

RESEARCH REPORT

Examining Race and Ethnicity Data Quality for Medicaid/CHIP-Enrolled Children in the T-MSIS Analytic Files

A State-by-State Resource for Researchers

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Examining Race and Ethnicity Data Quality for Medicaid/CHIP-Enrolled Children in the T-MSIS Analytic Files

Introduction

Data on the race and ethnicity of enrollees in public health insurance programs are critical for generating the knowledge needed to identify and address health care inequities.¹ This is especially true for inequities affecting children, as Medicaid and the Children Health Insurance Program (hereafter referred to as Medicaid/CHIP) provide health care coverage to nearly 40 million children² including over 50 percent of Black, Hispanic, and American Indian and Alaskan Native children (Artiga, Hill, and Damico 2022).

The Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files (TAF) are the newest and most comprehensive source of Medicaid administrative data. The TAF files contain standardized claims and enrollment records for all states that can include enrollee demographic information such as race and ethnicity. However, the completeness and quality of the race and ethnicity information available in the TAF vary considerably across states due to variation in states' data quality and data collection systems (MACPAC 2022; Saunders and Chidambaram 2022).³ For example, Medicaid programs do not consistently have access to self-identified information on race and ethnicity because providing race and ethnicity is voluntary for applicants, and states use different categorizations and naming schemes for their race and ethnicity data (MACPAC 2022; Saunders and Chidambaram 2022).⁴ While there are research methods for imputing individual race and ethnicity, these alternatives come with their own risks and challenges (Zhang et al. 2022; Randal, Stern, and Su 2021). Other research has provided important considerations for and analysis of why race and ethnicity data quality suffers, shortcomings in the structure and methods of race and ethnicity data collection, and strategies for improvement in these areas (SHADAC Staff 2021; Lukanen and Zylla 2020; Saunders and Chidambaram 2022; MACPAC 2022).

To assist researchers in understanding the quality of TAF data, the Centers for Medicare and Medicaid Services (CMS) maintains an interactive web-based tool known as the TAF Data Quality (DQ) Atlas. The DQ Atlas reports on a range of TAF data-quality issues across years and states, including the quality of race and ethnicity data. However, the DQ Atlas's assessment of the race and ethnicity data

represents a high-level snapshot of the race and ethnicity variable's overall completeness and quality in each state (Saunders and Chidambaram 2022).⁵ The quality of the race and ethnicity variable for children, and whether the available information on race and ethnicity for children enrolled in Medicaid/CHIP can be reliably used to identify children of some races and ethnicities better than others, are not documented.

In this report, we assess the quality of race and ethnicity data for Medicaid/CHIP-enrolled children in recent years (2018–2019) of the TAF. Using an approach modeled on the DQ Atlas, we compare state-level distributions of race and ethnicity among children in the TAF to external benchmarks generated from the US Census Bureau's American Community Survey (ACS).⁶ However, unlike the DQ Atlas, we focus specifically on children rather than examining all Medicaid enrollees together, and we analyze and report on each of the TAF's seven race and ethnicity categories separately for each state.

Our key findings include the following:

- There is considerable variation in the quality of the TAF's race and ethnicity variable for children across states and across race and ethnicity categories, and there are few differences in data quality between the 2018 and 2019 TAF.
- Approximately 40–50 percent of states have moderate- or high-quality data for identifying American Indian/Alaskan Native (22 states), Asian (22 states), Black (25 states), Hispanic (21 states), and white (21 states) children in 2018. Far fewer states have moderate- or high-quality data for identifying Hawaiian or Pacific Islander (4 states) or multiracial children (3 states) in 2018.
- Only one state (North Carolina) has moderate- or high-quality data for all race and ethnicity categories. Twenty-four states have low-quality data for all race and ethnicity categories due to high rates of missing values in 2018.
- The rate of missing values for race and ethnicity variable among children varies substantially across states.

Our primary objective is to provide a practical resource for researchers who are considering using the TAF for analyses on racial and ethnic disparities among children enrolled in Medicaid/CHIP. In addition, given that Medicaid and CHIP provide health insurance coverage to approximately 40 percent of children in the United States, we think it is important for key Medicaid/CHIP stakeholders to understand the extent to which the TAF can be used to provide meaningful assessments of racial and ethnic disparities in health care within each state among the children covered under these programs.⁷

There is an added urgency to these issues in light of efforts by the current federal administration to advance racial justice and equity across government programs.⁸ For example, a rule proposed by CMS would require state reporting of the Core Set of Children’s Health Care Quality Measures for Medicaid by demographic characteristics including race and ethnicity.⁹

Methods

Our overall approach is to compare the distribution of race and ethnicity among Medicaid/CHIP-enrolled children in the TAF to a comparable population of Medicaid/CHIP-enrolled children in the Census Bureau’s ACS, a widely used source of nationally representative data containing reliable, self-reported demographic information as well as health insurance coverage type. Based on this comparison and the share of missing values for race and ethnicity in the TAF, we classify each race and ethnicity category in each state as either high quality, moderate quality, or low quality. We performed this process for 2018 and repeated it for 2019 to assess whether data quality improved.

T-MSIS Analytic File Data and Sample

We use the final versions of the 2018 and 2019 Demographics and Eligibility (DE) TAF Research Identifiable Files (RIF) and assess the quality of the race and ethnicity constructed code variable (RACE_ETHNCTY_CD).¹⁰ This variable takes on values for seven possible race and ethnicity categories: white, non-Hispanic (hereafter “white”); Black, non-Hispanic (hereafter “Black”); Asian, non-Hispanic (hereafter “Asian”); American Indian and Alaska Native, non-Hispanic (hereafter “AIAN”); Hawaiian/Pacific Islander, non-Hispanic (hereafter “H/PI”); Multiracial, non-Hispanic (hereafter “multiracial”); Hispanic, all races (hereafter “Hispanic”). In addition to these seven categories, the variable can equal Null/Missing (hereafter “missing”) when “the source value is missing or unknown.”¹¹ Additional details about this variable and the race and ethnicity categories can be found on Medicaid.gov and the ResDAC webpage.¹²

We limit the TAF data to enrollees ages 18 and below, excluding the small number of records for enrollees with restricted benefits (approximately 1.4 percent of records), records missing key variables (i.e., birth date, enrollee ID, or days eligible) (approximately 1.8 percent of records), and duplicate records (less than 0.1 percent of records). We weight each enrollee by the number of days enrolled during the year, to better mirror the rolling survey design of the ACS, which is fielded over a 12-month period corresponding to the calendar year (US Census Bureau 2014). See appendix tables A.1 and A.2

for additional details on the TAF analytic sample. We then tabulate the race and ethnicity variable in each state (and the District of Columbia) and year, including the share with a missing value.

American Community Survey Data and Sample

To generate the external benchmarks for comparison to the TAF, we use the 2018 and 2019 ACS one-year tables. We construct a race and ethnicity variable that takes on one of seven values to match the categories available in the TAF using the ACS-provided race indicator variables, the Hispanic ethnicity indicator, and the variable that indicates the number of races identified for each individual. For example, we classify a respondent as Black if they have a “yes” value for the Black indicator, a “no” value for the Hispanic ethnicity indicator, and they report having only one race. Details on this logic, as well as the ACS instruments used to collect race and ethnicity information, are provided in the Appendix. To identify Medicaid-enrolled children in the ACS, we use the ACS health insurance coverage variable and apply coverage edits to address potential misclassification of Medicaid coverage (Boudreaux et al. 2019; Hest, Lukanen, and Blewett 2022). Described in detail elsewhere, these edits essentially edit individual sample cases to have Medicaid coverage if other ACS-collected information implies that the individual is a Medicaid enrollee (Haley et al. 2021; Lynch et al. 2011). We then tabulate our constructed race and ethnicity variable with seven possible values and estimate 95 percent confidence intervals to capture sampling error on the ACS (US Census Bureau 2020a, 2020b).

Assessment of Data Quality

For each state, year, and race and ethnicity category, we identify whether the share of enrollees in the TAF is within the bounds of the 99 percent confidence interval on the ACS estimate. We then calculate the *percentage-point* difference and the *percent* difference between the TAF and ACS estimates. We consider the TAF to be *high quality* when the TAF value is within the bounds of the 99 percent confidence interval on the ACS estimate and fewer than 20 percent of enrollees in the state have a missing value for race and ethnicity. We consider the TAF to be *moderate quality* when all of the following criteria are met: the TAF value is outside the ACS's 99 percent confidence interval, the percentage-point difference is less than 10 percentage points and the percent difference is less than 50 percent, and fewer than 20 percent of enrollees in the state have a missing value for race and ethnicity. We consider the TAF to be *low quality* when at least one of the following criteria are met: the percentage-point difference is more than 10 percentage points, or the percent difference is greater than 50 percent, or at least 20 percent of enrollees in the state have a missing value for race and

ethnicity. We consider the percent difference in addition to the percentage-point difference to improve the assessment for race and ethnicity categories that comprise a relatively small share of enrollees. For example, if a race and ethnicity population comprises 15 percent of enrollees in a state according to the ACS, but only 6 percent in the TAF, the *percentage-point* difference is 9, and therefore this comparison would not be flagged as problematic by comparing the percentage-point difference alone. However, in this example, over 50 percent of the population is not being identified by the TAF—a substantial discrepancy. Results for varied logic, such as using 95 percent confidence intervals rather than 99, differences of 5 percentage points instead of 10, or 25 percent instead of 50, are available upon request. Additionally, results excluding missing values (i.e., assuming missing values are randomly distributed rather than treating missing values as a separate category) are available upon request. Complete tabulations showing all TAF and ACS estimates and confidence intervals for the ACS estimates are provided in appendix tables A.4 through A.11.

Comparing Our Approach to the CMS Data Quality Atlas

While our methods are similar to those used in the CMS DQ Atlas in that we compare the distribution of race and ethnicity in the TAF to estimates from the ACS, there are several differences in our approach. First, we focus our data-quality assessment on children specifically rather than a state’s entire population of Medicaid enrollees. To the extent that race and ethnicity data quality may be different for children than adults—for example, if recent efforts to collect race and ethnicity data for new enrollees have led to improved (lower) rates of missing values among young children more so than adults—this distinction is important. Second, for each state, we provide assessments for each of the TAF’s seven race and ethnicity categories separately. Third, our quality level logic accounts for varying sample sizes of race and ethnicity populations across states by using confidence intervals from the ACS estimates (which, by definition, are wider for smaller subpopulations and narrower for larger subpopulations) and considering *percent* difference in addition to *percentage-point* difference between ACS and TAF estimates. Finally, we weight observations in the TAF by days of enrollment to mirror the rolling survey design of the ACS, and we use the one-year ACS estimates rather than the five-year ACS estimates.

Results

Complete tabulations of race and ethnicity by state in the 2018 and 2019 TAF and the 2018 and 2019 ACS are provided in appendix tables A.4 through A.11. Here, we present and describe data-quality summaries derived directly from these comprehensive appendix tables. Table 1 can be used to identify

states that have high- or moderate-quality data for a given race and ethnicity category, or to identify which race and ethnicity categories are moderate quality or high quality for a given state. Figure 1 summarizes the quality of data for each race and ethnicity category across all states. Table 2 can be used to assess the overall quality of race and ethnicity data in each state. Table 3 shows the rate of missing values by state.

Levels of Data Quality for each Race and Ethnicity Category

Table 1 shows, for each state and each of the seven race and ethnicity categories in the TAF, whether the high and moderate data-quality levels described above are met in the 2018 TAF (analogous results for 2019 are similar and are provided in appendix table A.12). For example, in 2018 in Ohio, the AIAN category is high quality; the Black, Hispanic, and white categories are moderate quality; and the Asian, H/PI, and multiracial categories are low quality. Overall, the results are similar in 2018 and 2019 (a data table highlighting differences between 2018 and 2019 is available upon request).

Figure 1 summarizes, for each race and ethnicity category in the TAF, the number of states with high-quality data, the number of states with moderate-quality data, and the number of states with low-quality data in the 2018 and 2019 TAF.

TABLE 1

Summary of TAF Race and Ethnicity Data-Quality Levels for Medicaid/CHIP-Enrolled Children from Birth to Age 18, by State, 2018

State	American Indian/ Alaskan Native, non- Hispanic	Asian, non- Hispanic	Black, non- Hispanic	Hawaiian Pacific Islander, non- Hispanic	Hispanic	Multiple races, non-Hispanic	White, non- Hispanic
Alabama	low	low	low	low	low	low	low
Alaska	high	high	high	low	high	high	high
Arizona	low	low	low	low	low	low	low
Arkansas	low	low	low	low	low	low	low
California	moderate	high	moderate	low	moderate	low	high
Colorado	low	low	low	low	low	low	low
Connecticut	low	low	low	low	low	low	low
Delaware	high	high	high	low	high	low	high
DC	low	low	low	low	low	low	low
Florida	high	moderate	high	low	moderate	low	moderate
Georgia	high	moderate	high	high	low	low	low
Hawaii	low	low	low	low	low	low	low
Idaho	high	high	high	low	low	low	low
Illinois	high	high	moderate	low	low	low	low
Indiana	high	low	moderate	low	moderate	low	high
Iowa	low	low	low	low	low	low	low
Kansas	low	low	low	low	low	low	low
Kentucky	high	high	high	high	moderate	low	moderate
Louisiana	low	low	low	low	low	low	low

Maine	high	high	high	low	high	low	moderate
Maryland	low	low	low	low	low	low	low
Massachusetts	low	low	low	low	low	low	low
Michigan	low	low	low	low	low	low	low
Minnesota	low	low	low	low	low	low	low
Mississippi	high	high	moderate	low	low	low	high
Missouri	low	low	low	low	low	low	low
Montana	moderate	high	high	low	high	low	low
Nebraska	high	high	low	low	high	low	moderate
Nevada	high	high	moderate	low	moderate	low	moderate
New Hampshire	high	high	high	low	high	low	high
New Jersey	low	high	moderate	low	low	low	moderate
New Mexico	high	high	low	low	moderate	low	moderate
New York	low	low	low	low	low	low	low
North Carolina	high	high	moderate	high	moderate	moderate	moderate
North Dakota	high	low	high	low	high	high	high
Ohio	high	low	moderate	low	moderate	low	moderate
Oklahoma	low	low	high	low	high	low	moderate
Oregon	low	low	low	low	low	low	low
Pennsylvania	low	high	moderate	low	moderate	low	high
Rhode Island	low	low	low	low	low	low	low
South Carolina	low	low	low	low	low	low	low
South Dakota	moderate	low	high	low	high	low	high
Tennessee	low	low	low	low	low	low	low
Texas	high	moderate	moderate	high	moderate	low	moderate
Utah	low	low	low	low	low	low	low

