

⁴⁰ U.S. Census Bureau. (2022). *POV46: Poverty Status by State: 2019* [data table]. Retrieved on December 7, 2022, from <https://www2.census.gov/programs-surveys/cps/tables/archive/decommissioned-after-2020/pov-46/2019/>.

⁴¹ U.S. Census Bureau. (2022). *POV46: Poverty Status by State: 2020* [data table]. Retrieved on December 7, 2022, from <https://www2.census.gov/programs-surveys/cps/tables/archive/decommissioned-after-2020/pov-46/2020/>.

⁴² US Census Bureau (n.d.). *How the Census Bureau measures poverty*. As of August 27, 2019. Retrieved on April 28, 2020 from <https://www.census.gov/topics/income-poverty/poverty/guidance/poverty-measures.html>

Measure 17: % Providers Not in Participating in the State's Quality Rating and Improvement System (QRIS)

Definition:

Percentage of child care providers not participating in state QRIS

Notes:

1. **Numerator:** The number of center-based and family child care (FCC) providers rated in the QRIS in the state.
2. **Denominator:** The total number of center-based and FCC providers in the state.
3. "NR" indicates that the state did not report these data about its QRIS in the 2021 Quality Compendium.
4. Hawaii, Mississippi, and Wyoming do not currently have a QRIS or plans to develop a QRIS.
5. Missouri does not have a QRIS but reported plans to develop one in the state CCDF plan.
6. Connecticut, Kansas, South Dakota, and West Virginia are currently piloting or planning their QRIS and state data are not reported in the 2021 Quality Compendium.
7. Florida operates a statewide system of quality improvement, but also allows local QRIS development. The figures reported here are for the statewide School Readiness Program Assessment program.
8. New Hampshire's Compendium data was last updated in 2019.
9. Alabama, Arizona, Louisiana, Nebraska, and Nevada do not report participation data in the 2021 Quality Compendium.

Source:

The Build Initiative & Child Trends. (2021). A Catalog and Comparison of Quality Initiatives (Data System). Retrieved from <http://qualitycompendium.org/> on August 17, 2022.

GOAL: OPTIMAL CHILD HEALTH AND DEVELOPMENT

Measure 18: % Children Whose Mother Reported Never Breastfeeding

Definition:

Percentage of children ages 19 to 35 months whose mother reported never breastfeeding

Notes:

1. **Numerator:** The number of children between the ages of 19 and 35 months whose mother reported they never breastfed the child
2. **Denominator:** The number of children between the ages of 19 and 35 months whose mother reported yes or no to an item regarding whether the child was ever breastfed
3. The sample was limited to children between the ages of 19 and 35 months whose mother responded to a survey item regarding breastfeeding of the child.
4. All estimates were calculated in Stata 18 using NIS-Child provided person-level weights and adjusting standard errors based on sampling stratum.
5. NIS-Child guidance recommends considering estimates as having questionable reliability and accuracy if they violate one of three criteria: 1) have a 95% confidence interval width greater than 20 percentage points, 2) having a standard error to estimate ratio greater than 0.3, or 3) having an unweighted denominator of fewer than 30 cases.⁴³ The estimates for all states met the quality criteria.

Source:

US Department of Health and Human Services (US DHHS), National Center for Immunization and Respiratory Diseases. (2022). *The 2021 National Immunization Survey-Child (NIS-Child)* [Data Sets]. Atlanta, GA: Centers for Disease Control and Prevention. <http://www.cdc.gov/vaccines/imz-managers/nis/datasets.html>

⁴³ US Department of Health and Human Services (US DHHS), National Center for Immunization and Respiratory Diseases. (2020). *A user's guide for the 2019 public-use data file*. Centers for Disease Control and Prevention, Presented by NORC at the University of Chicago. Retrieved January 26, 2021 from <https://www.cdc.gov/vaccines/imz-managers/nis/downloads/NIS-PUF19-DUG.pdf>

Measure 19: % Children < 3 Not Up to Date on Immunizations

Definition:

