

## Section 6: Technical Guide to MACStats

This technical guide provides supplementary information to help readers interpret the exhibits in this data book as well as understand the data sources and methods used. In addition, we explain why MACPAC's statistics, particularly those on enrollment and spending, may differ from each other or from those published elsewhere.<sup>1</sup>

### Interpreting Medicaid and CHIP Enrollment and Spending Numbers

Published numbers for enrollment in Medicaid and the State Children's Health Insurance Program (CHIP) can vary substantially depending on the source of data, the enrollment period examined, and the individuals included in the data.

#### Data sources

Medicaid and CHIP enrollment and spending numbers are available from data compiled by states and the federal government in the course of administering these programs. Program data are updated on different schedules, so the latest year of available data may differ depending on the source. MACPAC commonly uses the following types of administrative data, which are submitted by the states to the Centers for Medicare & Medicaid Services (CMS):

- Form CMS-64 data for state-level Medicaid spending and enrollment;
- Transformed Medicaid Statistical Information System (T-MSIS) data for person-level detail;
- CMS performance indicator enrollment data;
- Medicaid managed care enrollment reports; and
- Statistical Enrollment Data System (SEDS) data for CHIP enrollment.

CMS began reporting two new administrative data sources on enrollment in 2014, referred to here as performance indicator enrollment data and CMS-64 enrollment data.<sup>2</sup> These sources differ in the timing of the reports and the enrollees covered. Performance indicator enrollment data are published monthly by CMS and include only full-benefit Medicaid and CHIP enrollees. CMS-64 enrollment data are published quarterly and include Medicaid enrollees with limited benefits but exclude CHIP enrollees.

Additionally, CMS-64 enrollment data include detailed information about the new adult group made eligible under Section 1902(a)(10)(A)(i)(VIII) of the Social Security Act (the Act) by the Patient Protection and Affordable Care Act (ACA, P.L. 111-148, as amended). MACPAC uses the spending and enrollment data submitted on the CMS-64 to produce an exhibit on spending and enrollment from the most recent year for all Medicaid enrollees and those adults newly eligible for Medicaid under the ACA (Exhibit 23).

**T-MSIS.** Over the past several years, CMS has worked with states to implement the updated version of the Medicaid Statistical Information System (MSIS). T-MSIS builds on the person-level and claims-level data previously available under MSIS to improve timeliness, reliability, and completeness of national Medicaid and CHIP data. Additionally, T-MSIS is designed to capture significantly more data and information. It includes additional variables and expands reporting options for many existing variables. All states are now submitting T-MSIS data.

CMS takes each state's raw T-MSIS data and standardizes them into a research ready data set known as the T-MSIS Analytic Files (TAF). The TAF is further refined to remove certain personally identifiable information and proprietary information on managed care payment amounts to providers before the data are publicly released as the TAF research identifiable file (RIF). In addition, CMS has released updated versions of earlier TAF RIF files as states have addressed certain data quality issues.

CMS has developed resources to help users understand how to use the TAF data and identify

potential concerns in validity and reliability. In conjunction with the TAF data releases, CMS publishes an interactive, web-based Data Quality Atlas that contains information for calendar years (CY) 2016–2019.<sup>3</sup> These resources provide insight on the quality and usability of the TAF and include summary statistics on a number of priority fields (e.g., eligibility group, dually eligible status, type of service). These statistics include information on file usability, the percentage of values missing, benchmark comparisons to other data sources (e.g., performance indicator enrollment), and data anomalies that may require special consideration.

One consequence of the extended transition from MSIS to T-MSIS is that not all states transitioned at the same time and data for 2014 and 2015 are split between MSIS and T-MSIS data.<sup>4</sup> Additionally, CMS has been working closely with states to improve the quality and completeness of the data.<sup>5</sup> These quality improvement efforts have focused on more recent data, and not all states have gone back to prior periods to make these improvements and resubmit the data. The CMS data quality resources have shown the quality and completeness of data are better for more recent periods.

Because of the mix of data sources for 2014 and 2015 and the improvements in data quality over time, fiscal year (FY) 2018 was the first year of T-MSIS data that was used for MACStats. In this data book, we used the most recently available T-MSIS data that had more than 12 months of claims run-out.

**Survey data.** MACStats also uses nationally representative surveys based on interviews of individuals, including the National Health Interview Survey (NHIS) and the Medical Expenditure Panel Survey (MEPS). The NHIS was redesigned in 2019, so users should be cautious about making comparisons to prior years. Additionally, certain measures in previous editions of MACStats are no longer available.

Estimates of Medicaid and CHIP enrollment from survey data tend to be lower than estimates generated from administrative data, in part because survey respondents tend to underreport Medicaid and CHIP coverage. However, survey data provide many more details on individual and family circumstances (e.g., health status, ease in accessing

services, and reasons for delaying care) and can therefore provide a richer picture of the individuals enrolled in Medicaid and CHIP.

## Enrollment period examined

Characterizations of the size of the Medicaid and CHIP populations may vary based on the enrollment period examined. The number of individuals enrolled at a particular point during the year will be lower than the total number enrolled at any point during an entire year. Point-in-time numbers are sometimes referred to as average, full-year equivalent, or person-year enrollment. These statistics are often used for budget analyses (such as those by the CMS Office of the Actuary) and when comparing enrollment and expenditure numbers. Per enrollee spending levels based on full-year equivalents ensure that amounts are not biased by individuals' transitions in and out of Medicaid coverage during the year.