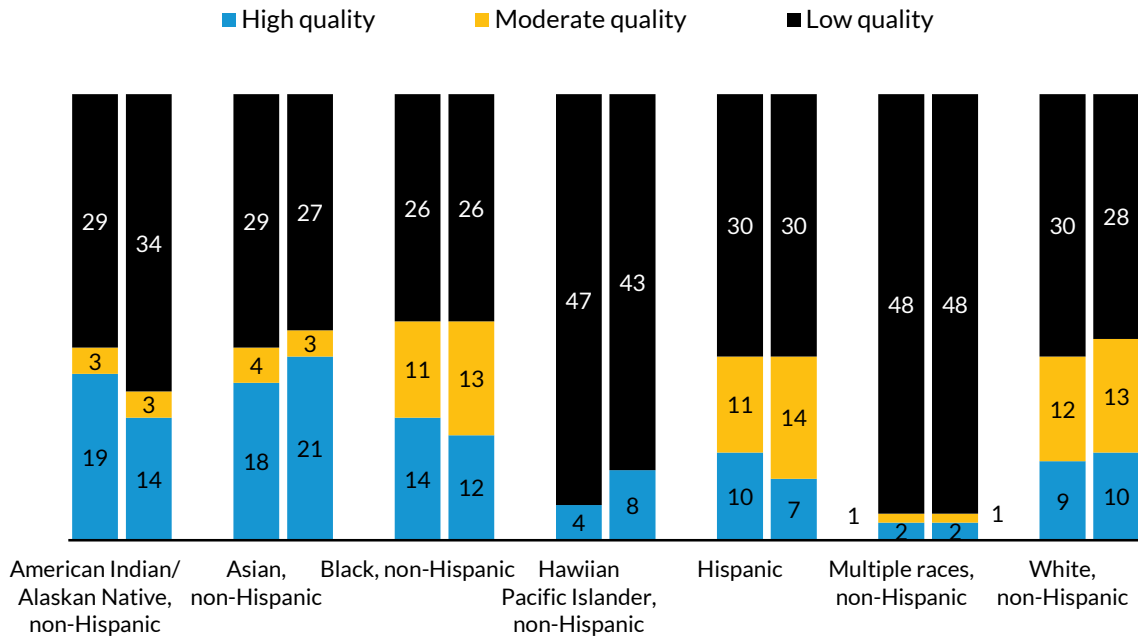
Vermont	high	high	high	low	high	low	low
Virginia	low	high	moderate	low	low	low	low
Washington	low	moderate	high	low	moderate	low	moderate
West Virginia	low	low	low	low	low	low	low
Wisconsin	low	low	low	low	low	low	low
Wyoming	low	low	low	low	low	low	low
Total states with high-quality data	19	18	14	4	10	2	9
Total states with moderate- or high-quality data	22	22	25	4	21	3	21

Source: Authors' analysis of the 2018 TAF and 2018 ACS.

Notes: Quality-level determinations are based on comparisons of race and ethnicity distributions in the TAF to the ACS. We consider the TAF to be *high quality* when the TAF value is within the bounds of the 99 percent confidence interval on the ACS estimate and fewer than 20 percent of enrollees in the state have a missing value for race and ethnicity. We consider the TAF to be *moderate quality* when all of the following criteria are met: the TAF value is outside the ACS's 99 percent confidence interval, the percentage-point difference is less than 10 percentage points and the percent difference is less than 50 percent, and fewer than 20 percent of enrollees in the state have a missing value for race and ethnicity. We consider the TAF to be *low quality* when at least one of the following criteria are met: the percentage-point difference is more than 10 percentage points, or the percent difference is greater than 50 percent, or at least 20 percent of enrollees in the state have a missing value for race and ethnicity. See the Methods section for more details.

FIGURE 1

Number of States by Data-Quality Level for Each Race and Ethnicity Category in the TAF for Medicaid/CHIP-Enrolled Children Ages 0–18, 2018 and 2019



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Source: Authors' analysis of the 2018 and 2019 TAF and the 2018 and 2019 ACS.

Notes: Quality-level determinations are based on comparisons of race and ethnicity distributions in the TAF to the ACS. We consider the TAF to be *high quality* when the TAF value is within the bounds of the 99 percent confidence interval on the ACS estimate and fewer than 20 percent of enrollees in the state have a missing value for race and ethnicity. We consider the TAF to be *moderate quality* when all of the following criteria are met: the TAF value is outside the ACS's 99 percent confidence interval, the percentage-point difference is less than 10 percentage points and the percent difference is less than 50 percent, and fewer than 20 percent of enrollees in the state have a missing value for race and ethnicity. We consider the TAF to be *low quality* when at least one of the following criteria are met: the percentage-point difference is more than 10 percentage points, or the percent difference is greater than 50 percent, or at least 20 percent of enrollees in the state have a missing value for race and ethnicity. See the Methods section for more details.

State-Level Summaries of Race and Ethnicity Data Quality

Table 2 summarizes, for each state, the number and share of race and ethnicity categories that are high quality (column 1), the number and share of race and ethnicity categories that are moderate quality (column 2), and the number and share of race and ethnicity categories that are low quality (column 3) in the 2018 TAF (analogous results for 2019 shown in appendix table A.13). Only one state (North Carolina) has at least moderate-quality data for all race and ethnicity categories, and twenty-four states have low-quality data for all race and ethnicity categories.

TABLE 2

Number of Race and Ethnicity Categories Meeting Data-Quality Levels in the TAF for Medicaid/CHIP-Enrolled Children Ages 0–18 in the TAF, by State, 2018

State	(1) High-quality race and ethnicity categories		(2) Moderate-quality race and ethnicity categories		(3) Low-quality race and ethnicity categories	
	#	%	#	%	#	%
Alabama	0	0	0	0	7	100
Alaska	6	86	0	0	1	14
Arizona	0	0	0	0	7	100
Arkansas	0	0	0	0	7	100
California	2	29	3	43	2	29
Colorado	0	0	0	0	7	100
Connecticut	0	0	0	0	7	100
Delaware	5	71	0	0	2	29
DC	0	0	0	0	7	100
Florida	2	29	3	43	2	29
Georgia	3	43	1	14	3	43
Hawaii	0	0	0	0	7	100
Idaho	3	43	0	0	4	57
Illinois	2	29	1	14	4	57
Indiana	2	29	2	29	3	43
Iowa	0	0	0	0	7	100
Kansas	0	0	0	0	7	100
Kentucky	4	57	2	29	1	14
Louisiana	0	0	0	0	7	100
Maine	4	57	1	14	2	29
Maryland	0	0	0	0	7	100
Massachusetts	0	0	0	0	7	100
Michigan	0	0	0	0	7	100
Minnesota	0	0	0	0	7	100
Mississippi	3	43	1	14	3	43
Missouri	0	0	0	0	7	100
Montana	3	43	1	14	3	43
Nebraska	3	43	1	14	3	43
Nevada	2	29	3	43	2	29
New Hampshire	5	71	0	0	2	29
New Jersey	1	14	2	29	4	57
New Mexico	2	29	2	29	3	43
New York	0	0	0	0	7	100
North Carolina	3	43	4	57	0	0
North Dakota	5	71	0	0	2	29
Ohio	1	14	3	43	3	43
Oklahoma	2	29	1	14	4	57
Oregon	0	0	0	0	7	100
Pennsylvania	2	29	2	29	3	43
Rhode Island	0	0	0	0	7	100
South Carolina	0	0	0	0	7	100
South Dakota	3	43	1	14	3	43

State	(1) High-quality race and ethnicity categories		(2) Moderate-quality race and ethnicity categories		(3) Low-quality race and ethnicity categories	
	#	%	#	%	#	%
Tennessee	0	0	0	0	7	100
Texas	2	29	4	57	1	14
Utah	0	0	0	0	7	100
Vermont	4	57	0	0	3	43
Virginia	1	14	1	14	5	71
Washington	1	14	3	43	3	43
West Virginia	0	0	0	0	7	100
Wisconsin	0	0	0	0	7	100
Wyoming	0	0	0	0	7	100
Average	1.5	21	0.8	12	4.7	67

Source: Authors' analysis of the 2018 TAF and 2018 ACS.

Notes: Quality-level determinations are based on comparisons of race and ethnicity distributions in the TAF to the ACS. We consider the TAF to be *high quality* when the TAF value is within the bounds of the 99 percent confidence interval on the ACS estimate and fewer than 20 percent of enrollees in the state have a missing value for race and ethnicity. We consider the TAF to be *moderate quality* when all of the following criteria are met: the TAF value is outside the ACS's 99 percent confidence interval, the percentage-point difference is less than 10 percentage points and the percent difference is less than 50 percent, and fewer than 20 percent of enrollees in the state have a missing value for race and ethnicity. We consider the TAF to be *low quality* when at least one of the following criteria are met: the percentage-point difference is more than 10 percentage points, or the percent difference is greater than 50 percent, or at least 20 percent of enrollees in the state have a missing value for race and ethnicity. See the Methods section for more details.

Rates of Missing Data by State and Year

Table 3 shows the rate of missing race and ethnicity (i.e., cases where the RACE_ETHNCTY_CD variable takes on a value of "Null/Missing") in the 2018 and 2019 TAF (columns 1 and 2) and the change in the missing rate from 2018 to 2019 (column 3). The missing rate varies substantially across states, from 0 percent missing in five states (Delaware, South Dakota, Idaho, North Dakota, and North Carolina) to 100 percent missing in two states (Rhode Island and Tennessee). In most states, the missing rate is similar (within five percentage points) in 2018 and 2019. Only three states saw a substantial improvement in their missing rate between 2018 and 2019: Michigan (91 percent in 2018 vs. 8 percent in 2019; in 2018 only Hispanic enrollees were identified suggesting there was an issue with the underlying "race" variable), Missouri (47 percent vs. 27 percent), and Minnesota (22 percent vs. 9 percent).

TABLE 3

Share of Missing Values for Race and Ethnicity in the TAF for Medicaid/CHIP-Enrolled Children from Birth to Age 18, 2018–19

State	2018	2019	Percentage-point
	(%)	(%)	change from 2018 to 2019
Alabama	72	70	-2.0
Alaska	6	7	0.3
Arizona	35	35	0.3
Arkansas	34	35	0.6
California	8	8	0.4
Colorado	48	48	-0.9
Connecticut	46	48	1.5
Delaware	0	0	0.0
DC	36	39	2.5
Florida	15	16	0.9
Georgia	10	11	1.2
Hawaii	29	33	4.3
Idaho	0	0	0.0
Illinois	5	6	1.2
Indiana	10	11	0.6
Iowa	35	35	0.3
Kansas	76	76	0.2
Kentucky	14	15	0.5
Louisiana	31	34	3.2
Maine	12	13	1.2
Maryland	22	24	2.0
Massachusetts	50	51	1.0
Michigan	91	8	-83.5
Minnesota	22	9	-13.2
Mississippi	13	16	2.7
Missouri	47	27	-20.1
Montana	13	15	1.3
Nebraska	8	9	0.2
Nevada	4	3	-0.3
New Hampshire	12	15	2.5
New Jersey	7	8	0.5
New Mexico	1	1	0.0
New York	38	38	-0.3
North Carolina	0	0	0.0
North Dakota	0	0	-0.1
Ohio	9	9	-0.5
Oklahoma	6	5	-0.3
Oregon	23	22	-0.5
Pennsylvania	6	7	0.7
Rhode Island	100	100	0.0
South Carolina	40	44	3.5
South Dakota	0	0	0.0
Tennessee	100	100	0.0
Texas	14	15	1.4
Utah	47	50	3.6
Vermont	20	21	1.3
Virginia	2	2	0.5
Washington	12	11	-0.8
West Virginia	29	34	4.8

State	2018 (%)	2019 (%)	Percentage-point change from 2018 to 2019
Wisconsin	21	23	1.6
Wyoming	21	22	1.0

Source: Authors' analysis of the 2018 and 2019 TAF.

Notes: Missing values correspond to a value of "Null/Missing" for the RACE_ETHNCTY_CD variable in the TAF. See the Methods section for more details.

While the missing rate is an important metric, we caution researchers not to consider it as a standalone metric, because in some cases the meaning of missing values can be inferred, and in other cases a low missing rate may be misleading as to whether the nonmissing values are accurate. For example, in Colorado in the 2018 TAF, 46 percent of enrollees have a missing value, and 0 percent are classified as Hispanic. According to the ACS, 44 percent of enrollees are Hispanic. Therefore, it may be reasonable to assume that missing values correspond to Hispanic. On the other hand, Idaho has a missing rate of 0 percent, but also classifies 97.5 percent of its enrollees as white, when according to the ACS only 65 percent of enrollees are white—suggesting that Idaho's race and ethnicity data are of questionable quality despite the low missing rate.

For our primary analyses, we treated missing values as a separate category when comparing TAF race and ethnicity distributions to the ACS. As a sensitivity analysis, we assumed missing values were randomly distributed when calculating the TAF distributions and comparing them to the ACS, and the resulting states/categories with high-quality and low-quality data were largely similar using this approach (results available upon request). In additional analyses of missing rates, we assessed missing rates by county and by enrollee age within each state. We found no indication that missing rates vary systematically by county (results available upon request). In most states, we found missing rates to decline gradually with enrollee age, suggesting there may be more ability to study older children in some states (results available upon request).

Discussion

This report examines the quality of race and ethnicity data for Medicaid/CHIP-enrolled children in the 2018 and 2019 TAF by comparing the distribution of race and ethnicity in the TAF to estimates from the Census Bureau's ACS. We produce several exhibits that can be used to identify states where the data may be usable for different research objectives. If a researcher's objective is to study a specific racial or ethnic population in one state or multiple states, table 1 can be used to identify the state(s)

where that particular race and ethnicity category has high-quality and moderate-quality data. If a researcher's objective is to identify states where the race and ethnicity of all Medicaid/CHIP-enrolled children can feasibly be identified, table 2 can be used to identify the share of race and ethnicity categories of high quality, moderate quality, and low quality; table 3 can be used to identify the missing rate in each state.