Percentage of children ages 19 to 35 months who are not up to date on the combined 7-vaccine series

Notes:

1. **Numerator:** The number of children ages 19 to 35 months who are not up-to-date on the combined 7-vaccine series, based on the child's age
2. **Denominator:** The number of children ages 19 to 35 months with adequate provider-verified immunization information
3. The sample was limited to children ages 19 to 35 months with adequate provider-verified information regarding immunizations. Children with at least one vaccination verified by a provider are considered to have adequate provider-verified data. The combined 7-vaccine series consists of 4 or more Diphtheria, tetanus, and acellular pertussis (DTaP) vaccinations; 3 or more polio vaccinations; 1 or more measles-containing (MCV) vaccinations; 3 or 4 Hib vaccinations (depending upon vaccine manufacturer); 3 or more hepatitis B vaccinations; 1 or more varicella vaccinations (administered at 12 months or older); and 3 or more pneumococcal vaccinations.⁴⁴ The NIS-Child public use data file contains a constructed variable indicating whether the child is up-to-date on the combined 7-vaccine series based on the age of the child at the time of the survey and provider-verified vaccination data.
4. All estimates were calculated in Stata 18 using NIS-Child provided person-level weights, modified for adequate provider data, and adjusting standard errors based on sampling stratum.
5. NIS-Child guidance recommends considering estimates as having questionable reliability and accuracy if they violate one of three criteria: 1) have a 95% confidence interval width greater than 20 percentage points, 2) having a standard error to estimate ratio greater than 0.3, or 3) having an unweighted denominator of fewer than 30 cases.⁴⁵ The estimates for all states met the quality criteria.

Source:

US Department of Health and Human Services (US DHHS), National Center for Immunization and Respiratory Diseases. (2022). *The 2021 National Immunization Survey-Child (NIS-Child)* [Data Sets]. Atlanta, GA: Centers for Disease Control and Prevention. <http://www.cdc.gov/vaccines/imz-managers/nis/datasets.html>

⁴⁴ Ibid.

⁴⁵ Ibid.

Measure 20: Maltreatment Rate per 1,000 Children < 3

Definition:

The rate of substantiated incidents of child maltreatment (per 1,000) for children under age 3

Notes:

1. **Numerator:** The number of unique child maltreatment victims under age 3
2. **Denominator:** The number of children under age 3
3. The sample was limited to children under age 3. The numerator is derived from the restricted-use NCANDS Child Files and is the unique count of substantiated child maltreatment victims under age 3. The denominator is derived from Census Population Estimates and is the estimate of the total number of children under age 3.⁴⁶
4. Arizona data are not available in the 2021 NCANDS file.
5. The analyses presented in this publication were based on data from the National Child Abuse and Neglect Data System (NCANDS). These data were provided by the National Data Archive on Child Abuse and Neglect at Cornell University, and have been used with permission. The data were originally collected under the auspices of the Children's Bureau. Funding was provided by the Children's Bureau, Administration on Children, Youth, and Families, Administration for Children and Families, US Department of Health and Human Services. The collector of the original data, the funding agency, NDACAN, Cornell University, and the agents or employees of these institutions bear no responsibility for the analyses or interpretations presented here. The information and opinions expressed reflect solely the opinions of the authors.

Sources:

1. US Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2023). *National Child Abuse and Neglect Data System (NCANDS) Child File, FFY 2021v2* [Data Set]. Available from the National Data Archive on Child Abuse and Neglect Web site, <http://www.ndacan.cornell.edu>
2. US Census Bureau, Population Division. (2022). *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, 2020 to July 1, 2021 – sc-est2021-alldata6.csv* [Data Set]. Retrieved August 31, 2022 from <https://www.census.gov/data/tables/time-series/demo/popest/2020s-state-detail.html>

⁴⁶ US Census. (2019). Methodology for the United States population estimates: Vintage 2018. Retrieved June 30, 2020 from <https://www2.census.gov/programs-surveys/popest/technical-documentation/methodology/2010-2018/2018-natstcopr-meth.pdf>