## Enrollees versus beneficiaries

Depending on the source and the year in question, data may reflect different ways of characterizing individuals in Medicaid. Certain terms commonly used to refer to people with Medicaid have specific definitions in administrative data sources provided by CMS:<sup>6</sup>

- Enrollees (less commonly referred to as eligibles) are individuals who are eligible for and enrolled in Medicaid or CHIP. Prior to FY 1990, CMS did not track the number of Medicaid enrollees but tracked only beneficiaries (see below). In some cases, CMS has estimated the number of enrollees prior to 1990.
- Beneficiaries, or persons served (less commonly referred to as recipients), are enrollees who receive covered services or for whom Medicaid or CHIP payments are made. Prior to FY 1998, individuals were not counted as beneficiaries if managed care payments were the only Medicaid payments made on their behalf. Beginning in FY 1998, however, Medicaid managed care enrollees with no fee-

for-service (FFS) spending were also counted as beneficiaries, which increased the number of individuals reported in enrollment statistics. Generally, the number of beneficiaries will approach the number of enrollees as more of these individuals use Medicaid-covered services or are enrolled in managed care.<sup>7</sup> (In common usage outside of CMS statistical publications, the term beneficiaries is typically synonymous with enrollees.)

## Institutionalized and limited-benefit enrollees

Administrative Medicaid data include enrollees who are in institutions, such as nursing facilities, as well as individuals who receive only limited benefits (e.g., coverage for emergency services only). Survey data tend to exclude such individuals from counts of coverage. In percentage terms, the difference between estimates from administrative data and estimates from survey data tends to be largest among older beneficiaries, who are more likely to be living in institutions (in which case they are excluded from most surveys) and more likely to be receiving limited Medicaid benefits that pay only for their Medicare premiums and cost sharing (which may not be counted as Medicaid coverage in some surveys).

## CHIP enrollees

Medicaid-expansion CHIP enrollees are children who are entitled to the covered services of a state's Medicaid program but whose Medicaid coverage is generally funded with CHIP dollars. Depending on the data source, Medicaid enrollment and spending figures may include both Medicaid enrollees funded with Medicaid dollars and Medicaid-expansion CHIP enrollees funded with CHIP dollars. For MACStats, we generally exclude Medicaid-expansion CHIP enrollees from Medicaid analyses, but some data sources do not allow these children to be broken out separately.

# Understanding Data on Health and Other Characteristics of Medicaid and CHIP Populations

MACStats uses data from the federal NHIS and the MEPS to describe Medicaid and CHIP enrollees in terms of their self-reported demographic, socioeconomic, and health characteristics as well as their use of care. Background information on these surveys is provided here.

## NHIS and MEPS data

The NHIS is an annual face-to-face household survey of civilian non-institutionalized persons designed to monitor the health of the U.S. population through the collection of information on a broad range of health topics.<sup>8</sup> A subsample of households that participated in the previous year's NHIS undergo further interviews for the household component of the MEPS, which collects more detailed information on use of health care services and expenditures.<sup>9</sup>

Although other surveys are available, the NHIS is the main survey data source used in MACStats because it provides relatively timely estimates and because its sample size is large enough to produce reliable estimates by coverage source and to detect meaningful differences between them. In addition, it is generally considered to be one of the best surveys for health insurance coverage estimates, and it captures detailed information on individuals' health status.<sup>10</sup>

However, the NHIS is known to produce higher estimates of service use than the MEPS.<sup>11</sup> As a result, MACStats includes estimates of service use from both sources. For purposes of comparing groups of individuals, the NHIS has the advantage of providing the most recent information available; for other purposes, such as measuring levels of service use relative to a particular benchmark or goal, consulting estimates from the MEPS or another source might be more appropriate.

The NHIS has some limitations. As in most surveys, respondents in the NHIS do not always accurately

report information about participation in programs such as Medicaid, CHIP, Medicare, Supplemental Security Income, and Social Security Disability Insurance. As a result, survey data may not match estimates of program participation computed from the programs' own administrative data. In addition, although the NHIS asks about participation in Medicaid and CHIP in two different questions, program participation estimates from the survey are not reported separately. One reason for this is that many states' CHIP and Medicaid programs use the same name, so respondents may not necessarily know which program funds their children's coverage. Even when the programs have different names, it may be difficult for respondents and interviewers to correctly categorize the coverage. As a result, separate survey questions regarding participation in Medicaid and CHIP are generally used to minimize the undercounting of Medicaid and CHIP enrollees, not to produce valid estimates separately for each program. Thus, survey data analyses typically combine Medicaid and CHIP into a single category.

In previous editions of MACStats, NHIS data allowed MACPAC to use responses to several questions to identify children and youth with special health care needs (CYSHCN). Based on an approach developed by the Child and Adolescent Health Measurement Initiative, children were identified as meeting CYSHCN criteria if they had at least one diagnosed or parent-reported ongoing health condition and elevated service use. Following the 2019 redesign, a number of variables used to identify specific health conditions, as well as some of the variables related to elevated service use, are no longer available. As such, we are no longer able to identify CYSHCN using the NHIS.

## Methodology for T-MSIS Analysis

As noted above, MACStats uses T-MSIS data to create exhibits on Medicaid enrollment and spending by eligibility group. Although we used the raw T-MSIS data instead of the TAF, our process of identifying final action records is similar and should produce similar results as the TAF. We relied on the final action indicator CMS appends to claims as part of its TAF development process. Additionally, claims are organized by service date (ending date of service) to assign a claim to a particular time period, which is similar to the TAF.<sup>12</sup> Our tabulations of the raw T-MSIS data produced similar totals to the TAF; however, there were some differences due to a difference in how many months of claims run-out were included.

Our process of assigning enrollee characteristics is similar to prior years, relying on the most recent valid value for a particular characteristic. T-MSIS includes a new eligibility group variable that expands the number of groups reported and is more specific than the basis-of-eligibility variable reported in MSIS. As such, we developed a new algorithm to aggregate these more granular eligibility codes into our larger groupings of child, adult, disabled, and aged. In addition, we further split adults into the new adult group and other adults.<sup>13</sup> Furthermore, the new T-MSIS eligibility groups do not specifically separate individuals who qualify on the basis of a disability from the aged and do not separate children from adults in many categories. We included age as another identifier to assign enrollees to our larger groupings. The assignment of beneficiaries is shown in Exhibit 47.