Overall, we identify considerable variation in the quality of the TAF's race and ethnicity variable for children across states and across race and ethnicity categories. Approximately 40 to 50 percent of states have data of at least moderate quality for identifying AIAN, Asian, Black, Hispanic, and white children. Far fewer states have data of moderate quality or high quality for identifying H/PI or multiracial children. We also find considerable variation in the missing rate of the race and ethnicity variable among children, varying from 0 to 100 percent across states, but we note that the missing rate should not be used alone to assess data quality. Overall, we find little difference in data quality between the 2018 and 2019 TAF, suggesting more work will be necessary to ensure the data quality improves with time.

While the report is intended as a useful resource for researchers, it is not without limitations. We caution researchers to use our findings not as a definitive indicator of accurate race and ethnicity data, but rather as a tool to identify states with *potentially* usable race and ethnicity data, or to rule out states where the data are certainly *not* high-quality. Because we are unable to link individuals in the TAF to the ACS or to otherwise know individuals' "true" race and ethnicity, we are limited to comparing state-level distributions in the two data sources. Inaccuracies in individual-level race and ethnicity data cannot be identified by this approach. By comparing the state-level distributions, we identify states where there are major issues with race and ethnicity categories, but we cannot rule out other data-quality issues with the TAF even in states that appear to have high alignment between the TAF and the ACS. Additionally, while the TAF data offer granularity on race and ethnicity information that far exceeds that of many other data sources on Medicaid-enrolled children, the TAF's aggregated race and ethnicity variable takes on values for only seven race and ethnicity categories, therefore masking important nuance by potentially grouping individuals with very different racial or ethnic identities and lived experiences together. Therefore, in addition to improving the quality of the existing race and ethnicity categories in the TAF, more effort is needed to ensure smaller race and ethnicity categories are represented and identifiable in the data (e.g., by adding more categorizations and ensuring they are validly populated).

The ability of researchers to identify the race and ethnicity of children in Medicaid/CHIP administrative data is critical for understanding and ultimately addressing longstanding inequities in

children’s health care. While our findings reinforce the pressing need to improve the quality of race and ethnicity information in the TAF data, researchers cannot and should not wait for data quality to improve. Rather, this report and other data-quality resources such as the CMS DQ Atlas can be used to identify states where recent TAF data can yield meaningful information on Medicaid/CHIP-covered children’s patterns of service use, quality of care, and enrollment by race and ethnicity—and to stimulate actions in other states to improve race and ethnicity data collection and quality.

Appendix A. Additional Tables and Figures

TABLE A.1

Identification of Medicaid/CHIP-Enrolled Children Ages 0–18 in the TAF, 2018

Exclusion	Number observations remaining	Number excluded from last step	Share excluded from last step	Lower range share excluded from last step	Upper range share excluded from last step	Share of starting sample	Lower range share of starting sample	Upper range share of starting sample
All Enrollee Records in Demographics & Eligibility TAF file, 2018	98,239,375	0	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%
Exclude enrollees with missing birth date	95,991,759	2,247,616	2.3%	0.0%	24.0%	97.7%	76.0%	100.0%
Exclude enrollees older than 18	42,149,032	53,842,727	56.1%	31.4%	68.8%	42.9%	31.0%	67.8%
Exclude enrollees with missing eligibility info or enrollee ID	41,382,717	766,315	1.8%	0.0%	12.0%	42.1%	29.1%	67.8%
Exclude enrollees with restricted benefits	40,801,793	580,924	1.4%	0.0%	12.3%	41.5%	29.1%	66.8%
Exclude duplicate records for the same enrollee ⁺	40,708,336	93,457	0.2%	0.0%	3.4%	41.4%	29.1%	66.8%
If two records have the same enrollee ID but different race, exclude both records	40,704,839	3,497	0.0%	0.0%	0.1%	41.4%	29.1%	66.8%

Source: 2018 TAF.

Notes: ⁺When there are two records with the same enrollee ID and same race, we exclude one of these records. Additionally, when there are two records with the same enrollee ID and one has a missing race value and one has a nonmissing race value, we drop the record with the missing race value.

TABLE A.2

Identification of Medicaid/CHIP-Enrolled Children Ages 0–18 in the TAF, 2019

Exclusion	Number observations remaining	Number excluded from last step	Share excluded from last step	Lower range share excluded from last step	Upper range share excluded from last step	Share of starting sample	Lower range share of starting sample	Upper range share of starting sample
All Enrollee Records in Demographics & Eligibility TAF file, 2019	96,577,965	0	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%
Exclude enrollees with missing birth date	94,674,351	1,903,614	2.0%	0.0%	27.5%	98.0%	72.5%	100.0%
Exclude enrollees older than 18	41,463,034	53,211,317	56.2%	31.7%	70.1%	42.9%	22.7%	67.9%
Exclude enrollees with missing eligibility info or enrollee ID	40,690,032	773,002	1.9%	0.0%	12.3%	42.1%	22.7%	67.9%
Exclude enrollees with restricted benefits	40,117,810	572,222	1.4%	0.0%	12.8%	41.5%	20.9%	67.0%
Exclude duplicate records for the same enrollee ⁺	39,836,939	280,871	0.7%	0.0%	5.8%	41.2%	20.9%	67.0%
If two records have the same enrollee ID but different race, exclude both records	39,825,361	11,578	0.0%	0.0%	0.2%	41.2%	20.9%	67.0%

Source: 2019 TAF.

Notes: ⁺When there are two records with the same enrollee ID and same race, we exclude one of these records. Additionally, when there are two records with the same enrollee ID and one has a missing race value and one has a nonmissing race value, we drop the record with the missing race value.

TABLE A.3

Creation of Race and Ethnicity Categories in the ACS to Match Categories in the TAF

ACS Hispanic ethnicity indicator (<i>hispan</i>)	ACS race indicator(s) (<i>racwht, racblk, racamind, racasian, racpacs</i>)	ACS number of races (<i>racnum</i>)	Constructed race and ethnicity category for comparison to TAF
Yes	Any	Any	Hispanic
No	Black=Yes, all others=No	1	Black
No	white=Yes, all others=No	1	white
No	AIAN=Yes, all others=No	1	AIAN
No	Asian=Yes, all others=No	1	Asian
No	PI=Yes, all others=No	1	H/PI
No	Any	2+	Multiracial

Notes: The questions used to collect race and ethnicity information in the American Community Survey:

Is Person X of Hispanic, Latino, or Spanish origin?

- No, not of Hispanic, Latino, or Spanish origin
- Yes, Mexican, Mexican Am., Chicano
- Yes, Puerto Rican
- Yes, Cuban
- Yes, another Hispanic, Latino, or Spanish origin -- Print origin, for example, Argentinean, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on: _____

What is Person X's race? Mark (X) one or more boxes.

- White
- Black or African Am.
- American Indian or Alaska Native -- Print name of enrolled or principal tribe: _____
- Asian Indian
- Japanese
- Chinese
- Korean
- Filipino
- Vietnamese
- Other Asian -- Print race, for example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on: _____
- Native Hawaiian
- Guamanian or Chamorro
- Samoan
- Other Pacific Islander -- Print race, for example, Fijian, Tongan, and so on: _____
- Some other race -- Print race: _____

TABLE A.4

Share of Medicaid/CHIP Enrollees Ages 0–18 Who Are American Indian/Alaskan Native Only, Non-Hispanic by State, TAF and ACS, 2018–2019

State	2018						2019					
	TAF		ACS		(TAF-ACS)		TAF		ACS		(TAF-ACS)	
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage -point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage -point diff.	% diff.
Alabama	0.3	0.3	0.0	0.6	0.1	22.6	0.4	0.2	0.1	0.3	0.2	88.9
Alaska	35.3	37.3	30.9	43.8	-2.1	-5.5	35.1	35.8	28.9	42.7	-0.7	-1.9
Arizona	9.4	7.6	6.6	8.5	1.8	24.0	9.3	6.4	5.6	7.2	2.9	44.5
Arkansas	0.8	0.3	0.1	0.5	0.5	180.2	0.8	0.3	0.1	0.6	0.4	126.1
California	0.4	0.2	0.2	0.3	0.1	45.2	0.4	0.4	0.3	0.5	-0.1	-13.3
Colorado	0.8	0.9	0.5	1.3	-0.2	-17.7	0.8	0.9	0.5	1.3	-0.1	-12.4
Connecticut	0.6	0.4	-0.5	1.3	0.2	55.1	0.6	0.3	-0.2	0.8	0.3	84.1
Delaware	0.2	0.3	-0.2	0.8	-0.1	-45.8	0.2	0.0	0.0	0.0	0.2	n/a
DC	0.0	0.2	-0.2	0.6	-0.1	-96.2	0.0	0.0	0.0	0.0	0.0	n/a
Florida	0.2	0.1	0.0	0.2	0.1	60.3	0.2	0.2	0.1	0.2	0.0	11.7
Georgia	0.2	0.1	0.0	0.3	0.0	6.0	0.2	0.1	0.0	0.2	0.0	27.4
Hawaii	1.1	0.0	0.0	0.0	1.1	n/a	1.1	0.6	-0.5	1.6	0.5	89.2
Idaho	2.0	2.0	0.8	3.1	0.0	2.2	2.1	1.0	0.5	1.6	1.0	97.2
Illinois	0.2	0.1	0.0	0.2	0.1	46.9	0.2	0.1	0.0	0.2	0.1	103.7
Indiana	0.1	0.2	0.0	0.3	0.0	-19.0	0.1	0.1	0.0	0.3	0.0	-10.5
Iowa	1.3	0.3	-0.1	0.7	0.9	285.1	0.7	0.3	-0.1	0.8	0.3	98.7
Kansas	0.0	0.6	0.0	1.1	-0.6	-100.0	0.0	0.6	0.0	1.3	-0.6	-100.0
Kentucky	0.0	0.2	0.0	0.4	-0.1	-80.8	0.0	0.0	0.0	0.1	0.0	-21.0
Louisiana	0.4	0.4	0.1	0.6	0.0	5.6	0.4	0.5	0.2	0.7	-0.1	-20.7
Maine	0.9	1.3	0.1	2.6	-0.5	-34.8	0.9	0.9	-0.1	1.9	0.0	-0.4
Maryland	0.4	0.1	0.0	0.2	0.3	271.6	0.3	0.0	0.0	0.0	0.3	n/a
Massachusetts	0.2	0.1	0.0	0.2	0.1	171.8	0.2	0.2	0.0	0.4	0.0	0.9
Michigan	0.0	0.6	0.4	0.9	-0.6	-100.0	1.0	0.5	0.3	0.8	0.5	82.5
Minnesota	3.9	2.2	1.6	2.9	1.7	73.6	4.1	2.4	1.6	3.3	1.7	68.4
Mississippi	0.7	0.7	0.4	1.0	0.0	-1.7	0.6	0.6	0.2	0.9	0.1	17.1
Missouri	0.1	0.1	0.0	0.2	0.0	22.0	0.2	0.4	0.1	0.6	-0.2	-49.7
Montana	18.9	13.5	10.4	16.6	5.4	39.8	18.9	14.4	10.1	18.7	4.5	31.4
Nebraska	2.7	1.8	1.0	2.7	0.8	46.5	2.8	2.3	1.3	3.3	0.5	22.5
Nevada	1.3	1.1	0.5	1.6	0.3	23.8	1.3	1.1	0.7	1.6	0.1	12.2
New Hampshire	0.5	0.6	-0.2	1.4	-0.1	-20.5	0.5	0.0	0.0	0.0	0.5	n/a

State	2018						2019					
	TAF	ACS		(TAF-ACS)		TAF	ACS		(TAF-ACS)			
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage -point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage -point diff.	% diff.
New Jersey	0.4	0.0	0.0	0.1	0.3	1876.7	0.3	0.1	0.0	0.2	0.2	161.8
New Mexico	15.2	13.6	11.5	15.7	1.6	12.1	15.3	12.0	10.1	13.8	3.3	27.9
New York	0.4	0.4	0.2	0.6	0.0	2.5	0.4	0.3	0.1	0.4	0.1	53.6
North Carolina	1.3	1.4	1.1	1.7	-0.2	-11.2	1.3	1.7	1.4	2.0	-0.4	-26.1
North Dakota	19.0	19.2	12.6	25.8	-0.2	-0.8	19.4	21.6	12.9	30.4	-2.3	-10.5
Ohio	0.3	0.2	0.0	0.4	0.1	59.4	0.4	0.1	0.0	0.2	0.3	315.7
Oklahoma	17.0	9.5	8.2	10.8	7.5	78.8	17.0	9.7	8.4	11.0	7.3	75.0
Oregon	1.6	1.5	0.9	2.0	0.1	10.3	1.6	1.0	0.5	1.5	0.6	60.0
Pennsylvania	0.2	0.0	0.0	0.1	0.2	650.7	0.2	0.1	0.0	0.3	0.1	45.0
Rhode Island	0.0	0.1	-0.1	0.4	-0.1	-100.0	0.0	0.0	0.0	0.0	0.0	n/a
South Carolina	0.3	0.2	0.1	0.4	0.1	51.4	0.3	0.1	0.0	0.2	0.2	162.7
South Dakota	37.7	28.1	22.3	33.9	9.6	34.3	38.1	34.2	26.5	41.8	4.0	11.6
Tennessee	0.0	0.1	0.0	0.2	-0.1	-100.0	0.0	0.4	0.0	0.7	-0.4	-100.0
Texas	0.2	0.2	0.1	0.3	0.0	-0.5	0.2	0.1	0.1	0.2	0.1	47.8
Utah	1.6	1.7	0.6	2.8	-0.1	-4.7	1.5	1.3	0.7	2.0	0.2	15.3
Vermont	0.3	0.5	-0.5	1.6	-0.2	-43.3	0.3	0.5	-0.2	1.1	-0.2	-37.4
Virginia	0.4	0.2	0.0	0.4	0.2	104.3	0.4	0.1	0.0	0.1	0.3	595.5
Washington	3.0	1.5	1.1	1.8	1.6	109.3	3.2	2.1	1.5	2.6	1.1	53.0
West Virginia	0.0	0.0	0.0	0.0	0.0	n/a	0.0	0.4	-0.2	0.9	-0.3	-96.3
Wisconsin	1.7	1.3	0.8	1.9	0.4	29.0	1.7	1.4	0.8	2.1	0.3	18.0
Wyoming	9.3	6.7	3.8	9.6	2.6	38.2	9.3	4.4	1.7	7.1	4.9	109.9

Source: 2018-2019 TAF and 2018-2019 ACS.

Notes: Diff. = difference. Upper and lower limits based on 99 percent confidence intervals to account for sampling error in the ACS.