**EXHIBIT 47. MACPAC Assignment of T-MSIS Eligibility Groups**

MACPAC group	T-MSIS eligibility code	Age
Child	06, 07, 08, 28, 29, 30, 31, 54, 55	Any age
	01, 02, 03, 04, 14, 27, 32, 33, 35, 36, 56, 69, 70, 71	Age under 19 years
New adult group <sup>1,2</sup>	72, 73, 74, 75	Any age
Other adult <sup>3</sup>	05, 09	Any age
	01, 02, 03, 04, 27, 33, 35, 36, 56, 70	Age 19 and older
	32, 69, 71	Age 19–64
Disabled	11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 59, 60	Age under 65 years (age 19–64 for code 14)
Aged	11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 32, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 59, 60, 69, 71	Age 65 and older

**Note:** T-MSIS is Transformed Medicaid Statistical Information System. Excludes individuals enrolled in CHIP-financed Medicaid coverage (e.g., Medicaid-expansion CHIP) when the CHIP code indicates separate or Medicaid-expansion CHIP (values of 2 or 3) or the T-MSIS eligibility code is 61–68.

<sup>1</sup> Includes both newly eligible and not newly eligible adults who are eligible under Section 1902(a)(10)(A)(i)(VIII) of the Social Security Act (the Act). Newly eligible adults include those who were not eligible for Medicaid under the rules that a state had in place on December 1, 2009. Not newly eligible adults include those who would have previously been eligible for Medicaid under the rules that a state had in place on December 1, 2009; this includes states that had already expanded to adults with incomes greater than 100 percent of the federal poverty level as of March 23, 2010, and receive the expansion state transitional matching rate.

<sup>2</sup> Because Pennsylvania classifies its new adult group under eligibility code 71, we assign eligibility code 71 to the new adult group for Pennsylvania.

<sup>3</sup> Includes adults under age 65 who qualify through a pathway other than disability or Section 1902(a)(10)(A)(i)(VIII) of the Act (e.g., parents and caretakers, pregnant women).

**Source:** MACPAC, 2021, analysis of T-MSIS data.

We also assigned Medicaid enrollees a unique national identification (ID) number using an algorithm that incorporates state-specific ID numbers and beneficiary characteristics, such as date of birth and gender. The national enrollment counts are then unduplicated using this national ID, which results in slightly lower enrollment counts than the sum of state-level enrollment.

T-MSIS includes spending amounts on a claim at both the header and line levels. To calculate spending, we used the Medicaid paid amounts reported on the header.<sup>14</sup> We included payment amounts from FFS, capitation, service tracking, and supplemental payment claim types that were

linked to an individual enrollee. We did not include any lump sum payments, such as supplemental payments, that could not be linked to a specific enrollee. Additionally, we did not include paid amounts from encounter records because that spending is already represented in the amount the state made in capitation payments.

To classify claims into our broad service categories, we primarily relied on the type-of-service variable (Exhibit 49). Because type of service is reported at the line level, it is possible for a single claim to include multiple types of service. To assign a single type of service to a claim, we applied the type of service associated with the greatest proportion



of line-level spending. We did additional checks to assess the reasonableness of the type-of-service assignment. For facility-based services (e.g., hospital, nursing facility), we checked to see if the claim had a bill type that corresponded to a facility service or a valid revenue code. For professional services, we checked for place of service. In cases in which a final type of service was still undetermined, we defaulted to the claim file in which the claim was reported. Claims in the inpatient file were assigned to the hospital category, claims in the long-term care file were assigned to the institutional long-term services and supports (LTSS) category, claims in the prescription drug file were assigned to the drug category, and claims in the other services file were assigned to the non-hospital acute care category.

We used additional variables to categorize managed care and non-institutional LTSS claims. We assigned any claim classified as a capitation payment (claim type 2) as managed care regardless of the type of service assigned to the claim. We classified a claim as non-institutional LTSS if any of the following variables so indicated: type of service, program type, or Title XIX service category (i.e., CMS-64 service category) (Exhibit 49).

Readers should note that due to changes in both methods and data, T-MSIS figures shown in this year's data book may not be directly comparable to figures from earlier editions that were based on MSIS data. Key differences between the current and previous methodologies include the following:

- We assigned a time period to T-MSIS claims using the service date. This corresponds to how CMS classifies the time period in the TAF. In our previous work with MSIS, we used the file submission date (which generally corresponds to a paid date) when assigning a claim to a particular time period.
- The new eligibility groups in T-MSIS means that some enrollees may be classified differently than under MSIS, depending on how states map individuals between the two systems. In particular, the new T-MSIS eligibility categories

do not separate individuals who qualify on the basis of a disability from the aged and do not separate children from adults in many categories. We included age as another identifier to categorize beneficiaries into our larger groupings. Although we had previously taken those age 65 and older in the disabled category and classified them as aged, this is the first time we specifically incorporate age into the classification of children and adults. Furthermore, the separate identification of the new adult group may make it difficult to compare adults to prior years. The other adult category generally corresponds to the adult category used in previous MACStats publications based on MSIS data, but in states that expanded coverage to adults prior to the ACA, the expansion adults that would have appeared in the adult category in prior years are now included in the new adult group category.

- The expanded type-of-service categories in T-MSIS means that some spending may be classified differently than under MSIS, depending on how states map services between the two systems. This is particularly true for non-institutional LTSS. Previously in MSIS, we relied on program type, because home- and community-based services (HCBS) was not a separate type of service. We still use program type, but we can now also capture claims with an HCBS type of service or a Title XIX service category. This expansion of the algorithm may result in our capturing more claims as non-institutional LTSS.
- State practices for classifying enrollees and services in T-MSIS may change over time as states become more familiar with the T-MSIS reporting structure and requirements. Future changes in enrollment and spending, particularly across eligibility groups or service categories, may reflect changes in reporting in addition to changes in policy. Finally, enrollment and spending amounts for a particular year could change over time if states correct reporting errors and anomalies for past years.