TABLE A.5

Share of Medicaid/CHIP Enrollees Ages 0–18 Who Are Asian, Non-Hispanic by State, TAF and ACS, 2018–2019

State	2018						2019					
	TAF		ACS		(TAF-ACS)		TAF		ACS		(TAF-ACS)	
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.
Alabama	0.3	0.6	0.3	0.9	-0.3	-52.4	0.3	0.8	0.3	1.3	-0.5	-59.7
Alaska	5.6	7.8	3.1	12.5	-2.2	-27.8	5.5	5.0	-1.6	11.6	0.5	10.3
Arizona	1.6	1.0	0.7	1.3	0.6	58.2	1.6	1.0	0.6	1.4	0.6	62.9
Arkansas	0.0	0.8	0.4	1.3	-0.8	-100.0	0.0	1.1	0.0	2.1	-1.1	-100.0
California	7.0	7.2	6.8	7.6	-0.2	-2.9	6.9	6.6	6.2	7.0	0.2	3.6
Colorado	1.9	2.2	1.4	2.9	-0.2	-11.5	2.0	2.2	1.5	3.0	-0.2	-11.0
Connecticut	3.1	3.0	2.1	3.9	0.1	3.8	3.0	2.9	1.8	4.1	0.1	4.6
Delaware	2.0	3.5	1.5	5.4	-1.5	-43.2	2.1	1.8	0.6	3.0	0.3	15.2
DC	0.5	1.1	-0.2	2.5	-0.7	-59.5	0.4	1.2	-0.3	2.8	-0.8	-67.0
Florida	1.1	1.5	1.2	1.8	-0.4	-28.1	1.1	1.6	1.2	1.9	-0.5	-31.3
Georgia	2.6	2.0	1.6	2.4	0.6	29.1	2.4	2.0	1.6	2.5	0.4	18.8
Hawaii	26.7	18.6	14.3	22.8	8.2	44.0	24.7	21.5	17.1	26.0	3.2	14.7
Idaho	0.0	0.4	-0.1	0.8	-0.4	-99.6	0.0	0.9	-0.1	2.0	-0.9	-99.9
Illinois	3.0	3.1	2.6	3.7	-0.1	-3.6	3.0	3.3	2.7	3.9	-0.3	-9.3
Indiana	0.0	2.0	1.2	2.8	-2.0	-100.0	0.0	1.8	1.0	2.6	-1.8	-100.0
Iowa	14.7	2.0	0.8	3.2	12.7	620.3	2.3	2.2	1.0	3.3	0.1	4.8
Kansas	0.0	1.5	0.7	2.3	-1.5	-100.0	0.0	2.6	1.5	3.6	-2.6	-100.0
Kentucky	1.1	1.5	0.8	2.1	-0.4	-25.2	1.1	1.6	1.0	2.2	-0.4	-27.7
Louisiana	0.0	0.9	0.5	1.3	-0.9	-96.0	0.0	1.1	0.7	1.6	-1.1	-99.8
Maine	0.9	0.5	-0.1	1.0	0.4	83.9	0.8	1.2	0.1	2.3	-0.4	-31.8
Maryland	4.1	3.7	2.9	4.5	0.4	11.4	4.1	4.1	3.1	5.0	0.0	0.9
Massachusetts	3.4	5.2	4.2	6.2	-1.8	-34.7	3.3	5.0	4.0	6.0	-1.7	-34.5
Michigan	0.0	1.7	1.2	2.2	-1.7	-100.0	0.5	2.0	1.4	2.6	-1.6	-77.5
Minnesota	6.5	5.8	4.5	7.1	0.7	11.5	7.9	7.6	5.9	9.3	0.3	3.7
Mississippi	0.7	0.6	0.1	1.1	0.1	12.4	0.7	0.7	0.2	1.2	0.0	-2.1
Missouri	0.7	0.7	0.4	1.0	0.0	-0.6	0.9	0.8	0.4	1.2	0.1	8.3
Montana	0.4	0.3	-0.1	0.7	0.1	44.7	0.4	0.4	-0.2	0.9	0.1	22.5
Nebraska	3.3	2.6	1.2	3.9	0.7	28.4	3.3	2.3	0.6	3.9	1.1	47.5
Nevada	2.9	3.6	2.4	4.9	-0.8	-21.4	2.9	3.6	2.5	4.8	-0.7	-20.1
New Hampshire	1.5	3.3	0.9	5.6	-1.8	-55.3	1.4	1.0	0.1	1.9	0.4	38.0
New Jersey	4.1	4.4	3.7	5.1	-0.3	-6.7	4.0	4.1	3.4	4.8	-0.1	-3.1
New Mexico	0.6	1.0	0.2	1.9	-0.4	-40.6	0.6	0.5	0.1	0.9	0.1	30.1

State	2018						2019					
	TAF		ACS		(TAF-ACS)		TAF		ACS		(TAF-ACS)	
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.
New York	7.0	7.5	6.9	8.0	-0.4	-6.0	6.9	8.0	7.4	8.6	-1.1	-14.3
North Carolina	1.8	2.0	1.6	2.5	-0.3	-12.7	1.8	1.3	0.9	1.7	0.5	34.7
North Dakota	2.0	0.7	-0.5	1.9	1.3	193.2	1.8	2.6	-2.1	7.3	-0.8	-30.0
Ohio	0.0	1.4	1.0	1.8	-1.4	-100.0	0.0	1.5	1.0	1.9	-1.5	-100.0
Oklahoma	1.8	0.8	0.4	1.2	1.0	117.6	1.9	1.6	1.0	2.1	0.3	19.9
Oregon	1.5	2.7	1.8	3.5	-1.1	-42.7	1.5	2.7	1.6	3.8	-1.2	-43.4
Pennsylvania	3.0	3.6	2.9	4.3	-0.6	-16.9	3.1	3.2	2.5	3.8	-0.1	-1.9
Rhode Island	0.0	2.9	1.3	4.6	-2.9	-100.0	0.0	0.9	-0.1	1.9	-0.9	-100.0
South Carolina	0.5	0.5	0.2	0.8	0.0	-5.1	0.5	1.0	0.5	1.4	-0.5	-50.6
South Dakota	1.9	0.2	-0.3	0.8	1.6	661.7	1.7	0.5	-0.5	1.4	1.3	278.4
Tennessee	0.0	1.0	0.6	1.4	-1.0	-100.0	0.0	1.3	0.8	1.8	-1.3	-100.0
Texas	1.7	2.2	1.9	2.5	-0.5	-22.1	1.6	2.0	1.7	2.2	-0.3	-17.3
Utah	0.0	1.7	0.5	2.8	-1.7	-100.0	0.0	0.9	0.2	1.6	-0.9	-100.0
Vermont	1.3	2.3	-3.1	7.7	-1.0	-41.6	1.3	0.9	-0.4	2.1	0.4	48.8
Virginia	3.9	3.2	2.4	4.0	0.7	21.3	3.9	3.2	2.5	3.9	0.7	22.1
Washington	3.4	4.9	4.0	5.8	-1.4	-29.5	3.4	4.0	3.3	4.8	-0.6	-15.3
West Virginia	0.1	0.3	-0.1	0.7	-0.2	-58.3	0.1	0.1	0.0	0.3	0.0	-20.4
Wisconsin	3.6	3.3	2.2	4.3	0.3	10.4	3.6	3.7	2.5	4.8	-0.1	-3.5
Wyoming	0.4	1.1	-0.9	3.1	-0.7	-65.4	0.4	0.0	0.0	0.0	0.4	n/a

Source: 2018–2019 TAF and 2018–2019 ACS.

Notes: Diff. = difference. Upper and lower limits based on 99 percent confidence intervals to account for sampling error in the ACS.

TABLE A.6

Share of Medicaid/CHIP Enrollees Ages 0–18 Who Are Black, Non-Hispanic by State, TAF and ACS, 2018–2019

State	2018						2019					
	TAF		ACS		(TAF-ACS)		TAF		ACS		(TAF-ACS)	
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.
Alabama	11.6	41.4	38.8	44.0	-29.8	-72.0	12.5	41.4	38.7	44.0	-28.8	-69.7
Alaska	3.5	3.4	-0.3	7.1	0.1	4.2	3.4	0.9	-0.5	2.4	2.5	268.1
Arizona	8.9	5.1	4.2	6.0	3.9	75.7	9.2	6.6	5.3	7.8	2.6	40.1
Arkansas	0.0	24.7	22.0	27.4	-24.7	-100.0	0.0	24.3	21.5	27.1	-24.3	-100.0
California	7.6	5.8	5.3	6.2	1.8	30.7	7.5	6.0	5.5	6.4	1.6	26.5
Colorado	6.5	5.1	3.7	6.4	1.5	29.3	6.8	5.8	4.5	7.1	1.0	17.8
Connecticut	18.8	15.7	13.5	17.9	3.1	19.7	18.5	17.2	14.5	19.9	1.3	7.5
Delaware	40.4	33.8	26.9	40.7	6.6	19.4	40.4	33.2	26.8	39.7	7.2	21.6
DC	59.4	77.1	69.9	84.2	-17.7	-22.9	56.3	73.6	67.0	80.2	-17.3	-23.5
Florida	26.5	26.2	25.0	27.4	0.3	1.0	26.5	25.4	24.1	26.7	1.1	4.4
Georgia	44.5	44.3	42.5	46.0	0.2	0.5	44.1	45.8	43.9	47.6	-1.7	-3.7
Hawaii	1.3	0.7	0.0	1.5	0.6	81.5	1.3	0.6	-0.2	1.5	0.6	96.1
Idaho	0.0	1.6	-0.2	3.3	-1.6	-99.9	0.0	1.5	0.1	3.0	-1.5	-99.9
Illinois	27.7	23.0	21.5	24.5	4.8	20.7	27.6	24.3	22.6	26.0	3.3	13.6
Indiana	21.2	17.3	15.4	19.2	3.9	22.4	21.2	18.7	16.4	21.0	2.5	13.4
Iowa	7.6	9.1	6.7	11.6	-1.5	-16.3	7.6	10.1	7.6	12.6	-2.6	-25.3
Kansas	0.0	10.3	7.5	13.2	-10.3	-100.0	0.0	9.9	7.3	12.6	-9.9	-100.0
Kentucky	12.7	12.1	10.3	13.9	0.7	5.4	12.8	12.9	10.9	14.8	0.0	-0.3
Louisiana	33.2	50.2	47.9	52.6	-17.0	-33.8	31.5	50.4	47.8	52.9	-18.9	-37.4
Maine	5.9	5.4	1.8	9.0	0.5	9.5	6.0	5.2	2.6	7.9	0.7	14.3
Maryland	34.2	40.7	38.2	43.2	-6.5	-16.0	33.0	40.6	37.9	43.2	-7.6	-18.7
Massachusetts	10.6	14.7	12.8	16.6	-4.1	-27.9	10.6	13.6	11.6	15.6	-3.0	-21.8
Michigan	0.0	26.2	24.3	28.0	-26.2	-100.0	30.0	25.8	23.8	27.7	4.2	16.5
Minnesota	20.6	21.4	18.6	24.3	-0.8	-3.9	25.0	21.8	18.2	25.3	3.2	14.7
Mississippi	54.0	57.8	55.0	60.7	-3.8	-6.6	52.3	57.4	54.5	60.4	-5.1	-8.9
Missouri	11.4	20.5	18.3	22.7	-9.1	-44.3	16.5	20.6	18.2	23.0	-4.1	-19.8
Montana	0.9	0.4	-0.6	1.3	0.5	143.6	0.9	1.1	-0.3	2.6	-0.3	-23.2
Nebraska	13.3	7.4	4.6	10.2	5.9	79.4	13.3	11.0	7.5	14.5	2.3	21.2
Nevada	20.5	14.4	11.9	16.8	6.1	42.5	21.1	16.8	13.9	19.7	4.2	25.1
New Hampshire	2.5	3.3	1.5	5.1	-0.8	-23.9	2.5	3.2	0.9	5.5	-0.7	-20.8
New Jersey	22.6	19.5	17.7	21.4	3.0	15.6	22.2	18.5	16.7	20.4	3.6	19.7
New Mexico	1.8	0.6	0.0	1.2	1.2	204.9	1.8	1.9	1.0	2.9	-0.1	-7.4

State	2018						2019					
	TAF	ACS		(TAF-ACS)		TAF	ACS		(TAF-ACS)			
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.
New York	15.4	18.3	17.3	19.3	-2.9	-15.8	15.4	18.7	17.6	19.8	-3.3	-17.6
North Carolina	34.2	31.0	29.3	32.7	3.2	10.4	34.2	32.9	31.0	34.7	1.3	4.1
North Dakota	10.8	10.9	2.7	19.1	-0.1	-0.7	10.7	1.9	-0.8	4.6	8.8	467.7
Ohio	29.9	24.7	23.1	26.3	5.2	21.0	30.4	24.4	22.7	26.2	6.0	24.6
Oklahoma	13.1	11.4	9.5	13.3	1.7	14.8	13.2	9.7	7.8	11.6	3.5	35.8
Oregon	2.2	3.5	2.4	4.7	-1.3	-36.1	2.2	3.0	1.7	4.2	-0.7	-25.0
Pennsylvania	24.5	20.2	18.5	21.9	4.3	21.2	24.1	20.4	18.7	22.2	3.7	17.9
Rhode Island	0.0	10.6	6.7	14.5	-10.6	-100.0	0.0	11.3	7.0	15.6	-11.3	-100.0
South Carolina	28.3	44.3	41.8	46.9	-16.1	-36.3	26.6	43.0	40.3	45.7	-16.5	-38.2
South Dakota	4.1	5.9	1.6	10.2	-1.8	-30.3	4.1	3.4	-0.6	7.4	0.7	20.3
Tennessee	0.0	24.6	22.8	26.5	-24.6	-100.0	0.0	24.3	22.2	26.3	-24.3	-100.0
Texas	13.3	14.9	14.1	15.6	-1.6	-10.7	13.4	14.3	13.5	15.1	-0.9	-6.2
Utah	1.7	3.8	2.0	5.6	-2.1	-54.4	1.7	3.1	1.3	4.8	-1.4	-45.6
Vermont	2.6	1.2	-0.3	2.8	1.4	110.9	2.7	2.2	-0.1	4.5	0.4	19.5
Virginia	36.8	31.0	28.7	33.3	5.8	18.6	36.4	32.3	29.9	34.7	4.1	12.6
Washington	6.7	5.7	4.5	6.8	1.0	17.7	6.9	6.1	4.8	7.3	0.8	13.4
West Virginia	3.7	4.5	2.7	6.2	-0.7	-16.2	3.5	4.7	2.9	6.6	-1.3	-26.8
Wisconsin	15.6	17.8	15.3	20.4	-2.2	-12.3	15.4	17.0	14.1	19.9	-1.6	-9.7
Wyoming	2.2	0.0	0.0	0.0	2.2	NA	2.2	0.2	-0.3	0.6	2.1	1147.1

Source: 2018–2019 TAF and 2018–2019 ACS.