## Methodology for Adjusting Benefit Spending Data

The Medicaid benefit spending amounts presented in this data book were calculated based on T-MSIS data that have been adjusted to match total benefit spending reported by states in CMS-64 data.<sup>15</sup> Although the CMS-64 provides a more complete accounting of spending than T-MSIS and is preferred when examining state or federal spending totals, it cannot be used for analysis of benefit spending by eligibility group and other enrollee characteristics. Thus, we adjust T-MSIS amounts for several reasons:

- CMS-64 data provide an official accounting of state spending on Medicaid for purposes of receiving federal matching dollars; in contrast, T-MSIS data are used primarily for statistical purposes.
- T-MSIS generally understates total Medicaid benefit spending because it excludes disproportionate share hospital (DSH) payments and additional types of supplemental payments made to hospitals and other providers, Medicare premium payments, and certain other amounts.<sup>16</sup> Although states may report DSH and other supplemental payments through T-MSIS, most states are not reporting these data at this time.
- T-MSIS generally overstates net spending on prescribed drugs because it excludes rebates from drug manufacturers. Although T-MSIS does allow states to report drug rebate collections, most states are not reporting these data at this time.
- The extent to which spending in T-MSIS differs from that reported on the CMS-64 varies by state, meaning that a cross-state comparison of unadjusted T-MSIS amounts may not reflect true differences in benefit spending. (See Exhibit 48 for unadjusted benefit spending amounts in T-MSIS as a percentage of benefit spending in the CMS-64.)

The methodology MACPAC uses for adjusting T-MSIS benefit spending data involves the following steps:

- We aggregate the service types into broad categories that are comparable between the two sources. (See Exhibit 49 for additional detail on these categories.) This is necessary because there is not a one-to-one correspondence of service types in T-MSIS and CMS-64 data. Even service types with identical names may be reported differently in the two sources due to differences in the instructions given to states. Although T-MSIS includes a new variable that corresponds to the service categories reported on the CMS-64, many states are not currently submitting complete information under this variable. The submission of complete and accurate information for this variable would allow us to make more direct comparisons between T-MSIS and the CMS-64 in the future.
- We calculate state-specific adjustment factors for each of the service categories by dividing CMS-64 benefit spending by T-MSIS benefit spending.
- We then multiply T-MSIS dollar amounts in each service category by the state-specific factors to obtain adjusted T-MSIS spending. For example, in a state with an FFS hospital factor of 1.2, each Medicaid enrollee with hospital spending in T-MSIS would have that spending multiplied by 1.2; doing so makes the sum of adjusted hospital spending amounts among individual Medicaid enrollees in T-MSIS total the aggregate hospital spending reported by states in the CMS-64 (as noted later, MACPAC excludes some amounts from the CMS-64 hospital total).<sup>17</sup>

These adjustments to T-MSIS data are meant to provide more complete estimates of Medicaid benefit spending across states that can be analyzed by eligibility group and other enrollee characteristics. Other organizations, including the CMS Office of the Actuary, the Kaiser Family Foundation, and the Urban Institute, use similar methodologies, although these may differ in

some ways—for example, by using the proportion of spending across eligibility groups in T-MSIS to allocate CMS-64 spending to these groups. Even so, data anomalies in T-MSIS may create large discrepancies between the results obtained

by our methodology and results obtained by methodologies used by other organizations. We expect to see these discrepancies wane as states get used to T-MSIS reporting and the accuracy and consistency of their T-MSIS data improves.

**EXHIBIT 48.** Medicaid Benefit Spending in T-MSIS and CMS-64 Data by State, FY 2019 (millions)

State	Benefit spending totals included in analysis			Amounts excluded from CMS-64 benefit spending totals	
	Unadjusted T-MSIS	CMS-64 <sup>1</sup>	T-MSIS as a percentage of CMS-64	DSH	Incentive and uncompensated care pool waivers
<b>Total</b>	<b>\$567,485</b>	<b>\$571,303</b>	<b>99.3%</b>	<b>\$17,734</b>	<b>\$15,286</b>
Alabama	4,247	5,427	78.3	490	–
Alaska	2,210	2,089	105.8	25	–
Arizona	12,926	12,881	100.4	164	134
Arkansas	6,073	6,818	89.1	81	–
California <sup>2</sup>	81,021	84,207	96.2	636	3,893
Colorado	7,921	9,051	87.5	248	–
Connecticut	8,556	8,489	100.8	109	–
Delaware	2,423	2,239	108.2	15	–
District of Columbia	2,874	2,813	102.2	88	–
Florida	18,386	23,288	79.0	358	858
Georgia	10,797	10,453	103.3	456	–
Hawaii <sup>3</sup>	2,217	2,187	101.4	36	–
Idaho	2,248	2,137	105.2	26	–
Illinois	15,896	18,295	86.9	295	–
Indiana	20,521	12,231	167.8	267	–
Iowa	5,343	5,198	102.8	71	–
Kansas	3,691	3,465	106.5	82	73
Kentucky	13,557	9,993	135.7	253	–
Louisiana	10,879	10,656	102.1	1,177	–
Maine	2,728	2,980	91.6	-38	–
Maryland	12,231	11,750	104.1	58	–
Massachusetts	16,479	16,353	100.8	–	1,270
Michigan	14,229	18,037	78.9	321	–
Minnesota	12,366	12,766	96.9	62	–
Mississippi	5,210	5,297	98.4	230	–
Missouri	9,186	9,885	92.9	745	-0
Montana	1,677	1,887	88.9	2	–
Nebraska	1,732	2,118	81.8	60	–
Nevada	3,820	3,899	98.0	102	–
New Hampshire	1,763	1,703	103.5	270	26
New Jersey	14,819	14,998	98.8	1,123	–



**EXHIBIT 48.** (continued)

State	Benefit spending totals included in analysis			Amounts excluded from CMS-64 benefit spending totals	
	Unadjusted T-MSIS	CMS-64 <sup>1</sup>	T-MSIS as a percentage of CMS-64	DSH	Incentive and uncompensated care pool waivers
New Mexico	\$5,148	\$5,165	99.7%	\$32	\$81
New York	89,464	54,735	163.4	3,541	2,063
North Carolina	11,229	13,306	84.4	474	–
North Dakota <sup>2</sup>	1,019	1,172	86.9	2	–
Ohio	22,806	22,242	102.5	1,409	–
Oklahoma	4,146	5,033	82.4	44	108
Oregon	6,097	9,457	64.5	49	–
Pennsylvania	15,321	31,196	49.1	1,104	–
Rhode Island	2,130	2,405	88.6	142	52
South Carolina	6,134	5,954	103.0	559	–
South Dakota	944	905	104.4	2	–
Tennessee	8,500	9,636	88.2	79	445
Texas	32,016	32,696	97.9	1,951	6,150
Utah <sup>2</sup>	1,165	2,725	42.8	33	–
Vermont	1,431	1,477	96.8	23	140
Virginia	8,681	11,268	77.0	88	–
Washington	10,572	14,719	71.8	246	-5
West Virginia	4,449	3,878	114.7	72	–
Wisconsin	7,653	9,153	83.6	72	–
Wyoming	553	593	93.3	1	–

**Notes:** T-MSIS is Transformed Medicaid Statistical Information System. FY is fiscal year. DSH is disproportionate share hospital. Includes federal and state funds. T-MSIS and CMS-64 data reflect unadjusted amounts as reported by states. Both sources exclude spending on administration, the territories, and Medicaid-expansion CHIP enrollees; in addition, CMS-64 amounts exclude \$9.8 billion in offsetting collections from third-party liability, estate, and other recoveries. For greater detail on the difference between T-MSIS and CMS-64, please see the Methodology for Adjusting Benefit Spending Data section. DSH payments and incentive and uncompensated care pool payments made under waiver expenditure authority of Section 1115 of the Social Security Act have also been excluded from CMS-64 totals. For informational purposes, the DSH and waiver expenditure amounts that were excluded are shown here.

– Dash indicates zero; \$0 or -\$0 indicates an amount between \$0.5 and -\$0.5 million that rounds to zero.

<sup>1</sup> The total amount reported on the CMS-64 may differ slightly from the state and national totals of our adjusted T-MSIS spending reported in other exhibits due to rounding when applying certain adjustments.

<sup>2</sup> State has a state plan amendment (SPA) that allows the state to receive the enhanced federal medical assistance percentage (FMAP) for Medicaid-covered children who would have, prior to January 1, 2014, been enrolled in CHIP if not for the elimination of the Medicaid asset test. These children cannot be separately identified in the T-MSIS data. Because the state claims the spending for these children as Medicaid-expansion CHIP, we reduced child enrollment and spending in these states based on the proportion reported in their SPAs. Correspondingly, we reduced California's T-MSIS spending by approximately \$503.4 million, North Dakota's T-MSIS spending by approximately \$10.2 million, and Utah's T-MSIS spending by approximately \$24.4 million.

<sup>3</sup> The CMS-64 total for Hawaii excludes \$0.8 million in fee-for-service (FFS) drug spending because the state did not report any FFS drug spending in T-MSIS.

**Source:** MACPAC, 2021, analysis of T-MSIS data as of December 2020, and CMS-64 financial management report net expenditure data as of August 2020.

**EXHIBIT 49.** Service Categories Used to Adjust FY 2019 Medicaid Benefit Spending in T-MSIS to Match CMS-64 Totals

Service category	T-MSIS service types <sup>1</sup>	CMS-64 service types
Hospital	<ul style="list-style-type: none"> <li>• Inpatient hospital</li> <li>• Outpatient hospital, including mental health other than outpatient substance abuse treatment</li> <li>• Emergency hospital</li> <li>• Critical access hospital</li> <li>• Skilled care, exceptional care, and non-acute care – hospital residing</li> </ul>	<ul style="list-style-type: none"> <li>• Inpatient hospital non-DSH</li> <li>• Inpatient hospital non-DSH supplemental payments</li> <li>• Inpatient hospital GME payments</li> <li>• Outpatient hospital non-DSH</li> <li>• Outpatient hospital non-DSH supplemental payments</li> <li>• Emergency services for aliens<sup>2</sup></li> <li>• Emergency hospital services</li> <li>• Critical access hospitals</li> </ul>
Non-hospital acute care	<ul style="list-style-type: none"> <li>• Rural health clinic</li> <li>• Laboratory</li> <li>• Radiology</li> <li>• EPSDT</li> <li>• Family planning</li> <li>• Physician</li> <li>• Dental</li> <li>• Outpatient substance abuse treatment</li> <li>• Other practitioner</li> <li>• Home health—supplies, equipment, and appliances</li> <li>• Private duty nursing</li> <li>• Nursing, including advanced practice, pediatric, nurse-midwife, and nurse practitioner</li> <li>• Respiratory care for ventilator-dependent individuals</li> <li>• Clinic</li> <li>• Physical, occupational, speech, and hearing therapy</li> <li>• Over-the-counter medications (not on pharmacy claim)</li> <li>• Dentures</li> <li>• Medical equipment and prosthetics (not on pharmacy claim)</li> <li>• Eyeglasses</li> <li>• Hearing aids</li> <li>• Diagnostic and screening services</li> <li>• Preventive services</li> <li>• Well-baby and well-child services</li> <li>• Rehabilitative services</li> <li>• Targeted case management</li> <li>• Other case management</li> <li>• Care coordination</li> <li>• Transportation</li> </ul>	<ul style="list-style-type: none"> <li>• Physician (including primary care physician payment increase)</li> <li>• Physician services supplemental payments</li> <li>• Preventive services with USPSTF Grade A or B and ACIP vaccines</li> <li>• Dental</li> <li>• Nurse-midwife</li> <li>• Nurse practitioner</li> <li>• Other practitioner</li> <li>• Other practitioner supplemental payments</li> <li>• Non-hospital clinic</li> <li>• Rural health clinic</li> <li>• Federally qualified health center</li> <li>• Laboratory and radiology</li> <li>• Sterilizations</li> <li>• Abortions</li> <li>• Hospice</li> <li>• Targeted case management</li> <li>• Statewide case management</li> <li>• Physical therapy</li> <li>• Occupational therapy</li> <li>• Services for speech, hearing, and language</li> <li>• Non-emergency transportation</li> <li>• Private duty nursing</li> <li>• Rehabilitative services (non-school based)</li> <li>• School-based services</li> <li>• EPSDT screenings</li> <li>• Diagnostic screening and preventive services</li> <li>• Prosthetic devices, dentures, eyeglasses</li> <li>• Freestanding birth center</li> <li>• Health home with chronic conditions</li> <li>• Health home for enrollees with substance use disorder</li> <li>• Tobacco cessation for pregnant women</li> <li>• Care not otherwise categorized</li> </ul>