Notes: Diff. = difference. Upper and lower limits based on 99 percent confidence intervals to account for sampling error in the ACS.

TABLE A.7

Share of Medicaid and CHIP Enrollees Ages 0–18 Who Are Hawaiian/Pacific Islander, Non-Hispanic by State, TAF and ACS, 2018–2019

State	2018						2019					
	TAF		ACS		(TAF-ACS)		TAF		ACS		(TAF-ACS)	
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage -point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage -point diff.	% diff.
Alabama	0.0	0.0	0.0	0.1	0.0	8.4	0.0	0.0	0.0	0.0	0.0	1042.5
Alaska	4.7	1.8	-0.3	4.0	2.9	156.0	4.8	3.8	0.0	7.7	1.0	24.9
Arizona	0.4	0.2	0.0	0.4	0.1	71.3	0.4	0.4	0.1	0.7	0.0	-6.0
Arkansas	0.7	0.5	0.1	0.9	0.2	37.2	0.7	0.4	-0.1	0.8	0.4	99.7
California	0.5	0.3	0.2	0.4	0.2	55.9	0.5	0.2	0.1	0.3	0.2	96.2
Colorado	0.3	0.1	0.0	0.2	0.2	272.1	0.3	0.1	-0.1	0.3	0.2	211.5
Connecticut	0.2	0.0	0.0	0.0	0.2	n/a	0.2	0.1	-0.1	0.2	0.1	123.0
Delaware	0.1	0.0	0.0	0.0	0.1	n/a	0.1	0.2	-0.3	0.8	-0.1	-43.8
DC	0.0	0.0	0.0	0.0	0.0	n/a	0.0	0.0	0.0	0.0	0.0	n/a
Florida	0.0	0.0	0.0	0.0	0.0	-100.0	0.0	0.0	0.0	0.1	0.0	-99.9
Georgia	0.1	0.2	0.0	0.4	-0.1	-54.0	0.1	0.0	0.0	0.0	0.1	2246.8
Hawaii	26.4	17.5	13.7	21.2	9.0	51.2	24.4	22.8	18.2	27.5	1.6	6.9
Idaho	0.0	0.1	-0.1	0.2	-0.1	-100.0	0.0	0.3	-0.2	0.7	-0.3	-100.0
Illinois	0.1	0.0	0.0	0.0	0.1	n/a	0.1	0.0	0.0	0.1	0.1	195.0
Indiana	2.6	0.1	0.0	0.1	2.5	4973.1	2.7	0.0	0.0	0.1	2.7	7852.2
Iowa	0.0	0.5	0.0	0.9	-0.5	-100.0	0.9	0.1	0.0	0.2	0.9	1315.4
Kansas	0.0	0.3	-0.3	0.9	-0.3	-100.0	0.0	0.0	0.0	0.0	0.0	n/a
Kentucky	0.1	0.0	0.0	0.1	0.0	61.8	0.1	0.0	0.0	0.0	0.1	n/a
Louisiana	0.0	0.0	0.0	0.0	0.0	n/a	0.0	0.0	0.0	0.0	0.0	-81.7
Maine	0.1	0.0	0.0	0.0	0.1	n/a	0.1	0.0	0.0	0.0	0.1	n/a
Maryland	0.1	0.0	0.0	0.1	0.1	230.2	0.1	0.0	0.0	0.1	0.1	451.7
Massachusetts	0.0	0.0	0.0	0.0	0.0	n/a	0.0	0.1	0.0	0.2	-0.1	-100.0
Michigan	0.0	0.0	0.0	0.1	0.0	-100.0	0.1	0.0	0.0	0.0	0.1	846.3
Minnesota	0.3	0.0	0.0	0.0	0.3	n/a	0.3	0.1	-0.1	0.2	0.2	458.8
Mississippi	0.0	0.0	0.0	0.0	0.0	n/a	0.0	0.0	0.0	0.0	0.0	n/a
Missouri	0.1	0.3	-0.1	0.7	-0.2	-59.2	0.2	0.3	0.1	0.6	-0.1	-47.4
Montana	0.1	0.0	0.0	0.0	0.1	n/a	0.1	0.0	0.0	0.0	0.1	n/a
Nebraska	0.1	0.1	0.0	0.1	0.1	134.1	0.1	0.5	-0.1	1.1	-0.3	-69.7
Nevada	1.4	0.2	0.0	0.5	1.2	526.7	1.6	0.8	0.3	1.2	0.8	110.2
New Hampshire	0.1	0.0	0.0	0.0	0.1	n/a	0.1	0.3	-0.4	0.9	-0.2	-63.7
New Jersey	0.0	0.0	0.0	0.0	0.0	n/a	0.0	0.1	0.0	0.2	-0.1	-100.0

State	2018						2019					
	TAF		ACS		(TAF-ACS)		TAF		ACS		(TAF-ACS)	
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage -point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage -point diff.	% diff.
New Mexico	0.0	0.1	-0.1	0.2	-0.1	-100.0	0.0	0.0	0.0	0.0	0.0	n/a
New York	1.6	0.0	0.0	0.0	1.5	9452.4	1.7	0.0	0.0	0.0	1.7	22623.0
North Carolina	0.1	0.1	0.0	0.2	0.0	-40.4	0.1	0.0	0.0	0.1	0.0	132.7
North Dakota	0.2	0.0	0.0	0.0	0.2	n/a	0.2	0.0	0.0	0.0	0.2	n/a
Ohio	1.9	0.0	0.0	0.0	1.9	n/a	2.0	0.0	0.0	0.0	2.0	29565.4
Oklahoma	0.4	0.0	0.0	0.1	0.4	818.8	0.4	0.1	0.0	0.2	0.3	437.2
Oregon	0.6	0.7	0.2	1.1	-0.1	-15.5	0.5	0.4	0.1	0.7	0.2	53.8
Pennsylvania	0.0	0.0	0.0	0.0	0.0	n/a	0.1	0.0	0.0	0.1	0.0	121.7
Rhode Island	0.0	0.0	0.0	0.0	0.0	n/a	0.0	0.0	0.0	0.0	0.0	n/a
South Carolina	0.0	0.1	0.0	0.2	-0.1	-53.2	0.1	0.1	0.0	0.1	0.0	-5.8
South Dakota	0.3	0.0	0.0	0.0	0.3	n/a	0.3	0.0	0.0	0.0	0.3	n/a
Tennessee	0.0	0.2	0.0	0.4	-0.2	-100.0	0.0	0.1	0.0	0.1	-0.1	-100.0
Texas	0.1	0.0	0.0	0.1	0.0	62.5	0.1	0.1	0.0	0.1	0.0	45.8
Utah	0.6	1.0	0.3	1.7	-0.5	-44.0	0.5	1.0	0.2	1.8	-0.5	-49.8
Vermont	0.0	0.0	0.0	0.0	0.0	n/a	0.0	0.0	0.0	0.0	0.0	n/a
Virginia	0.9	0.1	0.0	0.3	0.8	643.1	0.9	0.1	-0.1	0.2	0.8	1089.6
Washington	2.9	0.9	0.5	1.3	2.0	221.0	3.1	1.2	0.7	1.8	1.8	147.7
West Virginia	0.0	0.0	0.0	0.0	0.0	n/a	0.0	0.0	0.0	0.0	0.0	n/a
Wisconsin	0.1	0.0	0.0	0.1	0.0	124.7	0.1	0.0	0.0	0.1	0.0	225.9
Wyoming	0.2	0.0	0.0	0.0	0.2	n/a	0.2	0.0	0.0	0.0	0.2	n/a

Source: 2018–2019 TAF and 2018–2019 ACS.

Notes: Diff. = difference. Upper and lower limits based on 99 percent confidence intervals to account for sampling error in the ACS.

TABLE A.8

Share of Medicaid/CHIP Enrollees Ages 0–18 Who Are Hispanic by State, TAF and ACS, 2018–2019

State	2018						2019					
	TAF		ACS		(TAF-ACS)		TAF		ACS		(TAF-ACS)	
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.
Alabama	1.9	11.0	9.2	12.8	-9.1	-82.5	2.2	10.5	8.6	12.4	-8.3	-78.8
Alaska	2.9	6.9	1.2	12.5	-4.0	-58.0	2.9	8.9	3.5	14.2	-6.0	-67.5
Arizona	0.6	58.7	56.8	60.7	-58.1	-99.0	0.5	58.6	56.5	60.7	-58.2	-99.2
Arkansas	20.6	14.7	12.6	16.8	5.9	39.8	20.4	15.2	13.0	17.4	5.2	34.3
California	62.2	68.8	68.0	69.5	-6.6	-9.5	62.1	68.8	68.0	69.6	-6.8	-9.8
Colorado	12.3	48.9	46.2	51.5	-36.6	-74.9	12.2	48.8	46.0	51.6	-36.6	-74.9
Connecticut	0.0	44.1	40.8	47.3	-44.1	-100.0	0.0	42.6	39.1	46.1	-42.6	-100.0
Delaware	23.1	22.9	17.4	28.3	0.2	1.1	23.4	27.9	21.9	33.8	-4.5	-16.1
DC	3.7	17.8	10.8	24.8	-14.1	-79.2	4.2	19.6	13.7	25.4	-15.4	-78.6
Florida	33.9	38.0	36.8	39.3	-4.1	-10.7	33.4	37.7	36.3	39.0	-4.2	-11.2
Georgia	1.7	19.9	18.5	21.4	-18.2	-91.6	2.1	19.6	18.0	21.1	-17.4	-89.1
Hawaii	3.2	21.2	16.2	26.1	-17.9	-84.7	3.9	20.1	14.9	25.3	-16.2	-80.5
Idaho	0.0	27.5	23.3	31.8	-27.5	-99.9	0.0	23.2	19.4	27.0	-23.2	-99.9
Illinois	20.8	36.5	34.8	38.1	-15.7	-43.0	19.0	35.1	33.3	36.9	-16.1	-45.9
Indiana	9.7	16.4	14.6	18.2	-6.7	-40.9	9.4	14.6	12.6	16.6	-5.1	-35.3
Iowa	41.4	16.2	13.5	18.9	25.3	156.1	12.6	15.1	12.2	18.1	-2.6	-17.0
Kansas	23.8	27.6	24.1	31.1	-3.7	-13.6	23.7	26.6	23.2	30.0	-2.9	-11.0
Kentucky	5.7	7.8	6.3	9.2	-2.1	-26.4	5.8	7.9	6.3	9.5	-2.1	-26.2
Louisiana	8.6	7.7	6.4	9.0	0.9	11.3	8.9	7.5	6.1	8.9	1.4	19.1
Maine	3.0	1.7	0.3	3.1	1.3	80.2	3.1	3.7	1.4	5.9	-0.6	-16.2
Maryland	20.5	23.1	20.8	25.3	-2.5	-10.9	20.7	24.5	22.0	26.9	-3.7	-15.3
Massachusetts	6.9	35.5	33.1	37.9	-28.5	-80.4	6.6	36.1	33.5	38.8	-29.5	-81.7
Michigan	9.0	11.6	10.3	12.9	-2.6	-22.5	9.0	11.7	10.3	13.2	-2.8	-23.5
Minnesota	8.6	14.9	12.4	17.4	-6.4	-42.6	11.2	15.0	12.4	17.6	-3.8	-25.2
Mississippi	0.7	4.4	3.2	5.6	-3.7	-84.0	0.8	5.0	3.7	6.3	-4.3	-84.4
Missouri	8.1	7.9	6.4	9.3	0.2	2.5	10.8	8.5	7.0	10.1	2.3	26.5
Montana	4.7	6.2	3.0	9.4	-1.5	-24.9	4.7	8.9	5.3	12.4	-4.2	-47.4
Nebraska	27.6	27.8	23.1	32.5	-0.2	-0.8	27.5	28.7	23.9	33.5	-1.1	-4.0
Nevada	46.5	52.2	49.0	55.5	-5.8	-11.0	46.3	50.8	47.4	54.2	-4.5	-8.9
New Hampshire	7.3	10.5	6.3	14.6	-3.1	-30.0	7.5	10.1	6.0	14.3	-2.6	-26.0
New Jersey	31.6	44.4	42.2	46.6	-12.8	-28.8	31.7	42.6	40.4	44.9	-10.9	-25.6
New Mexico	60.9	65.9	62.7	69.2	-5.0	-7.6	60.9	67.2	64.0	70.5	-6.4	-9.5

State	2018						2019					
	TAF	ACS		(TAF-ACS)		TAF	ACS		(TAF-ACS)			
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.
New York	9.6	35.9	34.7	37.1	-26.2	-73.1	9.3	33.4	32.1	34.7	-24.1	-72.2
North Carolina	20.1	24.1	22.4	25.7	-4.0	-16.5	20.5	23.0	21.4	24.6	-2.6	-11.1
North Dakota	6.3	5.3	2.2	8.3	1.0	19.5	6.4	9.9	4.3	15.6	-3.6	-35.9
Ohio	6.0	8.9	7.8	9.9	-2.9	-32.3	6.1	8.7	7.6	9.8	-2.6	-30.3
Oklahoma	23.3	25.1	22.6	27.6	-1.8	-7.2	23.6	23.8	21.3	26.3	-0.2	-0.7
Oregon	39.7	34.1	31.2	37.0	5.6	16.3	41.2	31.5	28.3	34.6	9.8	31.0
Pennsylvania	16.6	20.2	18.6	21.8	-3.6	-17.8	16.9	20.5	18.9	22.2	-3.7	-17.8
Rhode Island	0.0	44.4	38.5	50.3	-44.4	-100.0	0.0	43.5	36.3	50.7	-43.5	-100.0
South Carolina	5.7	11.5	9.8	13.3	-5.8	-50.6	5.1	12.4	10.6	14.3	-7.3	-58.6
South Dakota	6.5	10.1	5.9	14.3	-3.6	-35.3	6.6	6.8	2.9	10.7	-0.2	-2.7
Tennessee	0.0	13.0	11.6	14.4	-13.0	-100.0	0.0	14.3	12.6	16.0	-14.3	-100.0
Texas	54.6	63.9	62.9	64.8	-9.3	-14.6	53.8	63.0	61.9	64.0	-9.1	-14.5
Utah	20.1	27.4	23.3	31.5	-7.3	-26.7	18.8	29.8	25.6	34.0	-11.0	-36.9
Vermont	0.5	1.7	0.5	2.8	-1.2	-71.1	0.5	1.3	0.0	2.7	-0.9	-65.4
Virginia	4.6	19.9	17.9	21.9	-15.4	-77.1	4.5	19.8	17.6	22.0	-15.3	-77.2
Washington	29.6	35.1	33.0	37.2	-5.5	-15.6	30.2	34.5	32.3	36.7	-4.3	-12.3
West Virginia	0.0	2.3	1.1	3.5	-2.3	-100.0	0.0	2.3	1.0	3.5	-2.3	-100.0
Wisconsin	17.0	19.3	16.8	21.7	-2.2	-11.5	16.6	18.3	15.4	21.3	-1.7	-9.4
Wyoming	12.1	25.7	17.1	34.4	-13.6	-52.9	11.7	26.1	16.4	35.8	-14.4	-55.0

Source: 2018–2019 TAF and 2018–2019 ACS.

Notes: Diff. = difference. Upper and lower limits based on 99 percent confidence intervals to account for sampling error in the ACS.

TABLE A.9

Share of Medicaid/CHIP Enrollees Ages 0–18 Who Are Multiracial, Non-Hispanic by State, TAF and ACS, 2018–2019

State	2018						2019					
	TAF		ACS		(TAF-ACS)		TAF		ACS		(TAF-ACS)	
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.
Alabama	0.0	3.8	2.8	4.7	-3.8	-100.0	0.0	4.0	2.9	5.1	-4.0	-100.0
Alaska	8.3	9.3	5.4	13.2	-1.0	-10.9	8.2	12.6	7.0	18.2	-4.4	-34.6
Arizona	0.0	3.0	2.3	3.6	-3.0	-100.0	0.0	3.6	2.9	4.3	-3.6	-100.0
Arkansas	0.0	5.6	4.3	7.0	-5.6	-99.6	0.0	4.9	3.5	6.4	-4.9	-99.7
California	0.0	3.1	2.8	3.4	-3.1	-100.0	0.0	3.1	2.8	3.3	-3.1	-100.0
Colorado	0.0	4.7	3.7	5.7	-4.7	-100.0	0.0	3.6	2.6	4.6	-3.6	-100.0
Connecticut	0.0	4.9	3.5	6.3	-4.9	-100.0	0.0	3.7	2.5	5.0	-3.7	-100.0
Delaware	0.0	4.3	2.2	6.4	-4.3	-100.0	0.0	6.2	3.7	8.7	-6.2	-100.0
DC	0.0	1.4	0.1	2.6	-1.4	-100.0	0.0	2.5	0.3	4.8	-2.5	-100.0
Florida	0.0	4.0	3.5	4.5	-4.0	-100.0	0.0	4.4	3.8	5.1	-4.4	-100.0
Georgia	0.0	4.5	3.8	5.3	-4.5	-100.0	0.0	4.0	3.3	4.6	-4.0	-100.0
Hawaii	0.0	33.2	28.2	38.2	-33.2	-100.0	0.0	25.7	21.1	30.2	-25.7	-100.0
Idaho	0.0	3.4	1.7	5.1	-3.4	-100.0	0.0	3.8	2.3	5.3	-3.8	-100.0
Illinois	0.0	4.5	3.8	5.2	-4.5	-99.3	0.0	4.0	3.3	4.7	-3.9	-99.4
Indiana	0.0	6.2	5.1	7.3	-6.2	-100.0	0.0	6.0	4.8	7.3	-6.0	-100.0
Iowa	0.0	6.9	4.9	8.9	-6.9	-99.8	2.6	6.4	4.6	8.3	-3.8	-59.4
Kansas	0.0	9.0	6.7	11.3	-9.0	-100.0	0.0	6.4	4.8	8.0	-6.4	-100.0
Kentucky	0.0	5.0	3.9	6.2	-5.0	-100.0	0.0	5.7	4.4	7.0	-5.7	-100.0
Louisiana	0.0	4.9	3.9	6.0	-4.9	-100.0	0.0	3.9	2.9	4.9	-3.9	-100.0
Maine	0.0	7.6	4.3	10.9	-7.6	-100.0	0.0	3.7	1.5	5.9	-3.7	-100.0
Maryland	0.0	5.4	4.3	6.5	-5.4	-100.0	0.0	5.5	4.5	6.6	-5.5	-100.0
Massachusetts	0.0	4.4	3.4	5.3	-4.4	-100.0	0.0	4.6	3.6	5.6	-4.6	-100.0
Michigan	0.0	6.3	5.3	7.4	-6.3	-100.0	0.0	7.1	6.0	8.1	-7.1	-100.0
Minnesota	0.0	6.9	5.3	8.5	-6.9	-99.9	0.0	7.6	5.7	9.6	-7.6	-100.0
Mississippi	0.0	3.3	2.1	4.4	-3.3	-100.0	0.0	3.2	1.8	4.6	-3.2	-100.0
Missouri	0.0	7.6	6.3	9.0	-7.6	-100.0	0.0	5.8	4.6	7.0	-5.8	-100.0
Montana	0.9	6.4	3.7	9.1	-5.5	-86.5	0.9	5.1	1.8	8.5	-4.2	-82.6
Nebraska	0.0	7.8	4.7	10.8	-7.8	-100.0	0.0	6.5	4.0	9.1	-6.5	-100.0
Nevada	0.0	6.7	5.1	8.3	-6.7	-99.7	0.0	5.8	4.3	7.2	-5.8	-100.0
New Hampshire	1.9	4.7	2.1	7.3	-2.8	-59.4	2.0	5.1	2.8	7.5	-3.2	-62.1
New Jersey	0.0	2.9	2.2	3.6	-2.9	-100.0	0.0	3.1	2.3	4.0	-3.1	-100.0
New Mexico	0.0	1.6	0.9	2.4	-1.6	-100.0	0.0	3.0	1.6	4.3	-3.0	-100.0

State	2018						2019					
	TAF	ACS		(TAF-ACS)		TAF	ACS		(TAF-ACS)			
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.
New York	0.0	3.6	3.2	4.1	-3.6	-99.8	0.0	4.1	3.6	4.6	-4.1	-99.8
North Carolina	4.0	5.4	4.6	6.2	-1.5	-26.9	4.0	5.4	4.6	6.2	-1.3	-24.9
North Dakota	9.1	7.4	2.2	12.5	1.8	23.9	9.1	10.1	1.2	19.0	-1.0	-10.0
Ohio	0.0	8.8	7.8	9.8	-8.8	-100.0	0.0	8.6	7.5	9.7	-8.6	-100.0
Oklahoma	0.0	11.2	9.6	12.8	-11.2	-100.0	0.0	13.3	11.5	15.2	-13.3	-100.0
Oregon	0.0	5.9	4.6	7.3	-5.9	-100.0	0.0	7.0	5.5	8.5	-7.0	-100.0
Pennsylvania	0.0	6.3	5.4	7.3	-6.3	-99.6	0.0	6.0	5.1	6.9	-6.0	-99.6
Rhode Island	0.0	4.3	1.9	6.6	-4.3	-100.0	0.0	6.1	3.1	9.1	-6.1	-100.0
South Carolina	0.0	5.8	4.6	7.0	-5.8	-100.0	0.0	5.1	4.0	6.2	-5.1	-100.0
South Dakota	0.0	8.8	1.8	15.7	-8.8	-100.0	0.0	5.9	1.3	10.4	-5.9	-100.0
Tennessee	0.0	5.0	4.1	5.9	-5.0	-100.0	0.0	5.8	4.7	6.9	-5.8	-100.0
Texas	0.6	2.2	1.9	2.5	-1.7	-74.1	0.6	2.6	2.3	2.9	-2.0	-77.1
Utah	0.0	4.8	3.1	6.5	-4.8	-100.0	0.0	4.0	2.5	5.5	-4.0	-100.0
Vermont	0.0	2.6	0.1	5.1	-2.6	-100.0	0.0	4.7	0.9	8.6	-4.7	-100.0
Virginia	0.0	6.8	5.5	8.0	-6.8	-100.0	0.0	7.1	5.9	8.3	-7.1	-100.0
Washington	2.2	8.8	7.6	10.1	-6.7	-75.3	2.3	8.3	7.1	9.5	-6.0	-72.5
West Virginia	1.9	6.8	4.6	9.0	-4.9	-71.9	1.8	6.6	4.3	8.9	-4.8	-72.4
Wisconsin	0.0	5.7	4.3	7.2	-5.7	-99.9	0.0	6.3	4.6	7.9	-6.3	-99.9
Wyoming	0.0	3.4	-0.4	7.2	-3.4	-100.0	0.0	8.8	2.6	15.1	-8.8	-100.0

Source: 2018–2019 TAF and 2018–2019 ACS.

Notes: Diff. = difference. Upper and lower limits based on 99 percent confidence intervals to account for sampling error in the ACS.

TABLE A.10

Share of Medicaid/CHIP Enrollees Ages 0–18 Who Are White, Non-Hispanic by State, TAF and ACS, 2018–2019

State	2018						2019					
	TAF		ACS		(TAF-ACS)		TAF		ACS		(TAF-ACS)	
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.
Alabama	13.7	42.4	39.9	45.0	-28.7	-67.6	14.5	42.7	40.2	45.2	-28.2	-66.1
Alaska	33.3	33.4	26.5	40.4	-0.1	-0.4	33.4	32.8	26.1	39.4	0.6	1.8
Arizona	44.4	24.4	22.7	26.1	20.1	82.3	44.1	23.3	21.6	25.1	20.7	88.7
Arkansas	43.7	53.1	50.2	56.0	-9.3	-17.6	43.3	53.7	50.6	56.8	-10.4	-19.4
California	14.7	14.4	13.9	15.0	0.2	1.6	14.5	14.6	14.0	15.2	-0.1	-0.6
Colorado	29.8	37.9	35.5	40.4	-8.2	-21.5	30.3	38.5	35.9	41.0	-8.2	-21.2
Connecticut	30.9	31.2	28.4	34.0	-0.2	-0.8	29.8	32.2	29.1	35.3	-2.4	-7.4
Delaware	34.2	34.0	27.5	40.5	0.2	0.6	33.8	30.3	24.4	36.3	3.5	11.6
DC	0.2	2.5	0.9	4.0	-2.3	-92.9	0.3	2.1	0.7	3.6	-1.8	-85.9
Florida	23.7	29.4	28.3	30.5	-5.8	-19.6	23.3	30.1	28.9	31.3	-6.8	-22.7
Georgia	41.0	28.5	27.0	29.9	12.5	43.9	39.8	28.0	26.5	29.5	11.8	42.2
Hawaii	12.2	8.9	5.8	12.0	3.3	37.3	11.4	8.5	5.5	11.5	2.9	34.4
Idaho	97.9	65.1	60.6	69.6	32.8	50.4	97.9	69.1	64.9	73.2	28.8	41.6
Illinois	43.4	32.5	31.0	33.9	11.0	33.8	44.1	32.8	31.2	34.4	11.3	34.4
Indiana	56.5	57.5	55.2	59.8	-1.0	-1.8	56.0	58.4	55.8	61.0	-2.4	-4.2
Iowa	0.2	64.7	61.2	68.2	-64.5	-99.7	38.3	65.4	61.7	69.1	-27.1	-41.4
Kansas	0.0	50.6	46.9	54.4	-50.6	-100.0	0.0	53.4	49.7	57.0	-53.4	-100.0
Kentucky	66.0	72.4	70.0	74.8	-6.3	-8.8	65.4	71.6	69.1	74.2	-6.3	-8.8
Louisiana	26.7	35.4	33.1	37.6	-8.6	-24.4	24.9	36.3	34.0	38.7	-11.4	-31.4
Maine	77.7	83.1	78.2	88.0	-5.4	-6.5	76.4	83.9	79.6	88.2	-7.6	-9.0
Maryland	18.2	26.3	24.3	28.3	-8.1	-30.7	17.3	25.1	23.0	27.2	-7.7	-30.9
Massachusetts	29.1	38.9	36.6	41.2	-9.8	-25.2	28.5	38.3	35.8	40.8	-9.8	-25.5
Michigan	0.0	53.3	51.3	55.3	-53.3	-100.0	52.0	52.7	50.6	54.8	-0.7	-1.4
Minnesota	37.8	48.5	45.4	51.5	-10.7	-22.1	42.3	45.4	42.1	48.7	-3.1	-6.9
Mississippi	31.0	32.9	30.3	35.6	-1.9	-5.9	29.9	32.9	30.2	35.7	-3.1	-9.3
Missouri	32.5	62.5	60.0	65.0	-30.1	-48.1	44.4	63.3	60.6	65.9	-18.9	-29.8
Montana	61.0	72.8	68.0	77.6	-11.8	-16.3	59.5	70.1	64.4	75.7	-10.5	-15.1
Nebraska	44.7	52.6	47.7	57.5	-7.9	-15.1	44.3	48.8	44.0	53.6	-4.4	-9.1
Nevada	23.7	20.9	18.4	23.4	2.8	13.4	23.4	20.2	17.6	22.8	3.2	15.8
New Hampshire	74.0	77.6	72.4	82.9	-3.6	-4.7	71.3	80.3	75.3	85.2	-8.9	-11.1
New Jersey	34.2	27.7	25.9	29.5	6.5	23.3	34.1	29.8	27.9	31.7	4.3	14.3
New Mexico	20.2	17.2	14.6	19.8	3.0	17.7	20.2	15.3	12.9	17.7	4.9	31.7