**EXHIBIT 49.** (continued)

Service category	T-MSIS service types <sup>1</sup>	CMS-64 service types
Non-hospital acute care (continued)	<ul style="list-style-type: none"> <li>• Enabling services</li> <li>• Sterilizations</li> <li>• Prenatal care and prepregnancy family planning</li> <li>• Other pregnancy-related procedures</li> <li>• Hospice</li> <li>• Disposable medical supplies</li> <li>• Indian Health Service—family plan</li> <li>• Religious non-medical health care institutions</li> <li>• Other care</li> </ul>	
Drugs	<ul style="list-style-type: none"> <li>• Prescribed drugs</li> <li>• Over-the-counter medications (on a pharmacy claim)</li> <li>• Medical equipment and prosthetic (on a pharmacy claim)</li> </ul>	<ul style="list-style-type: none"> <li>• Prescribed drugs</li> <li>• Drug rebates (national, state sidebar, ACA offset—fee for service)</li> </ul>
Managed care and premium assistance	<p>Claim type 2 (capitated payment) or type of service:</p> <ul style="list-style-type: none"> <li>• Capitated payments to comprehensive risk based managed care plans (HMO, HIO, PACE)</li> <li>• Capitated payments to PHP</li> <li>• Capitated payments for PCCM</li> <li>• Premium payments for private insurance</li> </ul>	<ul style="list-style-type: none"> <li>• MCO (i.e., comprehensive risk-based managed care)</li> <li>• MCO drug rebates (national, state sidebar, ACA offset—fee for service)</li> <li>• PACE</li> <li>• PAHP</li> <li>• PIHP</li> <li>• PCCM</li> <li>• MCO, PAHP, and PIHP payments associated with the primary care physician payment increase, Community First Choice option, certified community behavioral health clinic, preventive services with USPSTF Grade A or B, and ACIP vaccines</li> <li>• Premium assistance for private coverage</li> </ul>
LTSS non-institutional	<p>Type of service:</p> <ul style="list-style-type: none"> <li>• Home health, including nursing; home health aide; and physical, occupational, speech, and hearing therapy</li> <li>• Personal care</li> <li>• HCBS waiver</li> </ul> <p>Or program type:</p> <ul style="list-style-type: none"> <li>• HCBS waiver</li> <li>• Balancing incentive payment</li> <li>• HCBS—1915(i)</li> <li>• HCBS—1915(j)</li> <li>• HCBS—1915(k)</li> </ul> <p>Or Title XIX service code is one of the LTSS non-institutional CMS-64 service types</p>	<ul style="list-style-type: none"> <li>• Home health</li> <li>• Personal care</li> <li>• Personal care—1915(j)</li> <li>• HCBS waiver</li> <li>• HCBS—1915(i)</li> <li>• HCBS—1915(j)</li> <li>• HCBS—1915(k)</li> <li>• Certified community behavioral health clinic</li> </ul>

**EXHIBIT 49.** (continued)

Service category	T-MSIS service types <sup>1</sup>	CMS-64 service types
LTSS institutional	<ul style="list-style-type: none"> <li>Nursing facility</li> <li>Inpatient hospital and nursing facility services for individuals age 65 and older in institution for mental disease</li> <li>Intermediate care facility</li> <li>Inpatient psychiatric or skilled nursing facility for individuals under age 21</li> <li>Inpatient and residential substance abuse treatment</li> </ul>	<ul style="list-style-type: none"> <li>Nursing facility</li> <li>Nursing facility supplemental payments</li> <li>ICF/ID</li> <li>ICF/ID supplemental payments</li> <li>Mental health facility for individuals under age 21 or age 65 and older, non-DSH</li> </ul>
Medicare <sup>3,4</sup>		<ul style="list-style-type: none"> <li>Medicare Part A and Part B premiums</li> <li>Medicare coinsurance and deductibles for QMBs</li> </ul>

**Notes:** FY is fiscal year. T-MSIS is Transformed Medicaid Statistical Information System. DSH is disproportionate share hospital. GME is graduate medical education. EPSDT is early and periodic screening, diagnostic, and treatment. USPSTF is U.S. Preventive Services Task Force. ACIP is Advisory Committee on Immunization Practices. ACA is the Patient Protection and Affordable Care Act (P.L. 111-148, as amended). HMO is health maintenance organization. HIO is health insuring organization. PACE is Program of All-Inclusive Care for the Elderly. PHP is prepaid health plan. PCCM is primary care case management. MCO is managed care organization. PAHP is prepaid ambulatory health plan (a type of PHP). PIHP is prepaid inpatient health plan (a type of PHP). HCBS is home- and community-based services. LTSS is long-term services and supports. ICF/ID is intermediate care facility for persons with intellectual disabilities. QMB is qualified Medicare beneficiary. Service categories and types reflect fee-for-service spending unless noted otherwise. Service types with identical names in T-MSIS and CMS-64 data may still be reported differently in the two sources due to differences in the instructions given to states; amounts for those that appear only in the CMS-64 (e.g., drug rebates) are distributed across Medicaid enrollees with T-MSIS spending in the relevant service categories (e.g., drugs).