State	2018						2019					
	TAF	ACS		(TAF-ACS)		TAF	ACS		(TAF-ACS)			
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Percentage-point diff.	% diff.
New York	27.9	33.5	32.4	34.5	-5.6	-16.8	28.5	34.6	33.5	35.8	-6.1	-17.7
North Carolina	38.3	35.2	33.6	36.8	3.1	8.7	37.9	35.3	33.7	37.0	2.5	7.1
North Dakota	52.3	56.6	46.9	66.2	-4.3	-7.6	52.2	53.8	42.9	64.8	-1.6	-3.0
Ohio	52.4	55.7	54.0	57.5	-3.3	-5.9	52.3	56.3	54.4	58.1	-4.0	-7.1
Oklahoma	38.8	41.6	39.0	44.2	-2.8	-6.7	38.5	41.7	39.0	44.3	-3.1	-7.5
Oregon	31.8	51.2	48.3	54.1	-19.4	-37.9	30.7	54.3	51.1	57.5	-23.6	-43.5
Pennsylvania	49.5	49.4	47.5	51.2	0.1	0.2	48.8	49.4	47.5	51.3	-0.6	-1.3
Rhode Island	0.0	36.2	30.8	41.6	-36.2	-100.0	0.0	36.9	30.6	43.3	-36.9	-100.0
South Carolina	24.7	37.1	34.7	39.4	-12.4	-33.5	23.4	38.0	35.5	40.4	-14.6	-38.4
South Dakota	49.5	46.5	39.2	53.7	3.0	6.4	49.1	49.3	41.5	57.0	-0.2	-0.3
Tennessee	0.0	55.3	53.2	57.3	-55.3	-100.0	0.0	53.3	51.0	55.5	-53.3	-100.0
Texas	15.6	16.5	15.8	17.2	-0.9	-5.5	14.8	17.7	17.0	18.5	-2.9	-16.5
Utah	29.5	59.3	55.1	63.5	-29.8	-50.3	27.3	59.6	55.4	63.8	-32.3	-54.1
Vermont	75.3	91.2	85.1	97.3	-15.9	-17.4	74.1	90.3	85.6	95.1	-16.2	-18.0
Virginia	51.5	38.5	36.3	40.8	13.0	33.7	51.5	36.8	34.6	39.1	14.7	39.8
Washington	39.9	42.9	40.9	45.0	-3.0	-6.9	39.6	43.5	41.4	45.6	-3.9	-9.0
West Virginia	64.9	85.6	82.6	88.5	-20.7	-24.1	60.5	85.8	82.7	88.9	-25.3	-29.5
Wisconsin	41.1	52.5	49.5	55.4	-11.4	-21.6	40.2	53.2	49.8	56.5	-13.0	-24.4
Wyoming	54.9	62.8	53.7	71.9	-7.9	-12.6	54.1	60.4	50.5	70.3	-6.3	-10.5

Source: 2018–2019 TAF and 2018–2019 ACS.

Notes: Diff. = difference. Upper and lower limits based on 99 percent confidence intervals to account for sampling error in the ACS.

TABLE A.11

Share of Medicaid/CHIP Enrollees Ages 0–18 Who Are Another Race, Non-Hispanic, or Missing Race by State, TAF and ACS, 2018–2019

State	Another Race, Non-Hispanic								Missing Race			
	2018				2019				2018		2019	
	TAF		ACS		TAF		ACS		TAF	ACS	TAF	ACS
	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Share (%)	Share (%)	Lower limit (%)	Upper limit (%)	Share (%)	Share (%)	Share (%)	Share (%)
Alabama	0.0	0.4	0.0	0.8	0.0	0.4	0.2	0.7	72.1	0.0	70.0	0.0
Alaska	0.0	0.0	0.0	0.0	0.0	0.2	-0.1	0.5	6.3	0.0	6.6	0.0
Arizona	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	34.7	0.0	35.0	0.0
Arkansas	0.0	0.3	0.0	0.6	0.0	0.1	0.0	0.3	34.2	0.0	34.8	0.0
California	0.0	0.2	0.2	0.3	0.0	0.3	0.2	0.4	7.8	0.0	8.2	0.0
Colorado	0.0	0.3	-0.1	0.7	0.0	0.2	0.0	0.4	48.5	0.0	47.6	0.0
Connecticut	0.0	0.8	0.3	1.2	0.0	1.0	0.4	1.6	46.4	0.0	47.9	0.0
Delaware	0.0	1.2	0.0	2.4	0.0	0.3	-0.1	0.7	0.0	0.0	0.0	0.0
District of Columbia	0.0	0.1	-0.1	0.2	0.0	0.9	-0.5	2.3	36.2	0.0	38.8	0.0
Florida	0.0	0.7	0.4	0.9	0.0	0.6	0.4	0.9	14.6	0.0	15.5	0.0
Georgia	0.0	0.5	0.3	0.7	0.0	0.5	0.2	0.8	10.1	0.0	11.3	0.0
Hawaii	0.0	0.0	0.0	0.0	0.0	0.2	-0.1	0.6	29.0	0.0	33.3	0.0
Idaho	0.0	0.0	0.0	0.0	0.0	0.2	-0.2	0.5	0.1	0.0	0.1	0.0
Illinois	0.0	0.3	0.1	0.4	0.0	0.3	0.1	0.5	4.7	0.0	5.9	0.0
Indiana	0.0	0.4	0.1	0.7	0.0	0.3	0.1	0.5	9.9	0.0	10.6	0.0
Iowa	0.0	0.3	-0.1	0.6	0.0	0.3	-0.1	0.7	34.8	0.0	35.1	0.0
Kansas	0.0	0.1	0.0	0.3	0.0	0.6	0.1	1.0	76.2	0.0	76.3	0.0
Kentucky	0.0	1.0	0.4	1.7	0.0	0.3	0.1	0.6	14.3	0.0	14.8	0.0
Louisiana	0.0	0.5	0.1	0.9	0.0	0.2	0.0	0.4	31.0	0.0	34.2	0.0
Maine	0.0	0.4	-0.2	1.0	0.0	1.4	0.1	2.7	11.6	0.0	12.8	0.0
Maryland	0.0	0.7	0.3	1.0	0.0	0.3	0.1	0.5	22.4	0.0	24.4	0.0
Massachusetts	0.0	1.3	0.7	1.8	0.0	2.1	1.3	2.9	49.7	0.0	50.7	0.0
Michigan	0.0	0.3	0.1	0.5	0.0	0.2	0.0	0.3	91.0	0.0	7.5	0.0
Minnesota	0.0	0.2	-0.1	0.6	0.0	0.1	0.0	0.2	22.4	0.0	9.2	0.0
Mississippi	0.0	0.3	0.0	0.5	0.0	0.1	0.0	0.2	12.9	0.0	15.6	0.0
Missouri	0.0	0.4	0.1	0.7	0.0	0.3	0.0	0.5	47.1	0.0	27.1	0.0

Montana	0.0	0.4	-0.1	1.0	0.0	0.0	0.0	0.0	13.2	0.0	14.5	0.0
Nebraska	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.2	8.4	0.0	8.6	0.0
Nevada	0.0	0.9	0.2	1.6	0.0	0.9	0.3	1.4	3.7	0.0	3.5	0.0
New Hampshire	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.2	0.0	14.7	0.0
New Jersey	0.0	1.0	0.5	1.5	0.0	1.6	1.0	2.1	7.1	0.0	7.7	0.0
New Mexico	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	1.2	0.0	1.3	0.0
New York	0.0	0.8	0.6	1.0	0.0	0.9	0.7	1.2	38.1	0.0	37.8	0.0
North Carolina	0.0	0.8	0.4	1.1	0.0	0.4	0.2	0.6	0.4	0.0	0.4	0.0
North Dakota	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.0
Ohio	0.0	0.3	0.1	0.5	0.0	0.5	0.2	0.7	9.4	0.0	8.9	0.0
Oklahoma	0.0	0.3	0.1	0.6	0.0	0.1	-0.1	0.2	5.6	0.0	5.3	0.0
Oregon	0.0	0.5	0.1	0.9	0.0	0.1	0.0	0.3	22.6	0.0	22.1	0.0
Pennsylvania	0.0	0.2	0.1	0.4	0.0	0.3	0.1	0.4	6.2	0.0	6.9	0.0
Rhode Island	0.0	1.5	0.2	2.8	0.0	1.3	0.2	2.4	100.0	0.0	100.0	0.0
South Carolina	0.0	0.4	0.1	0.6	0.0	0.3	0.1	0.5	40.5	0.0	44.0	0.0
South Dakota	0.0	0.4	-0.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tennessee	0.0	0.7	0.3	1.2	0.0	0.6	0.3	0.9	100.0	0.0	100.0	0.0
Texas	0.0	0.1	0.1	0.2	0.0	0.2	0.1	0.4	14.0	0.0	15.4	0.0
Utah	0.0	0.4	-0.1	0.9	0.0	0.3	-0.1	0.8	46.6	0.0	50.2	0.0
Vermont	0.0	0.4	-0.4	1.3	0.0	0.0	-0.1	0.2	20.0	0.0	21.2	0.0
Virginia	0.0	0.3	0.1	0.5	0.0	0.6	0.3	1.0	1.9	0.0	2.4	0.0
Washington	0.0	0.2	0.0	0.5	0.0	0.3	0.1	0.5	12.2	0.0	11.4	0.0
West Virginia	0.0	0.6	0.1	1.1	0.0	0.1	-0.1	0.3	29.3	0.0	34.1	0.0
Wisconsin	0.0	0.2	-0.1	0.4	0.0	0.1	0.0	0.2	20.9	0.0	22.5	0.0
Wyoming	0.0	0.2	-0.2	0.6	0.0	0.0	0.0	0.0	20.9	0.0	22.0	0.0

Source: 2018–2019 TAF and 2018–2019 ACS.

Notes: Diff. = difference. Upper and lower limits based on 99 percent confidence intervals to account for sampling error in the ACS.

TABLE A.12

Indicators of TAF Race and Ethnicity Data Quality by State for Medicaid/CHIP-Enrolled Children Ages 0–18, 2019

State	American Indian/Alaskan Native, non-Hispanic	Asian, non-Hispanic	Black, non-Hispanic	Hawaiian Pacific Islander, non-Hispanic	Hispanic	Multiple races, non-Hispanic	White, non-Hispanic
Alabama	low	low	low	low	low	low	low
Alaska	high	high	low	high	low	high	high
Arizona	low	low	low	low	low	low	low
Arkansas	low	low	low	low	low	low	low
California	high	high	moderate	low	moderate	low	high
Colorado	low	low	low	low	low	low	low
Connecticut	low	low	low	low	low	low	low
Delaware	low	high	moderate	high	high	low	high
DC	low	low	low	low	low	low	low
Florida	high	moderate	high	high	moderate	low	moderate
Georgia	high	high	high	low	low	low	low
Hawaii	low	low	low	low	low	low	low
Idaho	low	high	low	low	low	low	low
Illinois	low	high	moderate	low	low	low	low
Indiana	high	low	moderate	low	moderate	low	high
Iowa	low	low	low	low	low	low	low
Kansas	low	low	low	low	low	low	low
Kentucky	high	high	high	low	moderate	low	moderate
Louisiana	low	low	low	low	low	low	low
Maine	high	high	high	low	high	low	moderate
Maryland	low	low	low	low	low	low	low

State	American Indian/Alaskan Native, non-Hispanic	Asian, non-Hispanic	Black, non-Hispanic	Hawaiian Pacific Islander, non-Hispanic	Hispanic	Multiple races, non-Hispanic	White, non-Hispanic
Massachusetts	low	low	low	low	low	low	low
Michigan	low	low	moderate	low	moderate	low	high
Minnesota	low	high	high	low	moderate	low	high
Mississippi	high	high	moderate	low	low	low	moderate
Missouri	low	low	low	low	low	low	low
Montana	moderate	high	high	low	moderate	low	low
Nebraska	high	high	high	high	high	low	high
Nevada	high	high	moderate	low	moderate	low	moderate
New Hampshire	low	high	high	high	high	low	moderate
New Jersey	low	high	moderate	low	low	low	moderate
New Mexico	moderate	high	high	low	moderate	low	moderate
New York	low	low	low	low	low	low	low
North Carolina	moderate	moderate	high	high	moderate	moderate	moderate
North Dakota	high	high	low	low	high	high	high
Ohio	low	low	moderate	low	moderate	low	moderate
Oklahoma	low	high	moderate	low	high	low	moderate
Oregon	low	low	low	low	low	low	low
Pennsylvania	high	high	moderate	high	moderate	low	high
Rhode Island	low	low	low	low	low	low	low
South Carolina	low	low	low	low	low	low	low
South Dakota	high	low	high	low	high	low	high
Tennessee	low	low	low	low	low	low	low
Texas	high	moderate	moderate	high	moderate	low	moderate

State	American Indian/Alaskan Native, non-Hispanic	Asian, non-Hispanic	Black, non-Hispanic	Hawaiian Pacific Islander, non-Hispanic	Hispanic	Multiple races, non-Hispanic	White, non-Hispanic
Utah	low	low	low	low	low	low	low
Vermont	low	low	low	low	low	low	low
Virginia	low	high	moderate	low	low	low	low
Washington	low	high	high	low	moderate	low	moderate
West Virginia	low	low	low	low	low	low	low
Wisconsin	low	low	low	low	low	low	low
Wyoming	low	low	low	low	low	low	low
Total states with high-quality data	14	21	12	8	7	2	10
Total states with high- or moderate-quality data	17	24	25	8	21	3	23

Source: Authors' analysis of the 2019 TAF and 2019 ACS.

Notes: Quality-level determinations are based on comparisons of race and ethnicity distributions in the TAF to the ACS. We consider the TAF to be *high quality* when the TAF value is within the bounds of the 99 percent confidence interval on the ACS estimate and fewer than 20 percent of enrollees in the state have a missing value for race and ethnicity. We consider the TAF to be *moderate quality* when all of the following criteria are met: the TAF value is outside the ACS's 99 percent confidence interval, the percentage-point difference is less than 10 percentage points and the percent difference is less than 50 percent, and fewer than 20 percent of enrollees in the state have a missing value for race and ethnicity. We consider the TAF to be *low quality* when at least one of the following criteria are met: the percentage-point difference is more than 10 percentage points, or the percent difference is greater than 50 percent, or at least 20 percent of enrollees in the state have a missing value for race and ethnicity. See the Methods section for more details.