<sup>1</sup> Claims in T-MSIS include variables for claim type (e.g., fee for service, capitated payment), type of service (such as inpatient hospital, physician, personal care), program type (including HCBS waiver), and Title XIX service category code (corresponds to CMS-64 category). When classifying T-MSIS claims into service categories, we generally relied on type of service, with a few exceptions. We classified all claims with a claim type indicating a capitated payment as managed care regardless of the type of service associated with the claim. For non-institutional LTSS, we also included any claim with a program type indicating HCBS or a Title XIX service category code that matched the CMS-64 service types we select for this category.

<sup>2</sup> Emergency services for non-qualified aliens are reported under individual service types throughout T-MSIS but primarily as inpatient and outpatient hospital. As a result, we include this CMS-64 amount in the hospital category.

<sup>3</sup> Medicare premiums are not reported in T-MSIS. We distribute CMS-64 amounts proportionately across dually eligible enrollees identified in the T-MSIS for each state.

<sup>4</sup> Medicare coinsurance and deductibles are reported under individual service types throughout T-MSIS. We distribute CMS-64 amounts for QMBs across CMS-64 spending in the hospital, non-hospital acute, and LTSS institutional categories prior to calculating state-level adjustment factors based on the distribution of Medicare cost sharing for hospital, Part B, and skilled nursing facility services among QMBs using 2013 Medicare data. See MedPAC and MACPAC, 2018, Table 5: Fee-for-service Medicare Part A and Part B cost sharing incurred by dual-eligible and non-dual Medicare beneficiaries, CY 2013, in Data book: Beneficiaries dually eligible for Medicare and Medicaid, Washington, DC: MedPAC and MACPAC, <https://www.macpac.gov/wp-content/uploads/2020/07/Data-Book-Beneficiaries-Dually-Eligible-for-Medicare-and-Medicaid-January-2018.pdf>.

**Source:** MACPAC, 2021, analysis of T-MSIS and CMS-64 financial management report net expenditure data.

## Understanding Managed Care Enrollment and Spending Data

There are four main sources of data on Medicaid managed care available from CMS.

### Medicaid Managed Care Enrollment and Program Characteristics Report

The Medicaid Managed Care Enrollment and Program Characteristics Report provides state-reported aggregate enrollment statistics and other basic information for each managed care plan within a state. This report is the source of information on Medicaid managed care most commonly cited by CMS as well as by outside analysts and researchers.

### T-MSIS

T-MSIS provides person-level and claims-level information for all Medicaid enrollees. For managed care, T-MSIS claims include records of each capitated payment made on behalf of an enrollee to a managed care plan (generally referred to as capitated claims) as well as records of each service received by the enrollee from a provider under contract with a managed care plan (which may be referred to as encounter or so-called dummy claims). All states collect encounter data from their Medicaid managed care plans, and CMS is working with states so these data are reported into T-MSIS. Managed care enrollees may also have FFS claims in the T-MSIS if they used services beyond those covered by a managed care plan's contract with the state.

### CMS-64

The CMS-64 financial management report provides aggregate spending information for Medicaid grouped into major benefit categories, including managed care. The spending amounts reported by states on the CMS-64 are used to calculate their federal matching dollars.

### SEDS

The SEDS provides aggregate statistics on CHIP enrollment and child Medicaid enrollment that include the number of individuals covered under FFS and managed care systems. The SEDS is currently the primary source of information on managed care participation among separate CHIP enrollees across states. However, states can submit information on separate CHIP into T-MSIS, so T-MSIS may become another source of information on separate CHIP in the future.

Historically, the annual Medicaid managed care enrollment report generally contains the most recent information available from CMS on Medicaid managed care for all states; however, it does not provide information on many characteristics of enrollees in managed care (e.g., basis of eligibility and demographics such as age, sex, race, and ethnicity). It does provide information on whether individuals are dually eligible for Medicare. Due to improved timeliness, T-MSIS provides data that are as recent as the Medicaid managed care report, and these data can be analyzed at the beneficiary level. As a result, MACStats also includes statistics based on T-MSIS and CMS-64 data, such as the percentage of individuals enrolled in managed care by eligibility group and the percentage of Medicaid benefit spending attributable to managed care.

When examining managed care statistics from various sources, the following issues should be noted:

- Figures in the annual Medicaid managed care enrollment report published by CMS include Medicaid-expansion CHIP enrollees. Although we generally exclude these children (about 5 to 6 million) from Medicaid analyses in MACStats, it is not possible to do so with the CMS annual Medicaid managed care enrollment report data.<sup>18</sup>
- The types of managed care reported by states may differ somewhat between the Medicaid managed care enrollment report and T-MSIS. For example, some states report a small



number of enrollees in comprehensive risk-based managed care in one data source but not the other.

- The Medicaid managed care enrollment report provides point-in-time figures. In contrast, T-MSIS data allow the calculation of number of enrollees ever enrolled in managed care during a fiscal year or other period of time.

## Endnotes

<sup>1</sup> For technical guides to earlier editions of MACStats, see the MACStats archive page of the MACPAC website, <https://www.macpac.gov/publication/macstats-archive/>. For MACStats prior to December 2015, the technical guide is included in each year's June report.

<sup>2</sup> CMS has been collecting Medicaid and CHIP performance indicator data on key processes related to eligibility and enrollment since late 2013. In part because the new Medicaid and CHIP performance indicator enrollment data do not identify newly eligible individuals for whom there is a higher federal matching rate, CMS is using a separate process to collect monthly Medicaid enrollment by eligibility category when states submit their CMS-64 quarterly expenditures. Specifically, a new CMS-64 enrollment form has been created to accompany the current expenditure forms. Although enrollment is submitted at the same time as expenditures, there is not a direct link between the amount of federal expenditures claimed by states and the number of enrollees reported. Instead, CMS uses CMS-64 enrollment data for monitoring and oversight purposes.

<sup>3</sup> The Data Quality Atlas can be found at <https://www.medicaid.gov/dq-atlas/welcome>.

<sup>4</sup> The timing of each state's transition from MSIS to T-MSIS can be found at <https://www.medicaid.gov/medicaid/data-and-systems/downloads/macbis/taf-rif-availability-chart.pdf>.

<sup>5</sup> Centers for Medicare & Medicaid Services (CMS), U.S. Department of Health and Human Services. 2018. Letter from Tim Hill to state health officials regarding "Transformed-Medicaid Statistical Information System (T-MSIS)." August 10, 2018, <https://www.medicaid.gov/federal-policy-guidance/downloads/sho18008.pdf>.

<sup>6</sup> See, for example, Centers for Medicare & Medicaid Services (CMS), 2010, Brief summaries and glossary (2010 edition), in Medicare & Medicaid statistical supplement, Baltimore, MD: CMS, <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/MedicareMedicaidStatSupp/Downloads/2010SummariesGlossary.zip>.

<sup>7</sup> States make capitated payments for all individuals enrolled in managed care plans even if no health care services are used. Therefore, all managed care enrollees currently are counted as beneficiaries or persons served, regardless of whether they have used any health services.

<sup>8</sup> Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services, 2020, About the National Health Interview Survey, [http://www.cdc.gov/nchs/nhis/about\\_nhis.htm](http://www.cdc.gov/nchs/nhis/about_nhis.htm).

<sup>9</sup> Agency for Health Care Research and Quality (AHRQ), U.S. Department of Health and Human Services, 2019, Medical Expenditure Panel Survey: Survey background, [http://meps.ahrq.gov/mepsweb/about\\_meps/survey\\_back.jsp](http://meps.ahrq.gov/mepsweb/about_meps/survey_back.jsp).

<sup>10</sup> Kenney, G., and V. Lynch, 2010, Monitoring children's health insurance coverage under CHIPRA using federal surveys, in Databases for estimating health insurance coverage for children: A workshop summary, Plewes, T.J., ed., Washington, DC: National Academies Press, <http://www.nap.edu/catalog/13024.html>.

<sup>11</sup> Rhoades, J.A., J.W. Cohen, and S.R. Machlin, 2010, Methodological comparison of estimates of ambulatory health care use from the Medical Expenditure Panel Survey and other data sources (pp. 2828–2837, health policy statistics section), in JSM Proceedings, Alexandria, VA: American Statistical Association, [http://www.asasrms.org/Proceedings/y2010/Files/307444\\_58577.pdf](http://www.asasrms.org/Proceedings/y2010/Files/307444_58577.pdf).

<sup>12</sup> In Kansas, several claims were missing service dates. We used paid dates to assign these claims to a time period.

<sup>13</sup> The new adult group includes those enrollees who are eligible under Section 1902(a)(10)(A)(i)(VIII) of the Act. We include both newly eligible adults and not newly eligible adults eligible under this pathway. Newly eligible adults include those enrollees who were not eligible for Medicaid under the rules that a state had in place on December 1, 2009, and received a federal matching rate of 100 percent

in 2014 through 2016, phasing down to 90 percent in 2020 and subsequent years. Adults considered not newly eligible include those enrollees who would have previously been eligible for Medicaid under the rules that a state had in place on December 1, 2009; this includes states that had already expanded to adults with incomes greater than 100 percent of the federal poverty level as of March 23, 2010, and receive the expansion state transitional matching rate. Other adults include adults under age 65 who qualify through a pathway other than disability or Section 1902(a)(10)(A)(i)(VIII) of the Act (e.g., parents and caretakers, pregnant women).

<sup>14</sup> Until December 2017, Georgia did not report header-level spending for capitation payments. If the header amount was zero or missing, we used the aggregate line-level spending for capitated payments in Georgia.

<sup>15</sup> Medicaid benefit spending reported here excludes amounts for Medicaid-expansion CHIP enrollees, the territories, administrative activities, the Vaccines for Children program (which is authorized by the Medicaid statute but operates as a separate program), and offsetting collections from third-party liability, estate, and other recoveries.

<sup>16</sup> Some of these amounts, including certain supplemental payments to hospitals and drug rebates, are lump sums that are not paid on a claim-by-claim basis for individual Medicaid enrollees. Nonetheless, we refer to these CMS-64 amounts as benefit spending, and the adjustment methodology described here distributes them across Medicaid enrollees with T-MSIS spending in the relevant service categories.

<sup>17</sup> The sum of adjusted T-MSIS benefit spending for all service categories is equal to CMS-64 benefit spending, exclusive of offsetting collections from third-party liability, estate, and other recoveries. These collections are not reported by type of service in the CMS-64 and are not reported at all in the T-MSIS.

<sup>18</sup> We generally exclude children enrolled in Medicaid-expansion CHIP from Medicaid analyses because their funding stream (Title XXI of the Act) differs from that of other Medicaid enrollees (Title XIX of the Act). In addition, spending (and often enrollment) for the Medicaid-expansion CHIP population is reported by CMS in CHIP statistics along with information on separate CHIP enrollees.