TABLE A.13

Number of Race and Ethnicity Categories Meeting Data-Quality Levels in the TAF for Medicaid/CHIP-Enrolled Children Ages 0–18 in the TAF, by State, 2019

State	(1) High-quality race and ethnicity categories		(2) Moderate-quality race and ethnicity categories		(3) Low-quality race and ethnicity categories	
	#	%	#	%	#	%
Alabama	0	0	0	0	7	100
Alaska	5	71	0	0	2	29
Arizona	0	0	0	0	7	100
Arkansas	0	0	0	0	7	100
California	3	43	2	29	2	29
Colorado	0	0	0	0	7	100
Connecticut	0	0	0	0	7	100
Delaware	4	57	1	14	2	29
DC	0	0	0	0	7	100
Florida	3	43	3	43	1	14
Georgia	3	43	0	0	4	57
Hawaii	0	0	0	0	7	100
Idaho	1	14	0	0	6	86
Illinois	1	14	1	14	5	71
Indiana	2	29	2	29	3	43
Iowa	0	0	0	0	7	100
Kansas	0	0	0	0	7	100
Kentucky	3	43	2	29	2	29
Louisiana	0	0	0	0	7	100
Maine	4	57	1	14	2	29
Maryland	0	0	0	0	7	100
Massachusetts	0	0	0	0	7	100
Michigan	1	14	2	29	4	57
Minnesota	3	43	1	14	3	43
Mississippi	2	29	2	29	3	43
Missouri	0	0	0	0	7	100
Montana	2	29	2	29	3	43
Nebraska	6	86	0	0	1	14

State	(1) High-quality race and ethnicity categories		(2) Moderate-quality race and ethnicity categories		(3) Low-quality race and ethnicity categories	
	#	%	#	%	#	%
Nevada	2	29	3	43	2	29
New Hampshire	4	57	1	14	2	29
New Jersey	1	14	2	29	4	57
New Mexico	2	29	3	43	2	29
New York	0	0	0	0	7	100
North Carolina	2	29	5	71	0	0
North Dakota	5	71	0	0	2	29
Ohio	0	0	3	43	4	57
Oklahoma	2	29	2	29	3	43
Oregon	0	0	0	0	7	100
Pennsylvania	4	57	2	29	1	14
Rhode Island	0	0	0	0	7	100
South Carolina	0	0	0	0	7	100
South Dakota	4	57	0	0	3	43
Tennessee	0	0	0	0	7	100
Texas	2	29	4	57	1	14
Utah	0	0	0	0	7	100
Vermont	0	0	0	0	7	100
Virginia	1	14	1	14	5	71
Washington	2	29	2	29	3	43
West Virginia	0	0	0	0	7	100
Wisconsin	0	0	0	0	7	100
Wyoming	0	0	0	0	7	100
Average	1.5	21	0.9	13	4.6	66

Source: Authors' analysis of the 2019 TAF and 2019 ACS.

Notes: Quality-level determinations are based on comparisons of race and ethnicity distributions in the TAF to the ACS. We consider the TAF to be *high quality* when the TAF value is within the bounds of the 99 percent confidence interval on the ACS estimate and fewer than 20 percent of enrollees in the state have a missing value for race and ethnicity. We consider the TAF to be *moderate quality* when all of the following criteria are met: the TAF value is outside the ACS's 99 percent confidence interval, the percentage-point difference is less than 10 percentage points and the percent difference is less than 50 percent, and fewer than 20 percent of enrollees in the state have a missing value for race and ethnicity. We consider the TAF to be *low quality* when at least one of the following criteria are met: the percentage-point difference is more than 10 percentage points, or the percent difference is greater than 50 percent, or at least 20 percent of enrollees in the state have a missing value for race and ethnicity. See the Methods section for more details.

TABLE A.14

Tabulation of Expanded Race/Ethnicity Variable in the TAF for Medicaid/CHIP-Enrolled Children Ages 0–18 by State

Percentages in 2018 and 2019

	Asian unkwn.^	Asian Indian	Chinese	Filipino	Japanese	Korean	Viet- namese	Multi- Asian	Other Asian	Native Hawaiian or Other Pacific Islander unkwn.^	Native Hawaiian	Guamanian or Chamorro	Samoaan	Multi- Islander	Other Pacific Islander
2018															
Alabama	0.3	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0
Alaska	5.6	0	0	0	0	0	0	0	0	4.8	0	0	0	0	0
Arizona	0.1	0.5	0.1	0.3	0.1	0.1	0.3	0	0.2	0	0.1	0	0	0	0.2
Arkansas	0	0	0	0	0	0	0	0	0	0.7	0	0	0	0	0
California ⁺	0	0.7	1.4	1.2	0.1	0.4	1.5	0	1.7	0	0.1	0	0.2	0	0.2
Colorado	1.9	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0
Connecticut	3.1	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0
Delaware	2	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
District of Columbia	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Florida	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Georgia	1.6	0.3	0	0.6	0	0	0	0	0	0.1	0	0	0	0	0
Hawaii ⁺	0	0.1	5.5	15.6	2.8	0.6	0.2	0	1.3	0	16.3	0.1	2.6	0	6.1
Idaho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Illinois	3.1	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0
Indiana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.5
Iowa	0	1.7	9.3	1	2.6	0	0	0	0	0	0	0	0	0	0
Kansas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kentucky	1.1	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0
Louisiana	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Asian unkwn.^	Asian Indian	Chinese	Filipino	Japanese	Korean	Viet- namese	Multi- Asian	Other Asian	Native Hawaiian or Other Pacific Islander unkwn.^	Native Hawaiian	Guamanian or Chamorro	Samoan	Multi- Islander	Other Pacific Islander
Maine	0	0	0	0	0	0	0	0	0.8	0	0	0	0	0	0.1
Maryland	4.2	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
Massachusetts	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Michigan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minnesota	6.4	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0
Mississippi	0	0.1	0.1	0	0	0	0.1	0	0.5	0	0	0	0	0	0
Missouri	0.7	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
Montana	0.4	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
Nebraska	3.2	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0
Nevada	2.9	0	0	0	0	0	0	0	0	1.5	0	0	0	0	0
New Hampshire	1.5	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
New Jersey	4.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Mexico	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0
New York	6.6	0	0	0	0	0	0	0	0	0.2	0	0	0	0	1.5
North Carolina	1.8	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
North Dakota	1.9	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0
Ohio	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	1.8
Oklahoma	1.5	0	0	0	0	0	0	0	0.4	0.4	0	0	0	0	0
Oregon	0	0.1	0.3	0.1	0	0.1	0.4	0	0.4	0	0	0	0	0	0.5
Pennsylvania	2.5	0	0	0	0	0	0	0	0.6	0.1	0	0	0	0	0
Rhode Island	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Carolina	0.5	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
South Dakota	1.9	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0

	Asian unkwn.^	Asian Indian	Chinese	Filipino	Japanese	Korean	Viet- namese	Multi- Asian	Other Asian	Native Hawaiian or Other Pacific Islander unkwn.^	Native Hawaiian	Guamanian or Chamorro	Samoan	Multi- Islander	Other Pacific Islander
Tennessee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Texas	1.7	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
Utah	0	0	0	0	0	0	0	0	0	0.6	0	0	0	0	0
Vermont	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virginia ⁺	2.3	0.6	0.3	0.2	0	0.2	0.4	0	0	0.8	0	0.1	0	0	0
Washington	3.5	0	0	0	0	0	0	0	0	2.8	0.2	0	0	0	0
West Virginia	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wisconsin	3.6	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0
Wyoming	0	0	0	0	0	0	0	0	0.4	0	0	0	0.2	0	0
2019															
Alabama	0.3	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0
Alaska	5.5	0	0	0	0	0	0	0	0	4.8	0	0	0	0	0
Arizona	0.1	0.5	0.1	0.3	0.1	0.1	0.3	0	0.2	0	0.1	0	0	0	0.2
Arkansas	0	0	0	0	0	0	0	0	0	0.8	0	0	0	0	0
California ⁺	0	0.7	1.5	1.2	0.1	0.4	1.5	0	1.6	0	0.1	0	0.2	0	0.2
Colorado	2	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0
Connecticut	3	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0
Delaware	2.1	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
District of Columbia	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Florida	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Georgia	1.5	0.3	0.1	0.5	0	0	0.1	0	0	0.1	0	0	0	0	0
Hawaii ⁺	0	0.1	5.3	14.2	2.6	0.5	0.2	0	1.1	0	14.9	0.1	2.4	0	5.7
Idaho	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Illinois	3	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0

	Asian unkwn.^	Asian Indian	Chinese	Filipino	Japanese	Korean	Viet- namese	Multi- Asian	Other Asian	Native Hawaiian or Other Pacific Islander unkwn.^	Native Hawaiian	Guamanian or Chamorro	Samoan	Multi- Islander	Other Pacific Islander
Indiana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.7
Iowa	0.2	0.1	0.5	0	0.1	0	0.2	0	1	0.7	0	0	0	0	0.1
Kansas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kentucky	1.2	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0
Louisiana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maine	0	0	0	0	0	0	0	0	0.8	0	0	0	0	0	0.1
Maryland	4.2	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
Massachusetts	3.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Michigan	0	0.2	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0
Minnesota	7.7	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0
Mississippi	0	0.1	0.1	0	0	0	0.1	0	0.4	0	0	0	0	0	0
Missouri	0.9	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0
Montana	0.5	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
Nebraska	3.3	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0
Nevada	3	0	0	0	0	0	0	0	0	1.7	0	0	0	0	0
New Hampshire	1.5	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
New Jersey	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Mexico	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0
New York	6.5	0	0	0	0	0	0	0	0	0.2	0	0	0	0	1.7
North Carolina	1.8	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
North Dakota	1.8	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0
Ohio	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	1.8
Oklahoma	1.5	0	0	0	0	0	0	0	0.4	0.5	0	0	0	0	0

	Asian unkwn.^	Asian Indian	Chinese	Filipino	Japanese	Korean	Viet- namese	Multi- Asian	Other Asian	Native Hawaiian or Other Pacific Islander unkwn.^	Native Hawaiian	Guamanian or Chamorro	Samoan	Multi- Islander	Other Pacific Islander
Oregon	0	0.1	0.3	0.1	0	0.1	0.4	0	0.5	0	0	0	0.1	0	0.5
Pennsylvania	2.4	0	0	0	0	0	0	0	0.8	0.1	0	0	0	0	0
Rhode Island	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Carolina	0.5	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
South Dakota	1.8	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0
Tennessee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Texas	1.7	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
Utah	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0
Vermont	1.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virginia ⁺	2.3	0.6	0.3	0.2	0	0.2	0.4	0	0	0.8	0	0.1	0	0	0
Washington	3.4	0	0	0	0	0	0	0	0	3	0.2	0	0	0	0
West Virginia	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wisconsin	3.6	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0
Wyoming	0	0	0	0	0	0	0	0	0.4	0	0	0	0.2	0	0

Source: Authors' analysis of the 2018 and 2019 Transformed Medicaid Statistical Information System Analytic Files (TAF).

Notes: All categories are non-Hispanic or Hispanic not reported. In addition to the categories shown in this table, the expanded race and ethnicity code variable includes the following six additional categories: American Indian or Alaskan Native, non-Hispanic; Black, non-Hispanic; Hispanic, any race; multi-racial, non-Hispanic; white, non-Hispanic; missing expanded race. The tabulations for these six categories are identical to those from the condensed race and ethnicity code variable in all states, and thus are omitted from this table. Unkwn. = unknown.

^ indicates categories that are also included in the condensed race and ethnicity code variable.

+ indicates states where the detailed variable provides more information *and* non-Hispanic Asian enrollees represent more than 3 percent of the pediatric Medicaid population.

Notes

- ¹ Brittany Brown-Podgorski, Eric Roberts, and William Schpero, “Improving Medicaid Data to Advance Racial and Ethnic Health Equity in the United States,” *Health Affairs Forefront* (blog), May, 2022, <https://www.healthaffairs.org/doi/10.1377/forefront.20220517.465853/>; Executive Office of the President, “Advancing Racial Equity and Support for Underserved Communities Through the Federal Government,” *Federal Register*, 2021, <https://www.federalregister.gov/documents/2021/01/25/2021-01753/advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government>.
- ² KFF, “Monthly Child Enrollment in Medicaid and CHIP,” September 29, 2022, <https://www.kff.org/medicaid/state-indicator/total-medicaid-and-chip-child-enrollment/>; KFF, “Health Insurance Coverage of Children 0-18,” October 28, 2022, <https://www.kff.org/other/state-indicator/children-0-18/>.
- ³ SHADAC Staff, “Race/Ethnicity Data in CMS Medicaid (T-MSIS) Analytic Files Updated December 2021 – Features 2019 Data,” SHADAC (blog), January 11, 2022, <https://www.shadac.org/news/raceethnicity-data-cms-medicaid-t-msis-analytic-files-updated-december-2021-%E2%80%93-features-2019>.
- ⁴ The White House, “Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity,” 1997, October 30, 1997, https://obamawhitehouse.archives.gov/omb/fedreg_1997standards.
- ⁵ Centers for Medicare & Medicaid Services (CMS), “DQ Atlas-Race and Ethnicity-Background and Methods Resource,” Medicaid, accessed July 31, 2022, <https://www.medicaid.gov/dq-atlas/landing/topics/single/table?topic=g3m16&tafVersionId=18>.
- ⁶ CMS, “DQ Atlas,” accessed July 31, 2022, <https://www.medicaid.gov/dq-atlas/welcome>.
- ⁷ KFF, “Monthly Child Enrollment”; KFF, “Health Insurance Coverage.”
- ⁸ Office of the President, “Advancing Racial Equity.”
- ⁹ CMS, “Proposed Rule: Medicaid Program and CHIP; Mandatory Medicaid and Children’s Health Insurance Program (CHIP) Core Set Reporting,” 87 FR 51303 (August 22, 2022), <https://www.federalregister.gov/documents/2022/08/22/2022-17810/medicaid-program-and-chip-mandatory-medicaid-and-childrens-health-insurance-program-chip-core-set>.
- ¹⁰ CMS, “DQ Atlas-Race and Ethnicity.” The TAF DE file also includes an “expanded race and ethnicity constructed code” variable (RACE_ETHNCTY_EXP_CD). For enrollees who are non-Hispanic white, non-Hispanic Black, Hispanic, AIAN, or multiracial, or who have an unknown race/ethnicity according to RACE_ETHNCTY_CD, RACE_ETHNCTY_EXP_CD provides no additional detail. For enrollees who are Asian or H/PI according to RACE_ETHNCTY_CD, RACE_ETHNCTY_EXP_CD provides additional granularity in a small number of states. We focus our assessment on the RACE_ETHNCTY_CD variable, but additional details and data tabulations for the RACE_ETHNCTY_EXP_CD are available in appendix table A.14.
- ¹¹ ResDAC, “Race and Ethnicity Constructed Code – Latest in Year,” accessed October 18, 2022, <https://resdac.org/cms-data/variables/race-and-ethnicity-constructed-code-latest-year>.
- ¹² CMS, “DQ Atlas-Race and Ethnicity”; ResDAC, “Race and Ethnicity.”

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